



Final Exercise Report

McGuire Nuclear Station

Licensee: **Duke Power Company**

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**FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION IV
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I. EXECUTIVE SUMMARY

On May 13, 2003, a partial participation, plume exposure pathway exercise was conducted in the emergency planning zone (EPZ) around the McGuire Nuclear Station 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 August 14, 2001, and the qualifying emergency preparedness exercise was held in December 1980.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise. The State of North Carolina, the Risk Counties of Catawba, Gaston, Iredell, Lincoln and Mecklenburg and the support County of Cabarrus were participants. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. FEMA wishes to recognize the special contribution volunteers made to the success of this exercise and their commitment to protect the health and safety of the public in their communities. This report contains the evaluation of the biennial exercise as well as the evaluation of out-of-sequence activities during the week of April 11-14, 2003. The out-of-sequence activities included: traffic control points, emergency worker decontamination, protective action for schools, lake warning, reception and congregate care and a medical services drill.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and effectively implemented them. No deficiencies were identified during this exercise. An ARCA was identified in Iredell County relating to the lack of capability by personnel to monitor and decontaminate emergency workers and vehicles. An ARCA identified during the 2001 exercise concerning the format of the EAS message and the tuning of a news release by the State was corrected during the 2002 Catawba exercise.

II. INTRODUCTION

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

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

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

- Taking the lead in off-site emergency planning and in the review and evaluation of **REPPs** 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 Agriculture
 - Department of Commerce
 - Department of Energy
 - Department of Health and Human Services
 - Department of the Interior
 - Department of Transportation
 - Environmental Protection Agency
 - Food and Drug Administration
 - Nuclear Regulatory Commission

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

Formal submission of the RERPs for the McGuire Nuclear Station to FEMA Region IV by the State of North Carolina and involved local jurisdictions occurred on March 18, 1981. Formal approval of the RERP was granted by FEMA on June 4, 1981, under 44 CFR 350.

A REP exercise was conducted on May 13, 2003, by FEMA Region IV to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the McGuire Nuclear Station. Out-of-sequence exercise activities were evaluated during the week of April 14th, 2003. These activities included: Protective actions for schools, traffic control points, emergency worker decontamination, reception and congregate care, lake warning and a medical services drill. The report presents the exercise results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency. The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the Chief Evaluator and the Region IV RAC Chairman, and approved by the Regional Director.

- NUREG-0654/FEMA-REP-1, Rev. I, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;
- "Radiological Emergency Preparedness: Exercise Evaluation Methodology," April 25, 2002.

Section III of this report, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section 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) description 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 May 13, 2003, exercise to test the offsite emergency response capabilities in the area surrounding the McGuire Nuclear Station.

A. plume Emergency Planning Zone Description

The McGuire Nuclear Station is located in northwest Mecklenburg County, approximately 17 miles northwest of Charlotte, North Carolina. The topography of the 10-mile EPZ varies from the shoreline of Lake Norman and the Catawba River to the west, to hills from the north east, south and west.

The 10-mile EPZ contains a total population of approximately 123,191. Parts of Mecklenburg, Lincoln, Gaston, Iredell and Catawba counties lie within the plume EPZ. The land use within the EPZ is predominately suburban, non-farm residential and recreational with a small amount being used to support dairy and beef cattle, and fruit and vegetable farming. There are five parks in the EPZ.

The major transportation routes include: Interstate 77, US Highway 21, and North Carolina 115 to the east; North Carolina Highway 16 to the west and North Carolina Highway 73 to the south of the site. The CSX Railroad passes within four miles to the west, with a spur that travels to the McGuire site. There is seasonal boat traffic on the Catawba River and Lake Norman. The EPZ is divided into 20 sub-areas.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the McGuire Nuclear Station exercise on May 13, 2003.

STATE OF NORTH CAROLINA

Department of Administration	Division of Highways
Department of Agriculture	Division of Motor Vehicles
Department of Crime Control and Public Safety	Division of Radiation Protection
Department of Environment, Health and Natural Resources	Division of Social Services
Department of Human Resources	Division of Solid Waste Management
Department of Transportation	Emergency Medical Services Section
Division of Emergency Management	Governor's Office
Division of Environmental Health	National Guard
Division of Facility Services	State Highway Patrol
Division of Forest Resources	Wildlife Resources Commission

RISK JURISDICTIONS

Catawba County
Gaston County
Iredell County
Lincoln County
Mecklenburg County

HOST JURISDICTION

Cabarrus County

PRIVATE/VOLUNTEER ORGANIZATIONS

Amateur Radio Emergency Service
American Red **Cross**
Civil *Air* **Patrol**

C. Exercise Timeline

Table 1, on **the** following page, presents the time at which **key** events and activities occurred during the **plume** phase of the McGuire Nuclear Station exercise on May 13, 2003. Included are times that notifications **were** made to the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

DATE AND SITE: May 13, 2003 - McGuire Nuclear Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken							
		SEOC	JIC	CATAWBA COUNTY	GASTON COUNTY	IREDELL COUNTY	LINCOLN COUNTY	MECKLENBURG COUNTY	CABARRUS COUNTY - Host
Unusual Event									
Alert	0317	0320		0327	0346	0324	0324	0324	0324
Site Area Emergency	0705	0710	0720	0709	0720	0720	0715	0710	0713
General Emergency	0929	0930	0943	0942	0940	0940	0950	0935	0943
Simulated Rad. Release Started	0740	0804	0830	0817	0740	0740	0807	0804	0740
Simulated Rad. Release Terminated	1035	End Ex	End Ex	1058	End Ex	End Ex	End Ex	End Ex	End Ex
Facility Declared Operational		0542	0652	0639	0430	0430	0545	0415	0400
State Direction and Control:		0900		0900	0900	0900	0855	0900	0900
Declaration of State of Emergency									
Local:				None	None	0900	0852	0806	0845
State:		0819		0917	0917	0825	0850	0821	0839
Exercise Terminated		1100	1100	1050	1100	1120	1112	1100	1120
Early Precautionary Actions:									
School Cancellation					0715	0440	0600	0435	
Special Needs and Institutions				0959					
Evacuation									
Closed Marinas and Boat Ramps & Parks		0610		0613					
Lake Warning		0915		0710		0702	0921	0615	
1st Protective Action Decision									
Public Notification:		0731		0732	0732	0731	0732	0732	
1st Siren Activation		0733		0733	0733	0733	0733	0733	
1st EAS Message and NOAA Tone Alert Radio		0736		0736	0736	0736	0736	0736	
2nd Protective Action Decision		1005	1005	1015	1015	1014	1015	1018	
Evacuate Zones: A, B, C, I, K, L, M, N, O, P, Q, R									
Shelter-in-place Zones: D, E, F, G, H, J, S									
2nd Siren Activation		1020		1020	1020	1020	1020	1020	
2nd EAS Message		1025		1025	1025	1025	1025	1025	
Media Briefing			1015						
JIC PADS Press Release			1049						
K1-Emergency Workers Ingest		0930		0929	0928	0947	1005	0955	

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IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities which participated in the May 13, 2003 exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the McGuire Nuclear Station.

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

A. Summary Results of Exercise Evaluation - Table 2

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

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

Table 2. Summary of Exercise Evaluation

DATE AND SITE: May 13,2003 – McGuire Nuclear Station

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

LEGEND: M = Met D = Deficiency A = ARCA N = Not Demonstrated

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 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 Director of the State Emergency Response Team (SERT) provided direction and control to the State emergency response operation. He involved a cooperative staff in the decision making process. The REP technical advisor, the two plant liaisons and the radiation protection personnel provided valuable input into the development and implementation of protective actions. The information flow within the State Emergency Operations Center (SEOC) was efficient and the issuance of Emergency Alert Messages (EAS) messages was prompt and accurate. The Western Branch Office staff under the leadership of the SERT coordinated with the counties and promptly supplied them with requested resources.

