Department of Homeland Security
Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia 30341

FEMA

AUG 26 2016

Leonard Wert, Regional Administrator - RII
US Nuclear Regulatory Commission
One Marquis Tower
245 Peachtree Center Avenue, Suite 1200
Atlanta, Georgia 30303

Dear Mr. Wert:

Enclosed is a copy of the final exercise report for the April 5, 2016, Catawba Nuclear Station full-participation plume phase exercise. This report addresses the evaluation of the plans and preparedness for the States of South Carolina and North Carolina; York, Cherokee, Chester, Lancaster and Union Counties, South Carolina; and Charlotte-Mecklenberg and Gaston Counties, North Carolina.

This successful exercise demonstrated the commitment to protecting the health and safety of the public by the States of South Carolina and North Carolina and the affected counties. Federal evaluators did not identify any level 1 findings during the exercise. Three level 2 findings were identified for South Carolina during the exercise and out-of-sequence activities. The first finding concerned insufficient monitoring instruments to monitor the expected number of evacuees in approximately 12 hours. This finding was resolved by the State of South Carolina. The second finding concerned Department of Health and Environmental Control personnel not using proper dosimetry or a tracking mechanism for the issuance of potassium iodide. The third finding concerned the emergency workers in Union County being unfamiliar with the procedures for and use of survey instruments. FEMA personnel will monitor the resolution of these findings.

Based on the results of this exercise and FEMA's review of the annual letters of certification for 2015 submitted by the States of South Carolina and North Carolina, the offsite radiological emergency response plans and preparedness for the States of South Carolina and North Carolina and the affected local jurisdictions site-specific to the Catawba Nuclear Station can be implemented. They are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site.

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The Title 44 CFR, Part 350, approval of the offsite radiological emergency response plans and preparedness site-specific to the Catawba Nuclear Station, granted on October 8, 1985 for the States of South Carolina and North Carolina will remain in effect.

Should you have any questions, please contact Conrad Burnside at 770/220-5486.

Sincerely,

Gracia B. Szczech
for Regional Administrator

Enclosure

cc: Ms. Vanessa E. Quinn, Branch Chief
Federal Emergency Management Agency Headquarters
Radiological Emergency Preparedness
Branch – NP-TH-RP, Mail Stop #8610
1800 South Bell Street
Arlington, Virginia 20598-3025

NRC Headquarters Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-0001

Final After Action Report

Catawba Nuclear Station
Radiological Emergency Preparedness Exercise
Exercise Date: April 5, 2016

August 26, 2016

FEMA

Final After Action Report

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FEMA

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Executive Summary

On April 5, 2016, the United States Department of Homeland Security, Federal Emergency Management Agency Region IV Radiological Emergency Preparedness Program staff evaluated a plume-exposure-pathway exercise in the 10-mile emergency planning zone for the Catawba Nuclear Station. The evaluations of out-of-sequence activities conducted on February 17, and the weeks of March 21 and March 28, 2016, are also included in this report.

Catawba Nuclear Station, operated by Duke Energy, is located in South Carolina on the western shore of Lake Wylie, approximately six miles north of Rock Hill, South Carolina. The emergency planning zone encompasses portions of York County in South Carolina and Charlotte-Mecklenburg and Gaston Counties in North Carolina. Host counties included Cherokee, Chester, Lancaster, and Union counties in South Carolina and Cleveland and Union counties in North Carolina.

The purpose for the exercise was to assess the level of State and local preparedness in responding to an incident at the Catawba Nuclear Station. It was conducted in accordance with Federal Emergency Management Agency policies and guidance concerning the exercise of State and local radiological emergency response plans and procedures. The previous federally evaluated exercise at this site was conducted on March 18, 2014. The qualifying emergency preparedness exercise was conducted on February 15-16, 1984.

Officials and representatives from participating agencies and organizations demonstrated knowledge of their emergency response plans and procedures and successfully implemented them during the exercise. Highlights of the exercise included York County's implementation of a new computer tracking system, the use of a new joint information system, and the coordination between multiple State and county government agencies.

The Federal Emergency Management Agency evaluation team did not identify a level 1 finding, however three level 2 findings were identified in South Carolina. Two of the level 2 findings concerned the actions taken in host counties to monitor evacuees. The first finding concerned insufficient monitoring instruments to monitor the expected number of evacuees in approximately 12 hours. This finding was resolved by the State of South Carolina and FEMA will continue to work with South Carolina to insure plans and equipment are kept up-to-date. The second finding dealt with Department of Health and Environmental Control personnel not using proper dosimetry or a tracking mechanism for the issuance of potassium iodide. The third finding dealt with personnel being unfamiliar with the procedures and use of the instruments by emergency workers in Union County, South Carolina. Federal Emergency Management Agency personnel will work with the State of South Carolina and the involved counties to resolve the findings in accordance with the approved correction schedule.

The Federal Emergency Management Agency wishes to acknowledge the efforts of the many individuals who participated in the exercise and made it a success. The professionalism and teamwork of the participants was evident throughout all phases of the exercise.

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Section 1: Exercise Overview

1.1 Exercise Details

Exercise Name
2016 Catawba Nuclear Station, Plume-Exposure-Pathway Federal Emergency Management Agency Radiological Emergency Preparedness Program Evaluated Exercise

Type of Exercise
Full-Scale Exercise

Exercise Date
April 5, 2016

Exercise Off-Scenario/Out-of-Sequence Dates
February 17 and weeks of March 21 and 28, 2016

Locations
See the extent-of-play agreements in Appendix C for exercise locations.

Sponsors
South Carolina Emergency Management Division
2779 Fish Hatchery Road
Columbia, South Carolina 29172

North Carolina Division of Emergency Management
1636 Gold Star Drive
Raleigh, North Carolina, 27607

Duke Energy
526 South Church Street
Charlotte, North Carolina 28202

Program
Department of Homeland Security, Federal Emergency Management Agency Radiological Emergency Preparedness Program

Mission
Response

Scenario Type
Plume-Exposure-Pathway Full-Participation REP Exercise

1.2 Exercise Planning Team Leadership

Larry Robertson
Central Section Chief
FEMA Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia 30341
770/220-5466
larry.robertson@fema.dhs.gov

Kevin Keyes
North Section Chief
FEMA Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia 30341
770/220-5378
kevin.keyes@fema.dhs.gov

Joe Harworth
Emergency Management Specialist
FEMA Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia 30341
770/220-5464
joseph.harworth@fema.dhs.gov

Michael Dolder
Emergency Management Specialist
FEMA Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia 30341
770/220-5346
michael.dolder@fema.dhs.gov

Nathan Nienhius
FNF Program Manager
South Carolina Emergency Management Division
2779 Fish Hatchery Rd
West Columbia, South Carolina, 29172
803/737-8797
nnienhius@emd.sc.gov

James Young
REP Program Manager
North Carolina Emergency Management
1636 Gold Star Drive
Raleigh, North Carolina 27607
919/825-2295
james.young@ncdps.gov

Matthew Durden
FNF Coordinator
South Carolina Emergency Management Division
2779 Fish Hatchery Rd
West Columbia, South Carolina, 29172
803/737-8797
mdurden@emd.sc.gov

Mike Cook
Western Branch Office Manager
North Carolina Emergency Management
3305-15 16th Street
Conover, NC 28613
828-466-5555
mike.cook@ncdps.gov

1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the 2016 Catawba Nuclear Station exercise.