- a. **MET: Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2, 5.a.1 and 5.b.1.**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAs - RESOLVED:**

Issue No.: 37-01-11-A-01

Description: At 1210, following the General Emergency declaration the State in concurrence with the counties decided to order the evacuation of "Protective Action Zones": A, B, C, D, L, M, and N, and to shelter in place all other zones. The prescribed message was filled out during the conference call between the State and the Counties. The message had blank spaces to be filled in prior to broadcast and had two options to choose from. Option two was selected. The first blank is for the emergency classification level, which just indicated General, not General Emergency, the second blank in option two is to indicate a direction from the plant. The copy of the message from the SEOC had "NE" filled in. A handwritten note was added at the bottom of the message and no instructions were provided with the note. The first part of the note was "EVAC - L M N A B C D," then a line was drawn and below the line "Shelter K- R - S - IJ OPQ EFGH". The message as written could cause confusion at the EAS station, as to what should be broadcast and had the potential to cause confusion among the public. One of the hand written protective actions said shelter, when it should have been shelter in place.

The message was faxed to the Joint Information Center (JIC), where the staff developed a media release for the PAD. The PAD information was correctly relayed to the media during a briefing at approximately 1223. However, the first

media release, also at approximately 1223, listed all 19 zones as “evacuation zones” instead of “Protective Action Zones” as indicated in the plant calendar.” This message could have caused confusion, because of the incorrect wording and its release concurrent with the media briefing on the PAD. Fifteen minutes later another media release was issued that included the exact protective action zones affected by the PAD.

Corrective Action Demonstrated: The corrective action for this ARCA was accomplished when North Carolina EAS messages were modified to provide space to indicate which “Protective Action Zone” areas are included in the PAD. Revisions were also accomplished to ensure compatibility with the utility media releases. The revised EAS message formats were used during the Catawba exercise on March 26, 2002 with no errors or problems identified. This resolved the above ARCA.

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

1.2 Dose Assessment

The Division of Radiation Protection Director successfully managed the activities of the dose assessment group. The director and her staff promptly performed computer projections of offsite dose. These projections were compared with the results of the utility’s own program (RADDOSE V) and were found to be consistent with that of the utility. Protective action recommendations (PAR) were both timely and consistent with dose projections.

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

b. **DEFICIENCY:** NONE

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

a. **NOT DEMONSTRATED:** NONE

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

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

1.3 Joint Information Center

The McGuire Nuclear Station Joint Information Center (JIC) is staffed by professionals from the utility, the State and all five EPZ counties. The staff was very knowledgeable of their responsibilities. They understood the Plan and the procedures used to brief the media and to present emergency information and instructions to the public. The JIC operations supported the preparation of numerous press releases, the conduct of briefings, the release of information on evacuation and shelter-in-place protective actions. The news releases

were prompt and accurate. Media releases were monitored and hotline staff identified and quelled erroneous information and rumors.

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

1.4 Emergency Operations Facility

The Emergency Operations Facility (EOF) for the McGuire Nuclear Station is located in the utility's corporate office. The EOF serves as an excellent facility from which **all** participating organizations effectively managed ongoing emergency operations. Communications, coordination, and **the** flow of technical information among State officials and the utility operator were exemplary. **All** of the State officials dispatched **to** the EOF were well-trained, knowledgeable and performed their respective responsibilities in **an** extremely efficient and professional **manner**.

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

2. RISK JURISDICTIONS

2.1 CATAWBA COUNTY

2.1.1 Emergency Operations Center

The Emergency Management Coordinator effectively managed the emergency response operation. He held frequent briefings and status updates throughout the exercise, and kept everyone up to date on current State, County and plant activities. The Emergency Operations Center (EOC) staff members were knowledgeable about their duties. The Emergency Manager and Public Information Officer (PIO) were both new to the County, but had a thorough knowledge of the plans and procedures. Staff members were proactive and accomplished all activities in a professional manner.

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

2.1.2 Traffic Control Points

Personnel from the North Carolina State Highway Patrol (NCSHP) and the Catawba Sheriff Department successfully demonstrated traffic and access control (TCP) out-of-sequence on April 14, 2003. Personnel were knowledgeable of the functions involved in staffing a TCP. They knew the locations of shelters, exposure limits, potassium Iodide (KI) and its side effects. They were familiar with direct-reading and permanent-record dosimetry (20R and Thermoluminescent dosimeter (TLD)). The law enforcement personnel knew about impediment removal and had access to cones and barriers.

- a. MET: Criteria 3.a.1, 3.b.1, 3.d.1 and 3.d.2.**
- b. DEFICIENCY: NONE**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. NOT DEMONSTRATED: NONE**

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

2.1.3 Emergency Worker Decontamination

The Sherrills Ford Fire and Rescue and Catawba County Emergency Medical Services (EMS) conducted an excellent demonstration of decontamination for emergency workers and their equipment. Two individuals and one vehicle were used to demonstrate decontamination. Individuals were briefed on assignments, issued equipment and performed pre-operational checks. Personnel and the vehicle were properly monitored. The vehicle decontamination area was set up in a manner to facilitate an efficient operation. Signs were used to direct emergency workers to the decontamination center, parking areas and the contaminated vehicle restricted area.

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

2.1.4 Reception and Congregate Care

Bandy's Crossroads Volunteer Fire Department (BCVFD) demonstrated evacuee registration monitoring and decontamination at Randy's High School. Dosimetry and survey equipment were correctly issued and properly used. Firefighters were knowledgeable of the plan and its execution. The operational area was well laid out and supported assigned tasks. In addition to BCVFD equipment, an extensively equipped mobile radiological response support trailer was provided by the Catawba County Emergency Management Agency. The volunteer staff of BCVFD were dedicated professionals and fully capable of performing required functions.

Members of the Catawba Valley Chapter of the American Red Cross (ARC) successfully demonstrated the establishment of a congregate care facility at Bandy's High School. The ARC reflected a well staffed, organized and efficiently equipped organization that effectively demonstrated activities. In the event supplemental support is required, plans have been made with the Catawba County Department of Social Services to provide support. The representatives of the ARC were very knowledgeable of their role and were prepared to provide services.

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

2.2 GASTON COUNTY

2.2.1 Emergency Operations Center

The EOC was fully equipped to support 24-hour emergency operations. The staff is comprised of employees from various departments within the County along with volunteers. County elected officials actively participated in the exercise. All staff understood their respective responsibilities, followed the county plan, and successfully demonstrated their ability to respond to an emergency at the McGuire Nuclear Station. The County uses exercises to train backup personnel to provide depth to its staffing. The acting Coordinator(s) during this drill effectively managed the efforts of the staff, and provided frequent updates and guidance on plant conditions, emergency status changes, and response activities. The staff was fully involved in the decision making process. Members of the EOC staff were highly professional and displayed a very positive attitude.

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

2.2.2 Protective Actions For Schools

Interviews for the Gaston County out-of-sequence protective actions for schools were conducted on April 15, 2003 at Mount Holly Middle School. Participants included the principal and assistant principals of Pinewood Elementary School, Mount Holly Middle School and Ida Rankin Elementary School. The Director of Operations from the Superintendent's office and the Assistant County Emergency Manager also participated. All of the schools had relocation plans as a part of the county's comprehensive emergency plan. AU school officials were very knowledgeable of relocation procedures and personnel were provided annual in-service training

Law enforcement escorts have KI and dosimetry. The staff members were professional and have planned well for the relocation of schools. The schools and McGuire Nuclear Station send school relocation information to parents annually. The county has the necessary resources to relocate students. Each private school and daycare center also have a relocation plan but the county will provide assistance if requested.

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

2.2.3 Emergency Worker Decontamination

The Spencer Mountain Volunteer Fire Department successfully conducted emergency worker monitoring and decontamination adjacent to its facility. The fire station was altered to provide access for emergency workers to be decontaminated. All layouts reflected the description in the county plan. Personnel were knowledgeable of dosimetry, tuna-hack values and their responsibilities. They answered questions promptly and correctly. All personnel worked efficiently and performed their duties professionally.

- a. **MET: Criteria 1.e.1, 3.a.1, 6.a.1 and 6.b.1.**
- b. **DEFICIENCY: NONE**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE**

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

2.2.4 Traffic Control Points

On April 15, 2003, the Officers from NCSHP, Stanley Police Department and the Gaston County Sheriffs Office demonstrated TCPs through interview. State and local personnel were well trained. They were knowledgeable of dosimetry, use of KI, evacuation routes, reception and congregate care center locations, turnback values, and road impediment **removal**. The highway patrol kits contained KI, dosimetry, exposure record cards and other required materials.

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

2.2.5 Reception and Congregate Care

The Gaston County Department of Emergency Management (DEM) staff successfully demonstrated the set-up and management of congregate care, monitoring and decontamination at the Gaston College Campus (fire training facility). Personnel were very knowledgeable of the emergency plan and Standard Operating Procedures (SOP) in the operation of the facility. The staff members were familiar with monitoring, contamination control and decontamination methods. They were also familiar with dosimetry, KI and turn-back values.

The Gaston County emergency response volunteer **staff** successfully demonstrated congregate care at the W. C. Friday **Middle** School. Volunteers **from** various local emergency response organizations, i.e., ARC (the facility manager), Sheriff's Deputy, Department of Social Services and Area Radio Amateur Civil Emergency Services (ARACES) supported the facility. Personnel staffing the facility were very knowledgeable of shelter operations and use of equipment in the facility. Personnel were highly professional.

- a. **MET:** Criteria 1.b.1, 1.e.1, 3.a.1, 6.a.1 and 6.c.t.
- 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 IREDELL COUNTY

2.3.1 Emergency Operations Center

The EOC was a small, but functional operations center with all the necessary equipment and communications. The adjacent 911 center serves as the warning point for the county, and the siren and paging systems are located there. The Emergency Management Director provided excellent direction and control of a very proactive, well-trained and professional staff. The use of the WebEOC program gave the staff members the resources they needed to support the effective management of the operation. Advanced planning on the part of the team accelerated the implementation of the protective action decisions (PAD). All staff activities were conducted with careful consideration for protecting citizens. There was consistent staff concurrence and involvement.

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

2.3.2 Protective Action for Schools

An interview ~~was~~ conducted on April 17, 2003 at the Brawley Elementary School. Officials participating in the interview included the Principal of Brawley Elementary School and the Irredell County Safety and Compliance Officer. They were professional and knowledgeable of the **school relocation plan**. All school personnel were trained in school relocation procedures two **or** three times each year. The County ~~has~~ ample personnel and resources to relocate students.

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

2.3.3 Traffic Control Points

Personnel from the NCSHP **and** the Stanley Police Department successfully demonstrated TCPs out-of-sequence on **April 17, 2003 at** Brawley Elementary School. Personnel were knowledgeable of the functions **involved in** staffing a TCP. They knew the locations of shelters, exposure limits, KI and its side effects. They wore ~~and~~ were familiar with direct-reading and permanent-record dosimetry (20R ~~and~~ **simulated** TLDs). The law enforcement personnel also knew about impeding removal and had access **to** cones ~~and~~ barriers.

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

2.3.4 Reception and Congregate Care

The ARC appropriately registered six evacuees into the 1500 person capacity shelter on **ARC** forms. **ARC** personnel worked **as** a team and provided an excellent walk-through of the shelter. Provisions were in place to feed and care for the shelterees. The Greater Carolina Chapter of the **ARC** **has** agreements with the Southern Baptists and the Marine Core League to feed evacuees. **ARC** provides health and counseling services and has provisions in place to provide cots and blankets. They registered individuals who spoke Spanish. The **ARC** has the personnel and resources to manage the shelter and were professional and conscientious about their responsibilities.

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

b. **DEFICIENCY:** NONE

e. **AREAS REQUIRING CORRECTIVE ACTION:**

Issue **Number:** 37-03-6.a.1-A-01

Condition: The Statesville Fire Department and the Troutman Volunteer Fire Department were responsible for monitoring the vehicles and evacuees that **came** to the reception center. The firemen simply did not have the training to capably monitor and decontaminate evacuees and vehicles arriving at the reception center. Fire personnel had tyvek suits but none were dressed. They had a working knowledge of dosimetry and KI but physically touched personnel continuously during the monitoring process. It took personnel from 1530 to 1700 hours to set up the portal monitor and by the time the portal monitor **was** set up most their volunteers had left. **It** took too long for the firemen to initiate any monitoring or decontamination activity. For every action that was initiated, personnel had to go back to the SOP **to find** out what had to be done and how it was to be accomplished. Sometimes it took **from 15** to 20 minutes for the procedures to be read before monitoring or decontamination began. This process was so slow that evacuees and vehicles would have backed up for miles waiting to be monitored and if needed, to be decontaminated. Firemen used a computer **to** try to determine what procedures were to **be** initiated. The firemen did not manifest the independent capability **to** appropriately monitor and decontaminate evacuees and vehicles. Provisions were in place to keep the clean and contaminated individuals separate. South Iredell High School was a suitable facility for a reception and congregate care center. Those individuals who were processed through the monitoring and decontamination were appropriately registered into the congregate care center.

Possible Cause: The Troutman Volunteer Fire Department and Statesville Fire Department personnel did not **have** appropriate **training** to **effectively** monitor and decontaminate vehicles and evacuees.

Reference: NUREG 0654, 0.4.d. North Carolina Emergency Response Plan in Support of the McGuire Nuclear Site, pgs 5-6.

Effect: The **lack** of capability to monitor and decontaminate the evacuees and public vehicles would cause a back up of individuals and vehicles coming **to** the reception and congregate care center.

Recommendation: Provide **training** to the Troutman Volunteer Fire Department and the Statesville Fire Department personnel in monitoring techniques, contamination control and decontamination methods. Provide periodic drills to practice techniques **learned** during training sessions.

Schedule Of Corrective Actions: Iredell County Emergency Management with assistance from North Carolina Emergency Management has scheduled **both** the Troutman Volunteer and the Statesville Fire Departments for training on radiological monitoring and decontamination during August 2003. Procedures and local SOPs will be covered during the training. FEMA evaluators have been invited to view a demonstration by these units following the Catawba Task Force meeting September 4-5, 2003.

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

2.4 LINCOLN COUNTY

2.4.1 Emergency Operations Center

The activation of the County EOC was effectively executed and **reflected** comprehensive **planning**. The County Commissioner, County **Manager** and Emergency Management Coordinator actively participated and professionally led the emergency response organization. The staff was briefed on a **recurring** and timely basis. The energetic and enthusiastic coordination among EOC representatives effectively enabled PADs to **be** prepared **and** implemented. Discussions **within** the EOC were thought provoking **and** indicative of a proactive leadership. All members of the EOC staff displayed a positive attitude and carried out their functions, while always seeking ways to improve the EOC operation.

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 5.a.1, 5.a.3 and 5.b.1.
- b. **DEFICIENCY:** NONE
- c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ARCA - RESOLVED:** NONE
- f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.4.2 Protective Action For Schools

Interviews were conducted with the principals of Catawba Elementary School, East Lincoln Middle School, the Lincoln County Emergency Management Director and both the Superintendent and the Assistant Superintendent for Lincoln County. The principals were very knowledgeable **of** their plans and procedures for preparing students for relocation to host schools. Training **for** teachers and staff was conducted to ensure proficiency. Schools were equipped with tone-alert radios and short wave scanners. Buses were kept at the school and predetermined staff members would drive buses **in** the absence of regular drivers. The Assistant Superintendent answered questions concerning the transportation and relocation of bus resources.

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

2.4.3 Traffic Control Points

Law enforcement personnel **from** the NCSHP, the Lincoln County Sheriffs Office and the Lincolnton Police Department successfully demonstrated TCP procedures during an interview at the Lincoln County **EOC** on April 17, 2003. **All** officers were issued direct-reading dosimeters, TLDS, **KI** and recording **forms** for emergency workers. They were knowledgeable and conversant about administrative and turn-back values, reception and

congregate care center locations and road impediment removal. The officers were professional and positive about performing their duties.

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

2.4.4 Emergency Worker Decontamination

The Roger City Fire Department successfully demonstrated the ability to monitor and decontaminate emergency workers. Members followed the County Plan. Both paid and volunteer staff were knowledgeable of personal dosimetry, turn-back values, monitoring techniques and use of their equipment. All staff members worked cooperatively. The facility's parking lot was transformed into an extremely functional vehicle decontamination area. The interior of the building was properly setup. The fire department had moved into a new building and recently modified its plans to operate at the new facility. The staff was highly professional and dedicated.