State Jurisdictions:
South Carolina
Office of the Adjutant General, Emergency Management Division

Department of Health & Environmental Control
Department of Public Safety – South Carolina Law Enforcement Division
South Carolina Highway Patrol
Department of Natural Resources
Department of Social Services
Department of Transportation

North Carolina
Department of Public Safety, Division of Emergency Management
Department of Public Safety, State Highway Patrol
Department of Health and Human Services
Department of Transportation
Department of Agriculture and Consumer Services
North Carolina Wildlife Resources Commission

Risk Jurisdictions:
York County Emergency Management
York County Sheriff's Office
York County Schools
Bethesda Volunteer Fire Department
Sharon Volunteer Fire Department
Charlotte-Mecklenburg Emergency Management
Gaston County Emergency Management

Support Jurisdictions
Cherokee County, SC
Chester County, SC
Lancaster County, SC
Union County, SC
Union County, NC

Private Organizations:
American Red Cross
Salvation Army

Section 2: Exercise Design Summary

2.1 Exercise Purpose and Design

The Federal Emergency Management Agency administers the Radiological Emergency Preparedness Program pursuant to the regulations found in Title 44 Code of Federal Regulation parts 350, 351, and 352. Title 44 Code of Federal Regulation part 350 codifies sixteen planning standards that form the basis for radiological emergency response planning for the licensee and for State, tribal, and local governments impacted by the emergency planning zones established for each nuclear power plant site in the United States. Title 44 Code of Federal Regulation Part 350 sets forth the mechanisms for the formal review and approval of State, tribal, and local government radiological emergency response plans and procedures by the Federal Emergency Management Agency. One of the Radiological Emergency Preparedness Program cornerstones established by these regulations is the biennial exercise of offsite response capabilities. During these exercises, affected State, tribal, and local governments demonstrate their abilities to implement their plans and procedures to protect the health and safety of the public in the event of a radiological emergency at the nuclear plant.

The results of this exercise together with review of the radiological emergency response plans and procedures and verification of the periodic requirements set forth in *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980 (*NUREG-0654/FEMA-REP-1) through the annual letter of certification and staff assistance visits enables the Federal Emergency Management Agency to provide a statement with the transmission of this final after action report to the United States Nuclear Regulatory Commission that the affected State, tribal, and local plans and preparedness are (1) adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency; and (2) capable of being implemented.

Formal submission of the radiological emergency response plans for the Catawba Nuclear Station to the Federal Emergency Management Agency Region IV by the State of South Carolina and involved local jurisdictions occurred on August 31, 1984, and by the State of North Carolina and involved local jurisdictions on September 5, 1984. Formal approval of the South Carolina and North Carolina radiological emergency response plans was granted by the Federal Emergency Management Agency on October 8, 1985, under Title 44 Code of Federal Regulation Part 350.

2.2 FEMA Exercise Objectives and Core Capabilities

Core-capabilities-based planning allows for exercise planning teams to develop exercise objectives and observe exercise outcomes through a framework of specific action items. Using the Homeland Security Exercise and Evaluation Program methodology, the exercise objectives meet the Radiological Emergency Preparedness Program requirements and encompass the Radiological Emergency Preparedness Program emergency preparedness evaluation areas. The critical tasks to be demonstrated were negotiated with the States of South Carolina and North Carolina and the participating counties. The core capabilities scheduled for demonstration during this exercise were operational coordination, public information and warning, environmental response/health and safety, on-scene security and protection, critical transportation, and mass care. These core capabilities, when successfully demonstrated, meet the exercise objectives. The objectives for this exercise were as follows:

Objective 1: Demonstrate the ability to provide emergency operations center management including direction and control through the States' and counties' multi-agency coordination center system.

Objective 2: Demonstrate the ability to provide protective action decision making for State and county emergency workers and the public through exercise play and discussions of plans and procedures.

Objective 3: Demonstrate the ability to implement protective actions for State and county emergency workers and public through exercise play and discussion of plans and procedures.

Objective 4: Demonstrate the ability to perform plume-phase field measurements and analysis utilizing State field teams through exercise play and discussion of plans and procedures.

Objective 5: Demonstrate the ability to activate the prompt alert and notification system utilizing the prompt notification system and emergency alert system through exercise play.

Objective 6: Demonstrate the effectiveness of plans, policies, and procedures in the joint information center for joint (public and private sectors) emergency information communications.

2.3 Scenario Summary

The following is a brief summary of the scenario developed by the utility to drive exercise play. Actual exercise times and events may have differed from those shown below.

0817 Shift Manager receives report of structural damage on Standby Shutdown Facility caused by truck backing into building. Conditions met for Alert 4.7.A.1-3.

0832 Alert must be declared by this time.

0847 Off-site agencies must be notified of Alert by this time.

0947 Emergency Response Facilities must be operational/activated by this time.

1012 Containment radiation monitors increase to >43 Roentgen/hour which results in loss of Fuel barrier and conditions being met for Site Area Emergency 4.1.S.1.

1027 Site Area Emergency must be declared by this time.

1042 Off-site agencies must be notified of Site Area Emergency by this time.

1148 Containment penetration failure resulting in rapid lowering of containment pressure and release through stack and an increase on Vent stack radiation monitors. Conditions met for General Emergency 4.1.G.1 due to loss of all 3 fission product barriers.

1203 General Emergency must be declared by this time.

1218 Off-site agencies must be notified of General Emergency and Protective Action Recommendation by this time.

1400 Exercise terminated.

Section 3: Analysis of Capabilities

3.1 Exercise Evaluation and Results

This section contains the results and findings of the evaluation of all jurisdictions and functional entities that participated in the April 5, 2016 plume-exposure-pathway exercise and out-of-sequence interviews and demonstrations of February 17 and weeks of March 21 and 28, 2016.

Each jurisdiction and functional entity was evaluated based on the demonstration of core capabilities and the underlying criteria as delineated in the Federal Emergency Management Agency Radiological Emergency Preparedness Program Manual dated July 2015.

3.2 Jurisdictional Summary Results of Exercise Evaluation

3.2.1 South Carolina Jurisdictions

3.2.1.1 State of South Carolina

Operational Coordination Capability Summary:

South Carolina Emergency Management Division personnel and various supporting State Emergency Response Team members successfully demonstrated the capability to establish and maintain a unified and coordinated operational structure and process while integrating all critical stakeholders. The State Warning Point supervisor efficiently mobilized staff using an online emergency notification system. The State Emergency Operations Center had sufficient communication capabilities, equipment, and supplies to support emergency operations. The chief of operations kept staff aware of ongoing incident status through frequent staff briefings. Appropriate protective action decisions were made for emergency workers and the public in a timely manner with concurrence from emergency support function leads and subject matter experts. The State Emergency Response Team leaders used a dedicated telephone conference call line to successfully coordinate status and protective actions with North Carolina and the risk counties. The South Carolina Highway Patrol managed and maintained appropriate traffic and access control during the emergency. When presented with theoretical traffic impediments, South Carolina Highway Patrol personnel promptly identified and resolved the impediments.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 3.a.1, 3.d.1, 3.d.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

Public Information and Warning Capability Summary:

The South Carolina State Emergency Operations Center public information staff successfully demonstrated primary alert and notification of the public and provided accurate emergency information and instructions to the public and the news media in a timely manner. Two different alert and notification sequences were conducted, which included a total of three messages. Emergency Alert System messages were accurately prepared in a timely manner. The initial emergency message (simulated 'test message') was transmitted to the National Weather Service by email and confirmed by telephone.