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

2.4.5 Reception and Congregate Care

A successful demonstration of evacuee monitoring, registration and decontamination was conducted at the Lincoln High School. Survey and decontamination operations were demonstrated by the members of the Lincoln Fire Department, with registration demonstrated by the Lincoln County Department of Social Services, Representatives of

both agencies displayed a depth of knowledge of their respective duties. AU demonstrated a high degree of knowledge on evacuee processing procedures.

Lincolnton High School also served as a congregate care center. This is a well lit and spacious facility with enough space for evacuees, separate restrooms for males and females and provisions for food services. This facility provides health services, mass feeding, mental health counseling and sleeping resources. The Lincoln County Chapter of ARC in the department of social services promptly registered evacuees. AU personnel were confident and worked well as a team.

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

2.5 MECKLENBURG COUNTY

2.5.1 Emergency Operations Center

The EOC is co-located with the County's EMS communication center for quick access to siren activation and back up power. The Assistant City Manager and Director of Homeland Security participated in the exercise. The Emergency Management Director provided frequent briefings to the staff and conferred with the Assistant City Manager on precautionary actions and PADs affecting the County. EOC staff worked exceptionally well in planning and coordinating support for this emergency operation.

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

2.5.2 Protective Action for Schools

An interview was conducted at Hopewell Senior High School on April 14, 2003 with the Mecklenburg County Recruiting and Safety Specialist for Transportation, Executive Director of Transportation, principals and assistant principals from Davidson Elementary School, Huntersville Elementary School, Mt. Island Elementary School, Bradley Middle School and Hopewell Senior High School. The school officials were professional, very knowledgeable of school relocation plans and were enthusiastic about the performance of their responsibilities. Law enforcement escorts would have direct-reading and permanent-record dosimetry. Contact with the buses can be made through the Transportation Coordinator or the escorting law enforcement personnel.

Parents were sent relocation information from each school and the McGuire Nuclear Station. Teachers and all staff were provided training at in-service meetings and parents were also provided information at school meetings. Private schools have their own evacuation plans and transportation resources, but may call the County for assistance.

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

2.5.3 Traffic Control Points

The NCSHP, Charlotte-Mecklenburg Police and Huntersville Police successfully demonstrated TCP out-&sequence on April 14, 2003 at Hopewell Senior High School. Law enforcement personnel were very knowledgeable of personal dosimetry, turn-back values, TLDs, KI procedures, evacuation routes, reception and congregate care center location, and road impediment removal. They have the capability and resources to effectively manage evacuation. Charlotte-Mecklenburg emergency management issues dosimetry and KI to its EWs and the NCSHP carries dosimetry and KI packets.

- a. MET: Criteria 3.a.1, 3.b.1 and 3.d.1.
- b. DEFICIENCY: NONE
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE

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

2.5.4 Lake Warning

Procedures for the warning and notification of boaters were successfully demonstrated through the patrolling of zones on Lake Norman, Mountain Lake and Lake Catawba within the 10-mile EPZ. Catawba, Lincoln, Iredell and Mecklenburg counties have responsibility for warning boaters on the area of the lake within their counties. Mecklenburg County's Mobile Command Post was operational for the demonstration. County law enforcement officers called the Mobile Command Post to report on their progress in warning boaters within their respective lake zones. They also reported when they covered their zones and could be requested by Mobile Command Post officials to assist another county in warning their boaters. The Command Post zone personnel marked the zones that were covered on a broad map at the Mobile Command Post. Law enforcement officers use flares, bullhorns and sirens to warn boaters to evacuate the lake.

Officers arrived at their starting areas with appropriate dosimetry, KI, record forms for emergency worker exposure, appropriate procedures and lake maps. The officers displayed a thorough knowledge of their duties and personal protection from radiation exposure.

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

2.5.5 Emergency Worker Decontamination

The Charlotte Fire Department conducted an excellent demonstration of decontamination of emergency workers and equipment. Eight firemen from Engine Station #22 and #27 followed plans and procedures in the monitoring and decontamination of two vehicles and one individual. Particular attention was given to monitoring the vehicle grill, wheel wells, tires, door handles and bumpers. The decontamination wash down station was properly prepared for drainage, and traffic flow. The personnel decontamination area was properly

set up with floor coverings and an identifiable entrance and exit. The emergency worker was properly monitored.

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

2.5.6 Reception and Congregate Care

Members of the Charlotte Fire Department and the Greater Carolinas Chapter of the ARC successfully demonstrated reception center and congregate care at the University of North Carolina, Charlotte campus. The reception center was set up for the evacuees and emergency workers to pass through a portal monitor. Separate routes were available where clean and contaminated evacuees could walk. Evacuees found to be contaminated were sent to the shower, were re-surveyed and showered again until they were clean. After the evacuees were clean, they were sent to the 5000 person capacity shelter. Separate parking areas for clean and contaminated vehicles were identified. One vehicle was appropriately monitored and decontaminated. The monitoring and decontamination personnel wore appropriate direct-reading and permanent-record dosimetry.

Since school was in session, only the gym was available for the shelter demonstration. The Shelter Manager provided information on the health, nursing, and mental health counseling services that are provided to evacuees. The ARC also has access to ample cots and blankets and contracts with the University of North Carolina to feed and sleep evacuees.

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

2.5.7 Medical Services Drill

The McGuire Nuclear Station medical drill was conducted on April 16, 2003 within the 10-mile EPZ. Participating organizations included Mecklenburg EMS and University Memorial Hospital. The contaminated injured patient received injuries on the **left** and right **arms** because of a vehicle accident as he drove out of an area that had been evacuated.

The EMS personnel arrived at the accident site promptly and prepared to go in and care for the patient. They dressed in **full** protective clothing and wore appropriate direct-reading and permanent-record dosimetry. EMS personnel performed operational checks on their equipment and then **carefully** placed the medical equipment on a sheet. After examining the patient, placing bandages on **his** wound, carefully monitoring the patient for contamination, the EMS personnel called University Memorial Hospital and indicated they would be transporting the patient **to** the hospital. The EMS staff cut off the patient's clothing and **carefully** placed them **in a** bag to remove **as** much contamination as possible.

After insulating the ambulance well, medical personnel placed the patient on a gurney and securely wrapped **him** with a sheet. The patient was placed in the ambulance **and** transported to hospital. The hospital **staff** had prepared extremely well for the **arrival** of the patient. A protective covering had **been** placed at the entrance of the medical facility up to the Emergency Room (ER). In the ER, the professional staff worked **as** a team, used appropriate monitoring, contamination control, and decontamination methods and took appropriate saliva, wound, nasal and **ear** swabs. Exit procedures for ER personnel and release of Mecklenburg EMS personnel and the ambulance were professionally demonstrated. Both the Mecklenburg EMS staff and ER charge nurse provided excellent direction and instructions to the ER staff.

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

3. HOST JURISDICTION

3.1 CABARRUS COUNTY

3.1.1 Emergency Operations Center

Cabarrus County is a host county for evacuees from Zones B and G in Mecklenburg County. The EOC is equipped to support 24-hour operations during an emergency. The EOC staff is comprised of both full-time employees from various county agencies and volunteers. The EOC personnel understood their responsibilities, followed plans and successfully demonstrated their ability to respond to an emergency at the McGuire Nuclear Station. This EOC has the ability to communicate with the other County EOCs, SEOC and the power plant. The EOC also used the EM2000 system to send messages. The Emergency Management Director coordinated the efforts of the EOC staff, provided recurring updates and guidance on the incident status and response activities; and included the staff in the decision-making process. The members of the EOC staff were professional and displayed a positive attitude.

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

3.1.2 Traffic Control Points

Two Cabarrus County Sheriff's Department Deputies were interviewed to determine their knowledge of the Cabarrus County Emergency Plan and SOP. The Deputies were very familiar with the Plan, SOP responsibilities and information to provide to the public. The routes for evacuation and procedures to remove impediments to these routes were well understood. Several county and town wrecking and towing service organizations (paid and volunteer) are available on a call-out basis to remove impediments and to assist in establishing the TCPs. The Deputies understood the dosimetry that would be issued, how to use it and turn-back values.