Public information staff used pre-scripted templates for timely production of news releases. Information coordination, final version authorization, and distribution procedures were closely followed by the public information staff. Eight South Carolina Emergency Management Division news releases were produced and distributed during the exercise.

For this capability the following Radiological Emergency Preparedness criteria were met: 5.a.1, 5.b.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

Environmental Response/Health and Safety Capability Summary:

South Carolina Department of Health and Environmental Control personnel successfully demonstrated the ability to assess radiological and plant conditions and to provide suitable recommendations to decision makers in response to a simulated radiological

incident at the Catawba Nuclear Station.

Personnel were pre-positioned near their assigned locations in accordance with the extent-of-play agreement and responded promptly when notified of the emergency, staffing two field teams, the mobile operations center, the Health and Medical Services Emergency Support Function, and the Hazardous Materials Emergency Support Function at the State Emergency Operations Center. The emergency response coordinator provided direction to the Hazardous Materials Emergency Support Function team members, instructing them to gather the information necessary to understand changing plant conditions and to assess the radiological release. Personnel performed dose projection calculations and briefed State and county decision makers, presenting protective action recommendations and the reasoning for those recommendations. Personnel at all locations had sufficient equipment, communications, and supplies to support emergency operations.

Mobile operations center staff managed field teams to effectively locate the radiological plume and to take appropriate field measurements. Except as noted in the finding below, the operations section chief and site safety officer issued appropriate dosimetry and potassium iodide to personnel and briefed them on the management of their radiological exposures. Two field teams properly inventoried, prepared, and checked all equipment and survey instruments. Team members described the proper use of dosimetry, administrative dose limits, and use of potassium iodide. Each team demonstrated proper monitoring, air sampling, and contamination control techniques.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.d.1, 2.a.1, 2.b.1, 2.b.2, 4.a.2, 4.a.3.

a. Level 1 Finding: None

b. Level 2 Finding: 1.e.1, 3.a.1

Issue No.: 12-16-1.e.1-L.2-01

Condition: Sufficient radiological monitoring equipment was not available in three of the four host counties to monitor 20% of the expected evacuee population in 12 hours at reception centers for the Catawba Nuclear Station. The State plan states that portal monitors and other monitoring equipment would be transported to assist the counties. However, the number of monitors available would not alleviate this shortfall.

Possible cause(s): Inadequate planning for population growth.

Reference(s):

1. "*Contamination Monitoring Standard for a Portal Monitor Used for Radiological Emergency Response*", Washington D.C., March 1995 (FEMA-REP-21).

2. "Contamination Monitoring Guidance for Portable Instruments", Washington D.C., October, 2002 (FEMA-REP-22).

3. *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980 (*NUREG-0654/FEMA-REP-1, Rev. 1), J.12.

Effect(s): Due to the lack of sufficient monitoring equipment, emergency workers would not be able to survey evacuees in a timely or orderly process. This could result in evacuees: creating traffic jams entering the reception center, avoiding the reception centers altogether, and potentially spreading contamination. Not being monitored for contamination could lead to potential detrimental health effects for evacuees not being identified, or evacuees going to counties or hospitals without the capability to monitor for contamination.

Currently the four host counties each have one portal monitor. In accordance with the South Carolina State dosimetry re-distribution plan, additional monitoring equipment would be transported from non-affected counties.

Current population estimates for the zones evacuating to the host counties are:

Chester - 67,979, 20%= 13,600
Lancaster – 17453, 20%=3600
Union – 18,309, 20% = 3700

Chester would need to process 19/min.
Lancaster would need to process 5/min
Union would need to process 5/min

Assuming that 2-3 evacuees could be processed through a portal monitor each minute and using these times the counties would need as a minimum the following number of portal monitors to meet the 12-hour requirement:

Chester – 9
Lancaster – 3
Union – 3

This means that South Carolina would have to find an additional 11 portal monitors and have them delivered to the counties within 2-3 hours along with additional personnel to

set up and support these monitors. Based on each of the other counties having one portal monitor there could be a serious impact on the host counties' ability to monitor evacuees (only 12 portal monitors total in the other counties).

In discussions with Chester and Union County officials, they stated that they would need to open additional facilities to handle the number of potential evacuees. They said that they would need 16 portal monitors for Chester County and at least 4 portal monitors for Union County.

Recommendation(s):

1. Develop procedures/MOUs to find alternate locations outside of State resources to supply emergency equipment in emergency situations and within a short time frame.

2. Develop plan to acquire additional monitoring equipment, and have the counties train additional support personnel. Portal Monitors needed per county personnel estimates are (does not account for additional equipment in case of failures):

   Chester County 16
   Lancaster County 3
   Union County 4

Resolution: South Carolina Emergency Management Division worked with each of the counties to determine new, updated information on personnel and equipment shortfalls. The fixed nuclear facilities have committed to purchasing new portal monitors across the state. South Carolina Electric and Gas has already purchased 4 new portal monitors for the VC Summer region. Each county has at least 2, Fairfield County has 3 monitors. Duke Energy has committed to purchasing 3 new portal monitors for the Robinson region, 2 monitors for the Oconee region, and 12 monitors for the Catawba region. That is an additional 21 portal monitors to go with the 34 we already have in the state (including 2 at the State). South Carolina Emergency Management Division staff stated that once they gathered all the data from the counties, they would revise the Dosimetry Redistribution Plan accordingly. Current thought is to allow for only half of any county's equipment to be redistributed. Additionally, the plan and associated MOUs will include personnel shortfalls. The South Carolina Emergency Management Division staff plan to have the plan changes completed by the end of the year. They plan to demonstrate the new redistribution plan during future exercises starting in 2017. They will review and analyze evacuation time estimate studies annually to identify population changes and revise the plan accordingly or request additional equipment if needed. Lastly, they will work closely with the Department of Health and Environmental Control and the counties to identify ways to improve the efficiency of county monitoring processes.

Level 2 Finding: 12-16-3.a.1-L.2-02

Condition: Radiation dose tracking for emergency workers at the South Carolina mobile operations center was not effectively managed. Group dosimetry was used, however individuals were not issued individual permanent record dosimeters. Field team relays were not issued potassium iodide prior to deploying into the field. There was no programmatic method to track emergency worker ingestion of potassium iodide.

Possible Causes: Procedures did not specifically address issuance of dosimetry and dose tracking for mobile operations center personnel. Concerns related to potassium iodide tracking may be an oversight in record keeping procedures.

References:

1. State of South Carolina, Standard Technical Radiological Operating Procedures, SOP 5.3, Administration of Prophylactic – Thyroid-Blocking Agents Potassium Iodide (KI), March 2015.

2. State of South Carolina, Standard Technical Radiological Operating Procedures, SOP 6.11, Exposure Control Officer/Site Safety Officer, March 2015.

3. *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980 (*NUREG-0654/FEMA REP-1, Rev 1); J.10.e, K.3.a.