- a. MET: Criteria 3.a.1, 3.d.1 and 3.d.2.
- b. DEFICIENCY: NONE

- e. AREAS REQUIRING CORRECTIVE ACTION: NONE**
- d. NOT DEMONSTRATED: NONE**
- e. PRIOR ARCAs - RESOLVED: NONE**
- f. PRIOR ARCAs - UNRESOLVED: NONE**

3.1.3 Reception and Congregate Care

Cabarrus County emergency response volunteer staff successfully demonstrated the set-up and management of the congregate care and reception center facilities at the Northwest Cabarrus Middle School. Volunteers from various local emergency response organizations, *i.e.*, ARC (the facility manager), Public Health Services, Northeast Medical Center and ARACES staffed the facility. Personnel staffing the facility were very knowledgeable of the operation and use of the equipment in the facility.

The Northwest Cabarrus Middle School has adequate facilities, a cafeteria, space, ventilation and separate restrooms for females and males. A walk-through was conducted with a facility manager. The congregate center was set up on a limited basis for demonstration purposes. The ARC disaster assistant equipment included cots, blankets, children's play material and electric fans. Six individuals were appropriately registered and processed into the facility. Mental health counseling was also available. There was adequate staff to support the operation of the shelter.

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

3.1.4 Emergency Worker Decontamination

Cabarrus County Emergency Management staff demonstrated the set-up and management of the monitoring and decontamination response facilities at the Northwest Cabarrus Middle School. Personnel staffing the facility were very knowledgeable in the set-up and operation of the equipment and facility. Appropriate dosimetry was properly issued and worn by the emergency responders. Individuals were knowledgeable of personal protective measures

and turn-back values. The facility was operated in according to the Cabarrus County Emergency Plan and SOP. The combined volunteer and paid staff were extremely professional.

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

4. SUMMARY OF AREAS REQUIRING CORRECTIVE ACTION

4.1 2003 ARCA

411 37-03-6.a.1-A-01
Iredell County
Reception and
Congregate Care

Condition: The Statesville Fire Department and the Troutman Volunteer Fire Department were responsible for monitoring the vehicles and evacuees that came to the reception center. The firemen simply did not have the training to capably monitor and decontaminate evacuees and vehicles arriving at the reception center. Fire personnel had tyvex suits but none were dressed. They had a working knowledge of dosimetry and KI but physically touched personnel continuously during the monitoring process. It took personnel from 1530 to 1700 hours to set up the portal monitor and by the time the portal monitor was set up most their volunteers had left. It took too long for the firemen to initiate any monitoring or decontamination activity. For every action that was initiated, personnel had to go back to the SOP to find out what had to be done and how it was to be accomplished. Sometimes it took from 15 to 20 minutes for the procedures to be read before monitoring or decontamination began. This process was so slow that evacuees and vehicles would have backed up for miles waiting to be monitored and if needed, to be decontaminated. Firemen used a computer to try to determine what procedures were to be initiated. The firemen did not manifest the independent capability to appropriately monitor and decontaminate evacuees and vehicles. Provisions were in place to keep the clean and contaminated individuals separate. South Iredell High School was a suitable facility for a reception and congregate care center. Those individuals who were processed through the monitoring and decontamination were appropriately registered into the congregate care center.

Possible Cause: The Troutman Volunteer Fire Department and Statesville Fire Department personnel did not have appropriate training to effectively monitor and decontaminate vehicles and evacuees.

Reference: NUREG 0654, 0.4.d. North Carolina Emergency Response **Plan** in Support of the McGuire Nuclear Site, pgs 5-6.

Effect: The lack of capability to monitor and decontaminate the evacuees and public vehicles would cause a back up of individuals and vehicles coming to the reception and congregate care center.

Recommendation: Provide training to the Troutman Volunteer Fire Department and the Statesville Fire Department personnel in monitoring techniques, contamination control and decontamination methods. Provide periodic drills to practice techniques learned during **training** sessions.

Schedule Of Corrective Actions: Iredell County Emergency Management with assistance **from** North Carolina Emergency Management **has** scheduled both the Troutman Volunteer and the Statesville Fire Departments for training on radiological monitoring and decontamination during August **2003**. Procedures and local SOPs will be covered during the training, FEMA evaluators have been invited to view a demonstration by these units following the Catawba Task Force meeting September 4-5, 2003.

4.2 PRIOR ARCAs - RESOLVED

4.2.1 37-01-11-A-OB State of North Carolina SEOC

Description: At 1210, following the General Emergency declaration the State in concurrence with the counties decided to order the evacuation of "Protective Action Zones": A, B, C, D, L, M, and N, **and** to shelter in place all other **zones**. The pre-scripted message was filled out during the conference **call** between the State and the Counties. The message had blank spaces to **be** filled in prior to broadcast and had two options to choose from. Option **two** was selected. The **first** blank is for the emergency classification level, which just indicated General, not General Emergency, the second blank in option two is to indicate a direction from the plant. The copy **of** the message from the SEOC had "NE" filled in. A handwritten note was added at the bottom of the message and no instructions were provided with the

note. The first part of the note was “EVAC – L M N
A B C D,” then a line ~~was~~ drawn and below the line
“Shelter K- R – S – IJ OPQ EFGH”. The message as
written could cause confusion at the EAS station, as
to what should be broadcast and had the potential to
cause confusion among the public. One of the hand
written protective actions said shelter, when it should
have been shelter in place.

The message ~~was~~ faxed to the Joint Information
Center (JIC), where the staff developed a media
release for the PAD. The PAD information was
correctly relayed to the media during a briefing at
approximately 1223. However, the first media
release, also at approximately 1223, listed all 19 zones
as “evacuation zones” instead of “Protective Action
Zones” as indicated in the plant calendar.” This
message could have caused confusion, because of the
incorrect wording and its release concurrent with the
media briefing on the PAD. Fifteen minutes later
another media release was issued that included the
exact protective action zones affected by the PAD.

Corrective Action Demonstrated: The corrective
action for this ARCA ~~was~~ accomplish when North
Carolina EAS messages were modified to provide
space to indicate which “Protective Action Zone”
areas are included in the PAD. Revisions were also
accomplished to ensure compatibility with the utility
media releases. The revised EAS message formats
were used during the Catawba exercise on March 26,
2002 with no errors or problems identified. This
resolved the above ARCA.

APPENDIX I

ACRONYMS AND ABBREVIATIONS

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

ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARACES	Area Radio Amateur Civil Emergency Services
CFR	Code of Federal Regulations
DEM	Division of Emergency Management
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
EAS	Emergency Alert System
EMA	Emergency Management Agency
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ER	Emergency Room
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FR	Federal Register
GE	General Emergency
JIC	Joint Information Center
KI	Potassium Iodide
NCDT	North Carolina Department of Transportation
NCDA	North Carolina Department of Agriculture
NCDRP	North Carolina Division of Radiation Protection
NCSHP	North Carolina State Highway Patrol
NRC	Nuclear Regulatory Commission

NUKEG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, <i>"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980</i>
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PIO	Public Information Officer
R	Roentgen
RAC	Regional Assistance Committee
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
SEOC	State Emergency Operations Center
SERT	State Emergency Response Team
SOP	Standard Operating Procedures
TCP	Traffic Control Point
TLD	Thermoluminescent Dosimeter
USDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS

The following is a list of the personnel who evaluated the McGuire Nuclear Station exercise on May 13, 2003. The organization represented by each evaluator is indicated by the following abbreviations:

FDA	- Food and Drug Administration
FEMA	- Federal Emergency Management Agency
ICF	- ICF Consultants, Incorporated
NRC	- Nuclear Regulatory Commission
PHS	- Public Health Service

Lawrence A. Robertson

RAC Chairman

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

Chief Evaluator	Robert Perdue	FEMA
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STATE OF NORTH CAROLINA

State Emergency Operations Center	Robert Perdue Bill Edrnson	FEMA ICF
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Dose Assessment	Bernie Hannah	ICF
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Joint Information Center	Brenda Pittman Bob Rospenda	ICF ICF
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Emergency Operations Facility	Robert Trojanowski	NRC
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Lake Warning (4-16-03; 1000 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA
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CATAWBA COUNTY

Emergency Operations Center	Helen Wilgus Tom Bowman	FEMA PHS
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Traffic Control Points (4-15-03; 1600 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA
---	--------------------------------	--------------