Effect: Permanent record dosimeters are the mechanism used for tracking an individual's exposure to radiation and providing a legal record. Appropriate radiation exposure control tracking methods must be established regardless of whether emergency workers are monitored by individual dosimetry or group dosimetry. Otherwise, inadequate exposure tracking for individuals could occur. Additionally, record keeping for potassium iodide ingestion (by individual) is needed by assessment personnel when they make the final determination of radiation worker doses. If detailed records are not maintained, an inaccurate thyroid dose may be assigned to an individual.

Recommendations:

1. Modify State of South Carolina, Standard Technical Radiological Operating Procedures to ensure that every Nuclear Emergency Response Team emergency worker in the 10-mile emergency planning zone is issued a permanent-record dosimeter; a group direct-reading dosimeter may be acceptable with appropriate exposure monitoring.

2. Modify procedures to ensure issuance of potassium iodide to all relay team members and emergency workers in the mobile operations center (if the mobile operations center is inside the 10-mile emergency planning zone).

3. Develop a method for documenting and tracking the date and time of emergency worker potassium iodide ingestion.

Schedule of Corrective Action:

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

On-Scene Security and Protection Capability Summary:

South Carolina Highway Patrol officers successfully demonstrated, through interview, the ability to ensure a safe and secure environment through law enforcement and related security and protection operations in response to a radiological incident at Catawba Nuclear Station.

By explaining the planning, protocol, and procedures for maintaining traffic control points and taking protective actions, the South Carolina Highway Patrol officers demonstrated their knowledge and ability to perform the required task. County law enforcement personnel would issue packets with the most up to date mapping and road closure information during an emergency. Prior to reporting to their post, the officers will pick up their kits with dosimeters, potassium iodide, and other emergency worker protective equipment from the York County Multi-Agency Coordination Center. The officers would receive their radiation briefing on dosimetry, potassium iodide, and the protective actions to ensure understanding of dose limits from the radiation safety officer. The officers would be in direct contact with their supervisors and other law enforcement personnel at the York County Multi-Agency Coordination Center.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.e.1, 3.a.1, 3.d.1, 3.d.2.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

3.2.1.2 York County

Operational Coordination Capability Summary:

York County Office of Emergency Management personnel successfully established and maintained a unified and coordinated operational structure while integrating all stakeholders to support their mission during the exercise. Although the utility supplied notification system initially failed, county personnel worked around the problem until it was resolved. The Multi-Agency Coordination Center was well designed and equipped to support extended operations.

The emergency management director demonstrated excellent direction and control throughout the exercise. The York County Office of Emergency Management initiated a new method to provide direction and control for the county during an emergency. The emergency management director would maintain a presence in the Situation Room while the operations chief would provide direction in the Multi-Agency Coordination Center. When protective action decisions were made the director would meet with the operations chief and discuss actions to be taken. The operations chief would then return to the coordination center and assign actions to the appropriate county agency or request assistance if necessary. The director would ensure coordination was conducted with the York County manager and with other counties and states. South Carolina Highway Patrol officers were prepared to implement traffic control and were knowledgeable of how to handle impediments.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

Public Information and Warning Capability Summary:

The York County Warning Point coordinator successfully demonstrated the ability to activate the prompt alert and notification system in response to a radiological emergency at the Catawba Nuclear Station. Through coordination on an internet protocol-based coordination and conferencing system, the warning point coordinator promptly demonstrated the process of arming and activating the siren system in under three

seconds in a joint effort with the other risk counties and the States of South Carolina and North Carolina.

Emergency management staff successfully demonstrated and discussed the process of route alerting in the event of single or multiple siren failures. Route alerting plans were thorough and complete.

The public information officer and staff successfully demonstrated the ability to manage and provide accurate emergency information for public dissemination and rumor control in support of a radiological emergency at the Catawba Nuclear Station. The public information officer and staff continuously informed the York County representatives at the two joint information centers of current critical emergency response actions and decisions for the county through the use of an email distribution list and cell phone communication. A thorough log of key actions was kept using an automated log and information system for emergency information. Eight news releases and three emergency alert system messages were coordinated and vetted by the public information staff and provided for the director's approval in a timely manner. Rumor control staff for the county utilized an automated board to document and reference all inquiries received by the staff for future use.

For this capability the following Radiological Emergency Preparedness criteria were met: 5.a.1, 5.a.3, 5.b.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

Critical Transportation Capability Summary:

Administrative and staff personnel and bus drivers from the four York County School Districts; Fort Mill, Rock Hill, York School, and Clover were interviewed to determine their capability to implement protective actions for school staff and children. Comprehensive plans and procedures to implement protective action decisions to ensure the health and safety of children and staff were in place and all staff received training on an annual basis. The staff had effective procedures in place to track the students when relocated to the pickup points or to the reception center in another county. The districts had sufficient transportation resources available to ensure student and staff relocations would be accomplished promptly. Students with functional and access needs were

effectively addressed in the emergency response plans.

The personnel explained how transportation for simulated relocations of endangered schools could be completed in a coordinated and orderly manner. In addition to school relocations, other protective actions such as cancelation, early dismissal, and shelter in place were discussed as well as parent and general public messaging of the above actions. Multiple communication methods were available for communicating between the district offices, schools, busses, and the county Multi-Agency Coordination Center.

For this capability the following Radiological Emergency Preparedness criterion was met: 3.c.2.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

Environmental Response/Health and Safety Capability Summary:

Lesslie Volunteer Fire Department

Lesslie Volunteer Fire Department personnel demonstrated the ability to perform radiological monitoring and decontamination of emergency workers and their equipment. Displays, monitoring instruments, dosimetry, potassium iodide, and other supplies were sufficient to support emergency operations. Radiological survey instruments were available and within calibration parameters, and were properly placed into service. A diagram of the decontamination flow and posters with plans and processes were posted in appropriate locations. Supplies for decontaminating emergency workers were sufficient and located throughout the area.

Supervisors gave good briefings concerning safety, exposure and contamination limits, protective clothing requirements, and ensured all personnel were issued dosimetry and potassium iodide. Scribes at each location were responsible for tracking dosimetry readings, potassium iodide ingestion and survey results.

The vehicle area was large enough to conduct surveys and decontamination activities and parking areas were sufficient to hold contaminated vehicles. The personnel decontamination tent could process males and females and male and females were available to assist in decontamination and monitoring activities. Procedures were written

on large posters placed at the vehicle and personnel decontamination areas to assist workers. Supervisors actively participated and reminded workers of proper procedures and processes.

Bethany Volunteer Fire Department

Bethany Volunteer Fire Department personnel demonstrated the ability to perform radiological monitoring and decontamination of emergency workers and their equipment. Displays, monitoring instruments, dosimetry, potassium iodide, and other supplies were sufficient to support emergency operations. Radiological survey instruments were available and within calibration parameters, and were properly placed into service. A diagram of the decontamination flow and posters with plans and processes were posted in appropriate locations. Supplies for decontaminating emergency workers were sufficient and located throughout the area.

Supervisors gave good briefings concerning safety, exposure and contamination limits, protective clothing requirements, and ensured all personnel were issued dosimetry and potassium iodide. Scribes at each location were responsible for tracking dosimetry readings, potassium iodide ingestion and survey results.

The vehicle area was large enough to conduct surveys and decontamination activities and parking areas were sufficient to hold contaminated vehicles. The personnel decontamination tent could process males and females and male and females were available to assist in decontamination and monitoring activities. Procedures were written on large posters placed at the vehicle and personnel decontamination areas to assist workers. Supervisors actively participated and reminded workers of proper procedures and processes.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.e.1, 3.a.1, 6.b.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

3.2.1.3 Cherokee County

Environmental Response/Health and Safety Capability Summary:

Members of the Cherokee County Emergency Management, Gaffney Fire and Rescue and Gaffney Fire Department successfully demonstrated the ability to perform radiological monitoring and decontamination of evacuees at the Gaffney High School in Gaffney, South Carolina. Members of the Gaffney Fire and Rescue unit were called out on a "real world" incident and portions of their participation were discussed or simulated. The facility was well laid out, minimizing the chance for cross contamination. Reception center workers simulated wearing appropriate protective clothing and dosimetry, were familiar with dosimeter reading and recording requirements, and were knowledgeable of administrative dose limits. Workers set up and used a portal monitor and handheld instruments to detect radiological contamination. They were knowledgeable of contamination action levels and decontamination procedures, and provided information and instructions to evacuees. The command structure at the facility was well defined. All workers were knowledgeable of their procedures and referred to those procedures frequently. Female and male decontamination teams displayed excellent knowledge of monitoring techniques and spot decontamination methods.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 6.a.1.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

Mass Care Capability Summary:

The American Red Cross, Piedmont Chapter supported by; the Cherokee County Department of Social Services, Salvation Army and Department of Health and Environmental Control personnel, successfully demonstrated the ability to meet the congregate care needs of evacuees during a radiological incident at the Catawba Nuclear Station. All personnel worked together as a team and described their shared responsibilities in the establishment and management of the Gaffney High School congregate care center.

The Shelter Manager had documentation certifying that the shelter had been surveyed and the facility had a 2,490 person capacity.

It was evident that the American Red Cross, as lead, and Department of Social Services had coordinated on establishing and managing a safe shelter. Personnel participating in the demonstration were very knowledgeable and well-versed in their roles and responsibilities. The lead American Red Cross Shelter Manager described the availability of services that could assist evacuees. Department of Health and Environmental Control personnel were available with simulated potassium iodide for issuance to evacuees. It was stated that limited medical and mental health support would be on site and evacuees would be provided assistance in registering in the American Red Cross "Safe and Well" website. Food and clothing would be provided by the American Red Cross and the Salvation Army.

Service animals would be allowed in the shelter and the needs of other pets would be addressed by local animal shelters. There were also agreements with neighboring counties to house pets.

For this capability the following REP criterion was met: 1.e.1, 3.b.1, 6.c.1.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

3.2.1.4 Chester County

Environmental Response/Health and Safety Capability Summary:

Members of the Chester County Emergency Management Agency, Chester County Sheriff's Office, Chester County Emergency Medical Services and Rescue Squad, Chester County Department of Social Services, Chester County Department of Environmental Control, and Chester County Hazardous Material and Volunteer Fire Departments successfully demonstrated the ability to perform radiological monitoring and decontamination of evacuees at the Lewisville High School in Richburg, South Carolina. The facility was well laid out, minimizing the chance for cross contamination. Reception center workers wore appropriate protective clothing and dosimetry, were familiar with dosimeter reading and recording requirements, and were knowledgeable of administrative dose limits. All vehicles entering the school property were directed to

drive through a spray down area. Workers properly set up and used a portal monitor and handheld instruments to detect radiological contamination. They were knowledgeable of contamination action levels and decontamination procedures, and provided information and instructions to evacuees. The command structure at the facility was well defined, and designated team leaders provided clear instructions to their teams. All workers were knowledgeable of their procedures and referred to those procedures frequently. Female and male decontamination teams displayed excellent knowledge of monitoring techniques and spot decontamination methods.

Due to the number of evacuees that could possibly evacuate to this county additional monitoring equipment would be necessary to monitor the evacuees within the required 12 hours. This additional need could exceed the state's inventory. This discrepancy was documented in an issue under the state of South Carolina's Environmental Response/Health and Safety Capability Summary.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.e.1, 3.a.1, 6.a.1.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

Mass Care Capability Summary:

Members of the Upper Palmetto American Red Cross Chapter, Chester County Department of Health and Environmental Control, and Social Services successfully demonstrated the capability to provide life-sustaining services to evacuees. There were sufficient resources available to provide services and accommodations for evacuees arriving at the Lewisville High School reception and congregate care center.

The American Red Cross and Department of Social Services personnel competently worked together as a team and demonstrated shared responsibilities in meeting the needs of the shelter residents. The participating volunteers and county staff were well-versed in the emergency plans and procedures. They ensured that support addressed not only evacuee needs for food and shelter, but also medical and mental health needs. All personnel were professional, knowledgeable and well trained.

For this capability the following REP criterion was met: 1.e.1, 3.b.1, 6.c.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

3.2.1.5 Lancaster County

Environmental Response/Health and Safety Capability Summary:

Members of the Lancaster County Emergency Management, Lancaster City Police Department, Lancaster County Department of Social Services, Lancaster County Department of Environmental Controls, and Lancaster County and City Fire Departments successfully demonstrated the ability to perform radiological monitoring and decontamination of evacuees at the Lancaster High School in Lancaster, South Carolina. The facility was well laid out, minimizing the chance for cross contamination. Reception center workers wore appropriate protective clothing and dosimetry, were familiar with dosimeter reading and recording requirements, and were knowledgeable of administrative dose limits. All vehicles entering the school property were directed to drive through a spray down area. Workers properly set up and used handheld instruments to detect radiological contamination. They were knowledgeable of contamination action levels and decontamination procedures, and provided information and instructions to evacuees. The command structure at the facility was well defined, and designated team leaders provided clear instructions to their teams. All workers were knowledgeable of their procedures and referred to those procedures frequently. Female and male decontamination teams displayed excellent knowledge of monitoring techniques and spot decontamination methods.

Due to the number of evacuees that could possibly evacuate to this county additional monitoring equipment would be necessary. This additional need could exceed the state's inventory. This discrepancy was documented in an issue under the state of South Carolina's Environmental Response/Health and Safety Capability Summary.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.e.1, 3.a.1, 6.a.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **NOT DEMONSTRATED:** NONE

d. **PRIOR Level 2 Findings – RESOLVED:** NONE

e. **PRIOR Level 2 Findings - UNRESOLVED:** NONE

Mass Care Capability Summary:

The Lancaster County Department of Social Services, supported by the Department of Health and Environmental Controls, successfully demonstrated the capability to provide services and accommodations for evacuees at the Lancaster High School congregate care center. The agencies had procedures in place to ensure evacuees were monitored for contamination and, if required, successfully decontaminated prior to entry into the facility. The staff was professional and thorough.

There was only one member of the American Red Cross that participated in the exercise and he had limited knowledge of shelter operations. However, he demonstrated that he knew where to obtain some information by contacting full time American Red Cross employees to determine when the shelter had been surveyed and the shelter capacity.