Monitoring & Decon – EW & Equip	Robert Perdue Eddie Hickman	FEMA FEMA
---------------------------------	---	--------------

Sherills Ford Fire & Rescue (4-15-03; 1900 hrs)		
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Monitoring, Registration & Decon – Evacuees (5-13-03; 1900 hrs) Rod Arpin ICF

Reception & Congregate Care (5-13-03; 1900 hrs) Rod Arpin ICF

GASTON COUNTY

Emergency Operations Center Eddie Hickman Harold Spedding FEMA ICF

Protective Actions for Schools (4-15-03; 0900 hrs) Robert Perdue Eddie Hickman FEMA FEMA

Traffic Control Points (4-15-03; 1030 hrs) Robert Perdue Eddie Hickman FEMA FEMA

Monitoring & Decon – EWs & Evacuees (5-12-03; 1800 hrs) Bill McCance ICF

Backup Route Alerting (4-15-03; 1130 hrs) Robert Perdue Eddie Hickman FEMA FEMA

Reception & Congregate Care (5-12-03; 1930 hrs) Bill McCance ICF

IREDELL COUNTY

Emergency Operations Center Turn Reynolds FEMA

Protective Actions for Schools (4-17-03; 1330 hrs) Robert Perdue Eddie Hickman FEMA FEMA

Traffic Control (4-17-03; 1400 hrs) Robert Perdue Eddie Hickman FEMA FEMA

Monitoring & Decon - EW (4-17-03; 1730 hrs) Robert Perdue Eddie Hickman FEMA FEMA

Registration, Monitoring & Decon - Evacuees & EWs (4-17-03; 1530 hrs) Robert Perdue Eddie Hickman FEMA FEMA

Reception & Congregate Care (4-17-03; 1630 hrs) Robert Perdue Eddie Hickman FEMA FEMA

LINCOLN COUNTY

Emergency Operations Center	Bill Larrabee	ICF
Protective Actions for Schools (4-15-03; 1330 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA
Traffic Control (4-17-03; 1000 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA
Monitoring & Decon – EW (5-12-03; 1930 hrs)	Glenn Kinnear	ICF
Registration, Monitoring & Decon - Evacuee (5-12-03; 1800 hrs)	Rod Arpin	ICF
Reception and Congregate Care (5-12-03; 1900 hrs)	Rod Arpin	ICF

MECKLENBURG COUNTY

Emergency Operations Center	Joseph Canoles	FEMA
Protective Action for Schools (4-14-03; 1300 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA
Traffic Control Points (4-14-03; 1400 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA
Monitoring & Decon – EW (4-14-03; 1100 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA
Registration, Monitoring & Decon – Evacuees (4-14-03; 1600 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA
Reception and Congregate Care (4-14-03; 1600 hrs)	Robert Perdue Eddie Hickman	FEMA FEMA

CABARRUS COUNTY

Emergency Operations Center	Tom Trout	FDA
Traffic Control (5-13-03; 1800 hrs)	Bili McCance	ICF
Monitoring, Registration & Decon - Evacuees (5-13-03; 1800 hrs)	Bill McCance	ICF

APPENDIX 3

EXERCISE CRITERIA AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise criteria which **were** scheduled for demonstration in the McGuire Nuclear Station exercise on May 13, 2003 and the extent-of-play agreement approved by FEMA Region IV.

A. Exercise Criteria

On the following pages are the specific radiological emergency preparedness criteria 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 in preparation for the McGuire Nuclear Station exercise on May 13, 2003. The extent-of-play agreement includes any significant modification or change in the level **of** demonstration of each exercise criterion listed in Subsection A of this appendix.



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 24, 2003

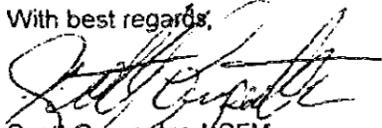
Robert E. **Perdue**, Ph.D.
Training, Exercise, and Evaluation Branch
Federal Emergency Management Agency, Region IV
3003 Chamblee-Tucker Rd.
Atlanta, Ga. 30341

Dear Dr. Perdue:

Attached you will find a final copy of the 2003 Exercise Extent of Play Agreement (EOP) for McGuire Nuclear Site's partial participation exercise. The EOP *has* been discussed, revised and approved by representatives from the McGuire Task Force. Submission of this EOP is two weeks late, as previously discussed, due to the winter storm events in North Carolina.

Please provide us with a **list** of federal evaluators for the off-scenario demonstrations as well as for the scheduled exercise **as soon** as you complete the lists. Thank you for your time and consideration and we look forward to your letter of acceptance.

With best regards,


Scott Carpenter, NCEM
State Exercise Coordinator

c: Steve Payne
Gary Faltinowski
Mike **Cook**
Tim Millet
Johnny James

116 West Jones Street, Raleigh, North Carolina 27603-1335 (919)733-3857



An Equal Opportunity/Affirmative Action Employer

Evaluation Sub Elements (EPZ) = Emergency Planning Zone (IPZ) = Ingestion Planning Zone E – Evaluated T – Training Only O – Off Scenario	N C S E R T	C A B A R R U S	C A T A W A B A	G A S T O N	I R E D E L L	L I N C O L N	M E C K L E N B U R G
	Host	EPZ	EPZ	EPZ	EPZ	EPZ	
4. Field Measurement and Analysis							
4.a.1. Plume Phase Field Measurements & Analysis Equipment	T	n/a	n/a	n/a	n/a	n/a	n/a
4.a.2. Plume Phase Field Measurements & Analysis Management	T	n/a	n/a	n/a	n/a	n/a	n/a
4.a.3. Plume Phase Field Measurements & Analysis Procedures	T	n/a	n/a	n/a	n/a	n/a	n/a
<i>4.b. Post Plume Phase Field Measurements & Sampling</i>	2007	n/a	n/a	n/a	n/a	n/a	n/a
<i>4.c. Laboratory Operations</i>	2007	n/a	n/a	n/a	n/a	n/a	n/a
5. Emergency Notification and Public Information							
5.a.1. Activation of the Prompt Alert and Notification	E	n/a	E	E	E	E	E
5.a.2. Activation of the Prompt Alert and Notification Fast Breaker	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5.a.3. Exception Areas and Back-up Alert and Notification	E-O	n/a	E-O	E	E-O	E-O	E-O
5.b.1. Emergency Information & Instructions for the Public & Media	E	n/a	E	E	E	E	E
6. Support Operations/Facilities							
6.a.1. Monitoring & Decontamination of Evacuees & Emergency Workers' Registration of Evacuees	n/a	E-O	E-O	E-O	E-O	E-O	E-O
6.b.1. Monitoring & Decontamination of Emergency Worker Equipment	n/a	n/a	E-O	E-O	E-O	E-O	E-O
6.c.1. Temporary Care of Evacuees	n/a	E-O	E-O	E-O	E-O	E-O	E-O
6.d.1. Transportation & Treatment of Contaminated, injured Individuals (MS-1)	n/a	n/a	n/a	n/a	n/a	n/a	E-O

FINAL: April 4, 2003

**2003 MCGUIRE EXERCISE
OUT-OF-SEQUENCE ACTIVITIES**

April 14-17, 2003

Monday April 14, 2003 Mecklenburg County				Tuesday April 15, 2003 Catawba & Gaston Counties		
Time	Evaluator	Escort	Location	Evaluator	Escort	Location
0800 to 1200	Robert Perdue	Mike Cook Cell: 828- 244-1357	Mecklenburg County:	Robert Perdue	Mike Cook Cell: 828- 244-1357	Catawba County:
			0900 Monitoring & Decontamination of Emergency Workers & Equipment Criterion 6.a.1 & 6.b.1 CFD Station # 22 Location: 1914 West. Sugar Creek Rd Town?? 1130 Staff Assistance Visit			1100 Staff Assistance Visit Gaston County: 0900 Protective Actions for Schools - Criterion 3.c.2 Pinewood Elementary School Mount Holly Middle School Ida Rankin Elementary Location: Mount Holly Middle School 124 South Hawthorne Street Mount Holly, NC 1030 Traffic Control Points Criterion 3.d.1. Stanley Police Gaston County Sheriff NC SHP Location: Mount Holly Police Department 125 East Charlotte Avenue Mount Holly, NC 1130 Backup Alert and Notification of the Public - Criterion 5.a.3 Gaston County Fire Marshal East Gaston VFD Location: Mount Holly Police Department 125 East Charlotte Avenue Mount Holly, NC