For this capability the following Radiological Emergency Preparedness criterion was met: 1.e.1, 3.b.1, 6.c.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

3.2.1.6 Union County, SC

Environmental Response/Health and Safety Capability Summary:

Members of the Union County Fire and Rescue Unit, Lockhart and Kelly Kelton Volunteer Fire Departments, Piedmont Chapter of American Red Cross, Department of Social Services, and the Union County Amateur Radio Club demonstrated radiological monitoring and decontamination of evacuees at the First Baptist Church Family Life Center, 126 Armory Road, Union, South Carolina, on March 30, 2016. This was the first time that this facility was demonstrated and personnel worked on the flow and layout as they demonstrated their actions. Reception center workers simulated wearing appropriate

protective clothing and dosimetry. Not all workers were familiar with dosimeter reading and recording requirements, or administrative dose limits. All vehicles entering the school property were directed to drive through a spray down area. Workers set up and used a portal monitor and handheld instruments to detect radiological contamination. The portal workers were knowledgeable of contamination action levels and decontamination procedures, and provided information and instructions to evacuees. There was a lack of any overall command structure at the facility, which lead to some confusion concerning actions and flow. Female and male decontamination teams were unsure of; monitoring techniques, survey instrument operations, performing source checks, dose limits, and decontamination methods.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.b.1, 1.d.1, 1.e.1, and 3.a.1.

a. Level 1 Finding: None

b. Level 2 Finding: 6.a.1

Issue No.: 12-16-6.a.1-L.2-03

Condition: Emergency workers at the Union County reception center did not successfully demonstrate the ability to survey and decontaminate evacuees. Workers in several areas of the reception center were not familiar with or proficient in the operation of handheld survey instruments. They did not use proper survey techniques and did not follow their plans and procedures regarding decontamination processes. Workers were often unsure of general reception center operations, including evacuee flow paths, vehicle processing, administrative dose limits, and communication protocols.

Possible cause(s): Inadequate or insufficient training for reception center workers.

Reference(s):

1. *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980 (*NUREG-0654/FEMA-REP-1, Rev. 1), J.12.

2. Radiological Emergency Preparedness Program Manual, Part III: Demonstration Guidance, Support Operations and Facilities, 6.a.1 "The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees."

Effect(s): Failure to follow plans and procedures or to use proper survey techniques could result in the failure to adequately decontaminate evacuees or in cross contamination of personnel, equipment, and facilities.

Recommendation(s):

1. Conduct more hands-on training with reception center staff.

2. Conduct training at the reception center with all stations set up. Training should include processing multiple simulated evacuees in as realistic a manner as possible.

Schedule of Corrective Action:

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

Mass Care Capability Summary:

The American Red Cross Piedmont Chapter of South Carolina supported by the Union County Department of Social Services personnel successfully demonstrated the ability of county staff and American Red Cross volunteers to meet the congregate care needs of evacuees during a radiological incident at the Catawba Nuclear Station. The county employees and American Red Cross volunteers worked together as a team and described their shared responsibilities in the establishment and management of the shelter.

This was the first time the facility had been used as a shelter and a shelter survey had recently been conducted and the facility has a capacity of 330 spaces it was evident that the American Red Cross, as lead, and Department of Social Services had coordinated on establishing and managing a safe shelter. Personnel participating in the demonstration were very knowledgeable and well-versed in their roles and responsibilities. The lead American Red Cross Shelter Manager described the availability of services that could assist evacuees. It was stated that limited medical and mental health support would be on site and evacuees would be provided assistance in registration in the American Red Cross "Safe and Well" website. Food and clothing would be provided by the American Red Cross.

Service animals would be allowed in the shelter and the needs of other pets would be addressed by local animal shelters.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.e.1, 3.b.1, and 6.c.1.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

3.2.2 North Carolina Jurisdictions

3.2.2.1 State of North Carolina

Operational Coordination Capability Summary:

The State emergency response team successfully demonstrated their ability to establish and maintain a unified and coordinated operational structure to demonstrate State response to a simulated radiological emergency at the Catawba Nuclear Station. Activation and staffing of the State Emergency Operations Center was accomplished in accordance with published plans and exercise agreements. The State Emergency Operations Center was a modern facility which was housed within the State Joint Forces Headquarters. The site was secure with multiple levels of security and was well equipped to support operations and had redundant communications systems.

The State emergency response team members were organized using a modified incident command structure for which the North Carolina Emergency Management deputy director served as the leader. The State emergency response team was comprised of representatives from multiple State agencies, volunteer organizations, and Duke Energy personnel. Additionally, a South Carolina Emergency Management liaison provided continuity and situational awareness to the command staff of South Carolina's activities. After the initial response, Charlotte-Mecklenburg County requested that the State assume direction and control of the emergency response. The State emergency response team leader assumed direction and control during the escalation to a Site Area Emergency.

Following the declaration of the General Emergency, the Duke Energy's protective action recommendations were discussed and modified after consultation with input from the Radiation Protection Section chief. After a thorough discussion of the protective action recommendation a protective action decision was made during a coordinated conference call with the State of South Carolina, York County, South Carolina and Gaston and Charlotte-Mecklenburg Counties, North Carolina. Throughout the exercise the State Emergency Response Team leader and his staff were proactive and implemented their procedures without delay.

The Regional Coordination Center West in Conover provided resource coordination in support of response efforts.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 3.a.1, 3.d.1, 3.d.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

Public Information and Warning Capability Summary:

The North Carolina public information staff and State Warning Point communication officers at the State Emergency Operations Center successfully demonstrated the ability to conduct emergency public information and warning in response to a simulated radiological emergency at the Catawba Nuclear Station. The deputy public information officer and staff worked with the State's lead public information officer at the Duke Energy Joint Information Center to process and disseminate news releases.

The simulated broadcast of three Emergency Alert System messages was accomplished by using the encoder located in the warning point. The encoder allowed the State to send messages to the local primary radio station in the affected area for broadcast to the public. Management of the rumor control/public inquiry line was effectively demonstrated and resulted in factual information provided and erroneous information squelched.

Public information and the warning point personnel carried out their duties in a professional manner. All activities were consistent with current plans and procedures.

For this capability the following Radiological Emergency Preparedness criteria were met: 5.a.1, 5.b.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

Environmental Response/Health and Safety Capability Summary:

North Carolina Department of Health and Human Services, Division of Health Service Regulation, Radiation Protection Section personnel successfully demonstrated the ability to assess radiological and plant conditions and to provide appropriate recommendations to decision makers in response to a simulated radiological incident at the Catawba Nuclear Station.

Personnel responded to the State Emergency Operations Center when notified of the emergency. The dose assessment leader and assistant calculated projected doses at various distances downwind from the plant based on release data supplied by the utility. The team also monitored plant data and parameters from the utility's plant data system and confirmed radiological release pathway information with utility personnel. The Radiation Protection Section chief briefed State and county decision makers, presenting protective action recommendations and the reasoning for those recommendations.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2, 4.a.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

3.2.2.2 Western Branch Office

Operational Coordination Core Capability Summary:

North Carolina Emergency Management personnel successfully demonstrated the ability to effectively activate, staff and manage the Western Branch Office in response to a simulated radiological incident at the Catawba Nuclear Station. Upon activation, the Western Branch Office served as the Regional Coordination Center for logistical needs in support of the risk counties Charlotte-Mecklenburg and Gaston, and the host counties of Cleveland and Union. The branch manager provided effective direction and control, using frequent briefings and information on plant conditions, emergency classification level changes, and response activities to keep his staff informed of the emergency. The manager directed the creation of an incident action plan for each operational period. Communication systems were redundant and functional. The center was well equipped with supplies to facilitate its role in the response.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

3.2.2.3 Charlotte-Mecklenburg County

Operational Coordination Capability Summary:

Charlotte-Mecklenburg County demonstrated their ability to respond to a radiological emergency at the Catawba Nuclear Station and protect the health and safety of the general public and responding emergency workers. The warning point at Charlotte Fire Department Station #1 received the initial notification of an emergency at Catawba Nuclear Station, and informed the key leadership of the Charlotte-Mecklenburg Emergency Management Office. After the director assessed the situation, he directed the emergency operations center to be activated. Coordination of protective actions with other jurisdictions was timely and effective.