<p>1200 to 1800</p>	<p>Robert Perdue</p>	<p>Mike Cook Cell: 828- 244-1357</p>	<p>Mecklenburg County:</p> <p>1300 Protective Actions for Schools Criterion 3.c.2 Hopewell High School Mt. Island Elementary Bradley Middle School Huntersville Elementary School Davidson Elementary Schwl Location: Hopewell Senior High School 11530 Beatties Ford Read</p> <p>1400 Traffic Control Points Criterion 3.d.1. NC Highway Patrol Charlotte-Mecklenburg Police ,Huntersville Police. Location: Hopewell Senior High School 11530 Beatties Ford Rd</p> <p>1600 Reception Center - Criterion 6.a.1 University of NC at Charlotte</p>	<p>Robert Perdue</p>	<p>Mike Cook Cell: 828- 244-1357</p>	<p>Lincoln County:</p> <p>1330 Protective Actions for Schools Criterion 3.c.2 Rock Springs Elementary School East Lincoln Middle School Lincoln County Superintendent Office Lincoln County Emergency Management Location: Lincoln County EOC #1 Court House Square Lincolnton, NC</p> <p>Gaston County</p> <p>1330 Staff Assistance Visit</p> <p>Catawba county:</p> <p>1600 Traffic Control Points Criterion 3.d.1. Agency? Location:</p>
<p>1800 to 2400</p>	<p>Robert Perdue</p>	<p>Mike Cook Cell: 828- 244-1357</p>		<p>Robert Perdue</p>	<p>Mike Cook Cell: 828- 244-1357</p>	<p>Catawba County:</p> <p>1900 Monitoring & Decontamination of Emergency Workers & Equipment Criterion 6.a.1 & 6.b.1 Sherrills Ford Fire & Rescue Base 2</p>

		Wednesday April 16, 2003 Mecklenburg County		Thursday April 17, 2003 Lincoln County/Iredell County		
Time	Evaluator	Escort	Location	Evaluator	Escort	Location
0800 to 1200	Robert Perdue	Mike Cook Cell: 828- 244-1357	1000 Lake Warning - Criterion 5.a.3 Environmental Center Boat Ramp Catawba County Lake Patrol, Lincoln County EM, Iredell County EM, NC Wildlife, Mecklenburg Parks & Recreation, Charlotte/ Mecklenburg Police,	Robert Perdue	Mike Cook Cell: 828- 244-1357	Lincoln County: 1030 Traffic Control Points Criterion 3.d.1. NC State Highway Patrol Lincoln County Sheriff Lincolnton Police Department Location: Lincoln County EQC #1 Court House Square Lincolnton, NC 1130 Staff Assistance Visit
1200 to 1800	Robert Perdue	Mike Cook Cell: 828- 2144-1357	Iredell County: 1300 Staff Assistance Visit Mecklenburg County: 1600 MS1 Drill Criterion 6.d.1. MEDIC & University Manorial	Robert Perdue	Greg Atchley Cell: 704- 929-0015	Iredell County: 1130 Protective Actions for Schools - Criterion 3.c.2 Brawley Elementary School School Staff 1140 Traffic Control Points Criterion 3.d.1. Brawley Elementary School ICSD / NCSHP 1530 Reception Center Criterion 6.8.1 Troutman FD and Statesville FD Location: South Iredell High School 1630 Temporary Care of Evacuees Criterion 6.c.1 Red Cross Location: South Iredell High School 1730 Monitoring & Decontamination of Emergency Workers & Equipment - Criterion 6.a.1 & 6.b.1

						Mooresville FD and Statesville FD Location: I-77 Rest Stop – North Bound Side
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F i n a l
A p r i l 3 , 2 0 0 3

McGuire Nuclear Station
2003 Extent of Play Agreement

A. General Information

- Activities will begin at approximately 4:00 a.m. and conclude approximately 11:00 a.m.
- An Actual call-up of SERP agencies will be demonstrated off-hours.
- A silent test of the sirens will be conducted at Site Area Emergency and simulated at General Emergency.
- Exercise activities will conclude when all exercise criteria have been accomplished and verified by the Chief Controller's for the State and Utility.
- State and county participants may be pre-positioned at exercise locations.
- Utility will provide a liaison to the State EOC, Catawba County EOC, Gaston County EOC, Iredell County EOC, Lincoln County EOC and Mecklenburg County EOC.
- A state or county escort will accompany Federal Evaluators to out-of-sequence demonstrations.
- A State Controller will be located in the State EOC, Catawba County EOC, Gaston County EOC, Iredell County EOC, Lincoln County EOC, and the JIC.
- A State Controller and a SERT Representative will be located in each EPZ county EOC.
- Exercise participants will have the opportunity to remediate and re-demonstrate exercise criterion immediately upon identifying any error/s with the approval of the federal evaluator.
- All demonstrations will be in accordance with the approved Extent of Play Agreement.
- Exercise guidance will be under the "Interim Radiological Emergency Preparedness (REP) Program Manual, August 2002.

B. Scenario

- Scenario will be developed by the Utility in consultation with the State.
- Rumor control calls will be from a controlled calling cell established at the utility. Controllers will have access to a "bridge line" in order to coordinate calls to counties prior to and following JIC activation.

F i n a l

A p r i l 3 , 2 0 0 3

1. EMERGENCY OPERATIONS MANAGEMENT

1.a. - Mobilization

Criterion 1.a.1

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

EXTENT OF PLAY

- Participants: NC **SERP** Agencies, Cabarrus, Catawba, Gaston, Iredell, Lincoln and Mecklenburg Counties
- State and local EOCs will be activated and staffed based on standard operational guidelines/procedures for that agency. Personnel "will not" be pre staged at the State EOC.
- Cabarrus, Iredell, and Mecklenburg Counties will preposition staff at their EOC.
- Notification rosters will be utilized during an "Actual" call up of SERT members. Emergency management personnel will discuss alert notification procedures with the evaluator, following the activation of the facility.

1.b. - Facilities

Criterion 1.b.1

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

EXTENT OF PLAY:

- Participants: Cabarrus, Catawba, Gaston, Iredell, Lincoln and Mecklenburg Counties
- All participants in agreement with criterion.
- State EOC was demonstrated during Brunswick 2002 exercise.

1.c - Direction and Control:

Criterion 1.c.1:

Key personnel **with** leadership roles **for** the **ORO** provide Direction and Control **to** that **part of** the overall response **effort** for which **they** are responsible.
(NUREG-0654, A.1.d.,2.a.,b.)

EXTENT OF PLAY:

F i n a l

A p r i l 3 , 2 0 0 3

- Dosimeters will be inspected by FEMA during the Staff Assistance Visit to the EPZ Counties prior to or during the exercise.
- All participants in agreement with criterion.

Catawba County:

- Staff Assistance Visit will take place off-scenario, April 15, 2003 at 11:00 a.m.

Gaston County:

- **Staff** Assistance Visit will take place off-scenario, April 15, 2003 at 1:30 p.m.

Iredell County:

- Staff Assistance Visit will take place off-scenario, April 16, 2003 at 1:00 p.m.

Lincoln County:

- Staff Assistance Visit will take place off-scenario, April 17, 2003 at 11:30 a.m.

Mecklenburg County:

- Staff Assistance Visit will take place off-scenario, April 16, 2003 at 1:00 p.m.

2. PROTECTIVE ACTION DECISION MAKING

2.a – Emergency Worker Exposure Control:

Criterion 2.a.1:

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

EXTENT OF PLAY:

- Participants: NC SERT (SERT Leader, RAD Protection, DHHS), Cabarrus, Catawba, Gaston, Iredell, Lincoln and Mecklenburg Counties
- No distribution of actual or simulated KI will be accomplished during the exercise.
- All participants in agreement with criterion.