The Policy Group leadership displayed concern for the safety and well-being of all citizens and county emergency workers. The emergency operations center staff was proactive and proceeded to implement required actions throughout the exercise. Periodic status reports maintained accurate situational awareness, and good communication among the staff helped complete actions rapidly.

Law enforcement officers were fully prepared to establish and maintain appropriate traffic and access control measures. They also coordinated and conducted waterway warning activities on Lake Wylie.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

Public Information and Warning Capability Summary:

The Charlotte-Mecklenburg Emergency Management Office public information staff demonstrated the ability to provide emergency instructions and information to the public. They communicated with their representatives at the Duke Energy Joint Information Center through multiple communication mediums on a frequent and coordinated basis. The Charlotte-Mecklenburg 311 representatives addressed 22 calls trending in the areas of terrorist actions, residents requesting general evacuation information, potassium iodide ingestion, and clarifications on social media postings. Frequent coordination with the Duke Energy Joint Information Center ensured accurate emergency information and instructions were disseminated to the public and the news media.

For this capability the following Radiological Emergency Preparedness criteria were met: 5.a.1, 5.a.3, 5.b.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

Critical Transportation Capability Summary:

The implementation of protective actions for schools were successfully implemented by the director of Safety for Charlotte-Mecklenburg Schools and the manager of Environmental Health and Safety for Charlotte-Mecklenburg Schools. All ten schools were simulated to be relocated to the University of North Carolina - Charlotte.

For this capability the following Radiological Emergency Preparedness criteria were met: 3.c.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

3.2.2.4 Gaston County

Operational Coordination Capability Summary:

The Gaston County Emergency Management Agency administrator demonstrated the capability to establish and maintain a unified and coordinated command structure in response to a simulated incident at the Catawba Nuclear Station. The administrator, with the authority and support of the interim assistant county manager and county attorney, who were present in the emergency operations center, provided the necessary direction and control to coordinate the process of protective action decision making with critical stakeholders.

Effective procedures and communication systems were employed to promptly alert, notify and mobilize key staff to activate the emergency operations center in a timely manner. There were sufficient equipment, supplies, potassium iodide, dosimetry and other equipment to support emergency operations. Procedures and resources were in place to establish and manage traffic and access control points.

The coordination and concurrence on the implementation of protective action decisions for the general public and emergency workers was seamless. The precautionary decisions to dismiss school early, shelter in place persons with functional/access needs and ingestion of potassium iodide ensured the safety of the general public and emergency workers.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

Public Information and Warning Capability Summary:

The Gaston County staff assigned to public information and warning responsibilities successfully demonstrated the capability to develop and deliver coordinated, prompt, reliable and actionable information to the public. The administrator, interim assistant county manager, and the county attorney participated in making protective action decisions. The administrator coordinated the timely activation of the sirens with the other risk counties, and the States.

Backup route alerting in case of siren failure was demonstrated by interview. The Gaston County sheriff's coordinator described the procedures and demonstrated good depth of knowledge on the process. He worked closely with the geographical information system coordinator to identify how many teams would be needed. The geographical information system technology allowed him to make decisions as to how many teams were needed in a given area to perform backup route alerting.

The Gaston County public information staff demonstrated the capability to receive, develop and disseminate accurate press releases to and from the Duke Energy Joint Information Center. Good coordination ensured that all press releases generated were reviewed for accuracy by the administrator before release. The public inquiry function was also staffed by the Gaston County public information staff who demonstrated competent tracking of phone calls and clarified rumors. No rumor trends were identified.

For this capability the following Radiological Emergency Preparedness criteria were met: 5.a.1, 5.a.3, 5.b.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

3.2.3 Joint Operations

3.2.3.1 Joint Information System/Centers

Public Information and Warning Capability Summary:

Personnel from the South Carolina Emergency Management Division, North Carolina Emergency Management, York, Charlotte-Mecklenburg and Gaston counties along with

Duke Energy operated the public information process out of several physical locations during this exercise. They used virtual communications to communicate and share information.

The primary location for distributing public information for South Carolina, State and local agencies, was located in Rock Hill, South Carolina. The facility provided a near-site location for distributing public information. The South Carolina Emergency Operations Center and the York County Multi-Agency Coordination Center were the locations for initiating and reviewing all press releases.

North Carolina State and local agencies, and Duke Energy, used the Duke Energy Joint Information Center in Charlotte, North Carolina for their main distribution center. The State of North Carolina initiated messages at either the Duke Energy facility or the North Carolina emergency operations center. North Carolina press releases and messages were approved at the state emergency operations center.

Redundant communication systems were demonstrated with no failures in all facilities. Connectivity issues hampered operations but did not result in any failures or delays in releasing messages or information. The Duke Energy Joint Information Center, a fixed, permanent facility, contained equipment, supplies, maps, and audio-visual equipment to support the operations. The South Carolina Joint Information Center was an austere, expediently-established facility with minimal staff and support equipment. The South Carolina Joint Information Center did not have equipment for monitoring live television or reviewing information that may have been transmitted over radio or television. The South Carolina facility did have dosimetry and potassium iodide for personnel due to the facility being located within the 10-mile emergency planning zone.

Agency spokespersons coordinated their message prior to media briefings. Staff had the capability to provide information to the public in Spanish by interpreter and in print. North Carolina personnel used the one-voice, one-message principle.

Inconsistencies in the generation and review of press releases between the states were observed. Some of these inconsistencies were due to the use of a different facility for the South Carolina Joint Information Center and the coordination necessary for running multiple public information sources for two states simultaneously. Despite these challenges, representatives from both States and local governments successfully demonstrated their ability to provide accurate emergency information and instructions to the public and media in a timely manner.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.b.1, 1.d.1, 1.e.1, 5.b.1.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

3.2.3.2 Emergency Operations Facility

Operational Coordination Capability Summary:

The North Carolina and South Carolina emergency management agencies and radiation control programs dispatched appropriate liaisons to the Duke Energy emergency operations facility in Charlotte, North Carolina. The presence of the various State liaisons in the emergency operations facility enhanced the flow of information between Duke Energy and the offsite response organizations, and facilitated discussions of plant conditions, field team operations, and utility recommendations. The various liaisons followed applicable procedures and performed their respective duties in an efficient and professional manner, thereby ensuring that state and county decision makers were kept up to date with accurate and timely information.

The various State liaisons effectively adapted their operations in a newly constructed emergency operations facility although most of them were working in the new area for the first time.

For this capability the following Radiological Emergency Preparedness criteria were met: 2.b.1.

a. Level 1 Finding: None

b. Level 2 Finding: None

c. Not Demonstrated: None

d. Prior Level 2 Findings – Resolved: None

e. Prior Level 2 Findings - Unresolved: None

3.2.3.3 National Weather Service, Greenville-Spartanburg Airport

Public Information and Warning Core Capability Summary:

National Weather Service staff successfully demonstrated the Public Information and

Warning Core Capability during this exercise from the Greenville-Spartanburg Airport Station. The staff received an email and a call from the South Carolina State Warning Point to initiate the actions to transmit the Emergency Alert System message. The staff assigned to transmit the message authenticated the message, asked to which counties the transition was going to and the how long the State wanted to run the message.