2.b - Radiological assessment and protective action recommendations and Decisions for the Plume Phase of the Emergency:

F i n a l

A p r i l 3 , 2 0 0 3

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

EXTENT OF PLAY:

- Participants: NC SERT (DHHS), Catawba, Gaston, Iredell, Lincoln and Mecklenburg Counties
- Counties will discuss procedures with the federal evaluator, and demonstrate the use of a special populations list.
- Transportation resources necessary to evacuate special needs populations will be identified and calls will be simulated.
- Distribution of KI to institutionalized individuals, who cannot be evacuated, will be via "discussion only" with the federal evaluator.

3. PROTECTIVE ACTION IMPLEMENTATION

3.a – Implementation of Emergency Worker Exposure Control:

Criterion 3.a.1:

The **OROs** issue appropriate dosimeters and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their **dosimeters** and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.)

EXTENT OF PLAY:

- Participants: NC SERT (State Highway Patrol), Cabarrus, Catawba, Gaston, Iredell, Lincoln and Mecklenburg Counties
- All participants in agreement with criterion.

3.b – Implementation of KI Decision:

Criterion 3.b.1:

KI and appropriate instructions are available should a decision to recommend Use of **KI** be made. Appropriate record keeping of the administration of **KI** for emergency workers and institutionalized individuals is maintained. (NUREG-0654, E.7., J.10. e, f.)

EXTENT OF PLAY:

- Participants: NC SERT (SERT Leader, Radiation Protection, DHHS), Catawba, Gaston, Iredell, Lincoln and Mecklenburg Counties
- Demonstration of KI will be through "Discussion Only" at State and county EOCs.

F i n a l

A p r i l 3 , 2 0 0 3

Location: Mount Holly Middle School
124 South Hawthorne Street, Mount Holly, NC

Date & Time: Off-Scenario. Tuesday, April 15, 2003 at 9.00 a.m.

Iredell County Schools for evaluation include:

Brawley Middle School - Mooresville

664 Brawley School Road
Mooresville, NC

Date & Time: Off-Scenario, Thursday. April 17, 2003 at 1:30 p.m.

Lincoln County Schools for evaluation include:

Rock Springs Elementary School - Denver
East Lincoln Middle School - Iron Station Township
Lincoln County Superintendent's Office - Lincolnton
Lincoln County Emergency Management - Lincolnton

Location: Lincoln County EOC
Lincoln County Court House (basement)
#1 Court Square
Lincolnton, NC

Time: Off-Scenario, Tuesday, April 15, 2003 at 1.30 p.m.

Mecklenburg County Schools for evaluation include:

Huntersville Elementary School - Huntersville, NC
Bradley Middle School - Huntersville, NC
Hopewell Senior High School - Huntersville, NC
Mount Island Elementary School - Charlotte, NC
Davidson Elementary School - Davidson, NC

Location: Hopewell Senior High School
11530 Beatties Ford Road, Huntersville, NC

Time: Off-Scenario, Monday, April 14, 2003 at 1.00 p.m.

3.d - Implementation of Traffic and Access Control.

Criterion 3.d.1:
Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel (NUREG-0654, J.10.g, j, k.)

F i n a l
A p r i l 3 , 2 0 0 3

Location: Brawley Middle School
664 Brawley School Road
 Mooresville, NC

Date & Time: Off-scenario, Thursday, April 17, 2003 at 2:00 p.m.

Lincoln County Representatives available for interview include:

Lincoln County Sheriff's Department
NC State Highway Patrol
Lincolnton Police Department

Location: Lincoln County EOC
Lincoln County Court House
One Court Square (basement)
Lincolnton, NC

Date & Time: Off-scenario, Thursday, April 17, 2003 @ 10:00 a.m

Mecklenburg County Representatives available for interview include:

Charlotte/Mecklenburg Police Department
NC Highway Patrol
Huntersville Police Department

Location: Hopewell Senior High School
11530 Beatties Ford Road
Huntersville, NC

Date & Time: Off-scenario. Monday. April 14, 2003 @ 2:00 p.m.

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

EXTENT OF PLAY:

Participants: NC SERT (Emergency Services, Infrastructure), Cabarrus, Catawba, Gaston, Iredell. Lincoln and Mecklenburg Counties

- The EM Coordinator or appropriate EOG staff will describe what resources are available to remove impediments from thoroughfares.
- Counties in agreement with criterion.

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Catawba County:

Monitoring & Decontamination of Emergency Worker Equipment:

Sherills Ford Fire and Rescue
4385 Mount Pleasant Road
Sherills Ford, NC

Date & Time: Off Scenario, Tuesday, April 15, 2003 at 7:00 p.m.

Gaston County:

Monitoring & Decontamination of Emergency Worker Equipment:

Spencer Mountain Fire Department will demonstrate at:

1011 Dallas-Stanley Highway
Dallas, NC

Date & Time: Off-scenario, May 13, 2003 at 6:00 p.m.

Iredell County:

Monitoring & Recontamination of Emergency Worker Equipment:

Mooresville and Statesville Fire Departments will demonstrate at:

I-77 Rest Area, North Bound Side of Interstate
 Mooresville. **NC**

Date & Time: Off-scenario, Thursday, April 17, 2003 at 5:30 p.m.

Lincoln County:

Monitoring & Decontamination of Emergency Worker Equipment:

Boger City Fire Department will demonstrate at:

2497 East Main Street:
Lincolnton, NC

Date & Time: Off-scenario, May 12, 2003 at 7:30 p.m.

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5040 East bandy's Road
Catawba, NC

Date & Time: Off-scenario, May 13, 2003 at 7.00 p.m.

Gaston County:

Temporary Care of Evacuees:

American Red Cross & Gaston County Dept. of Social Services will demonstrate at:

W.C. Friday Middle School
1221 Ratchford Road
Dallas, NC

Date & Time: Off-scenario, May 12, 2003 at 7:30 p.m

Iredell County:

Temporary Care of Evacuees:

American Red Cross will demonstrate at:

South Iredell High School
299 Old Mountain Road
Iredell County. NC

Date & Time: Off-scenario, Thursday, April 17, 2003 at 4:30 p.m.

Lincoln County:

Temporary Care of Evacuees:

American Red Cross & Dept. of Social Services will demonstrate at:

Lincolnton High School
North Aspen Street
Lincolnton, NC

Date & Time: Off-scenario, Monday, May 12, 2003 at 7:00 p.m.

Mecklenburg County:

Temporary Care of Evacuees:

American Red Cross will demonstrate at:

University of North Carolina - Charlotte

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events, which was used as the basis **for invoking** emergency response actions **by** OROs **in** the McGuire Nuclear Station exercise on **May** 13,2003.

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

Time Line

Time Event

- 0300 The exercise begins with the plant operating at full power. Plant equipment status is as follows:
- The Standby Diesel generator is running following maintenance.
 - The A Train VA Exhaust Filter is out of service for Carbon bed replacement. Expected to be returned to service by 1200.
 - The BA NI Pump is isolated for motor replacement. Expected return to service on 2/14/03, at 1600.
- 0310 A fire in the Standby Shutdown Facility occurs.
- 0330 Operations Shift Manager (OSM)/ Emergency Coordinator (EC) declares **ALERT** based on Emergency Action Level (EAL) 4.6.A.1-1 Fire affecting safety equipment required to maintain safe shutdown. Site Assembly is to be conducted to account for all onsite personnel.
- 0345 State and Counties notified of ALERT via Emergency Notification Form (ENF) using Selective Signaling System. NRC notification follows immediately but no later than one hour after ALERT declaration.
- 0445 TSC and OSC Activated.
- 0515 EOF Operational.
- 0515 A Turbine-Generator runback to 50% occurs due to a loss of the 1A Main Feed water Pump.
- 0700 A 50 GPM leak occurs in the 1B ND Heat Exchanger Room. The leak is on the discharge piping of the 1B ND Heat Exchanger. The leak is caused by back leakage through check valves 1NI-81 and 1NI-180 causing the low pressure ND piping to over pressurize and fail.
- 0730 **An** Anticipate transient Without Scram (ATWS) occurs due to loss of 1D NC Pump, with Reactor Power greater than P8 (48%).

well as monitored prior to release to the environment, resulting in a much-reduced radiological release rate to the environment.

1100 – 1200 This exercise will be terminated when all required objectives have been demonstrated.