The staff was knowledgeable of the procedures to authenticate, load the message in system and transmit the Emergency Alert System message.

For this capability the following Radiological Emergency Preparedness criteria were met: 5.a.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

3.2.3.4 Lake Wylie Clearing

On-Scene Security and Protection Core Capability Summary:

South Carolina
Members of the South Carolina Department of Natural Resources, Law Enforcement Division and the York County Sheriff's Office demonstrated the ability to alert, notify, and evacuate Lake Wylie. A Department of Natural Resources sergeant acted as the incident commander for both South and North Carolina operations at the incident command post in York County, South Carolina. All officers were knowledgeable of dosimetry requirements, and the use of potassium iodide. York County Emergency Management provided laminated copies of the standard operating procedure which contained detailed maps and directions.

North Carolina
Members of the North Carolina Wildlife Resources Commission, Division of Enforcement and the Charlotte-Mecklenburg Police Department Lake Enforcement Section demonstrated their ability to alert, notify, and evacuate their portion of Lake Wylie. Officers of both agencies were issued dosimetry and simulated potassium iodide by an official from the Charlotte-Mecklenburg Emergency Management Office, which also provided an effective radiological safety and operations briefing prior to the officers launching their patrol boats.

The combined agencies had a total of 4 patrol boats in action. The officers of this multi-agency Task Force demonstrated commendable professionalism and expertise, and fully demonstrated their ability to warn the public on Lake Wylie. All personnel were well versed on their mission requirements, dosimetry use, and potassium iodide.

For this capability the following Radiological Emergency Preparedness criteria were met: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 3.d.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Prior Level 2 Findings – Resolved:** None

e. **Prior Level 2 Findings - Unresolved:** None

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Section 4: Conclusion

Overall, the exercise was a success. Officials and representatives from the States of South Carolina and North Carolina; the risk counties of York, South Carolina and Charlotte-Mecklenburg and Gaston, North Carolina; the host counties of Cherokee, Chester, Lancaster and Union, South Carolina and Cleveland and Union North Carolina and Duke Energy as well as numerous volunteers participated in the exercise. The cooperation and teamwork of the participants was evident throughout all phases of the exercise. The Federal Emergency Management Agency wishes to acknowledge the efforts of the many individuals who participated and made this exercise a success. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. State and local emergency response organizations demonstrated knowledge of their emergency response plans and procedures and successfully implemented them.

York County's implementation of a new direction and control process and a new computer tracking system and the good coordination between multiple states and counties were just a few of the highlights from the exercise. These help demonstrate the commitment of all of the jurisdictions involved to improve their preparedness to respond to an incident at the Catawba Nuclear Station.

During this exercise, FEMA identified three level 2 findings concerning activities in South Carolina. These findings concerned improper equipment operation, training needs, sufficient quantities of monitoring equipment , and proper issuance and tracking of dosimetry. FEMA will work with the State of South Carolina to resolve these findings.

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Appendix A: Exercise Timeline

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken							
		SC-SEOC/ Dose Assessment	SC JIC	Duke JIC	York County	NC-SEOC/ Dose Assessment	Western Branch Office	Charlotte-Mecklenburg County	Gaston County
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0824	0838	0907	0912	0849	0849	0851	0835	0841
Site Area Emergency	1004	1013	1018	1018	1010	1010	1012	1014	1017
General Emergency	1158	1212	1216	1215	1210	1210	1205	1210	1211
Simulated Rad. Release Started	0916	0948	0934	0929	0932	0932	0933	0933	0933
Simulated Rad. Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational		0930	1000	1000	0947	0916	0855	0902	0845
Declaration of State of Emergency South Carolina		0942	1012	1030	N/A	N/A	N/A	N/A	N/A
North Carolina		N/A	N/A	1036	N/A	1036	1036	N/A	1036
Local		N/A	N/A	N/A	1030	N/A	N/A	1053	1254
North Carolina Direction and Control		1100	N/A	1100	N/A	1100	1100	1100	1100
Exercise Terminated		1411	1401	1404	1410	1407	1407	1407	1410
Precautionary Actions:									
Lake Wylie Clearing		1023	N/A	N/A	1023	N/A	N/A	1023	1023
Hunting and Fishing Ban		1030	N/A	N/A	1030	1030	1030	1030	1030
Early dismissal of Schools		N/A	N/A	N/A	1030	N/A	N/A	N/A	1038
Evacuation of Schools		N/A	N/A	N/A	N/A	N/A	N/A	1040	N/A
1st Protective Action Decision: Stay Tuned		1038	N/A	N/A	1038	1038	1038	1038	1038
1st Siren Activation		1050	N/A	N/A	1050	1050	1050	1050	1050
1st National Weather Service Activation		1050	N/A	N/A	1050	1050	1050	1050	1050
1st EAS Message		1055	N/A	N/A	1055	1055	1055	1055	1055
2nd Protective Action Decision: Evacuate: A-0, A-1, E-1, F-1, F-2 Shelter in Place: A-2, F-3		1255	N/A	N/A	1255	1255	1255	1255	1255
2nd Siren Activation		1300	N/A	N/A	1300	1300	1300	1300	1300
2nd National Weather Service Activation		1300	N/A	N/A	1300	1300	1300	1300	1300
2nd EAS Message: #4 Evacuate and Shelter in Place		1300	N/A	N/A	1300	1300	1300	1300	1300
2nd EAS Message: #7 KI		1305	N/A	N/A	1305	1305	1305	1305	1305
KI Decision: South Carolina – Emergency workers and Evacuated General Public		1250	N/A	N/A	1250	N/A	N/A	N/A	N/A
North Carolina – Emergency Workers		N/A	N/A	N/A	1027	1027	1027	1027	1027
North Carolina – Evacuated General Public		N/A	N/A	N/A	1250	1250	1250	1250	1250

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Appendix B: Exercise Evaluators and Team Leaders

Regional Assistance Committee Chair: Conrad Burnside

Section Chief: Lawrence Robertson/Kevin Keyes **Site Specialist:** Joe Harworth/Mike Dolder

Location	Evaluation Team	Capability & Activity
Joint Information		
EOF	John Pelchat (NRC)	Operational Coordination
Lake Wylie Clearing (OOS)	Joe Harworth (FEMA) Mike Dolder (FEMA) Matthew Bradley (FEMA) Ron Shaw (FEMA) Odis Spencer (FEMA) Debra Blunt (ICF) Danny Loomis (ICF)	On-Scene Security and Protection
Duke JIC (NC/SC/JIC Liaison	NC Liaisons - JT Ackermann (FEMA) John Simpson (FEMA) SC/York/JIC Liaison	Public Information & Warning
State of South Carolina Director: Kim Stenson		
SEOC	Matt Bradley (FEMA) John Wiecjork (ICF) Paul Nied (ICF)	Operational Coordination Public Information & Warning
SC JIC (SC/York/JIC Liaison	SC Liaisons - Odis Spencer (FEMA) Licensee/State Interface - Erica Houghton (ICF)	Public Information & Warning
Dose Assessment	John Fill (FEMA)	Environmental Response/Health & Safety
MOC	Marcy Campbell (ICF)	
FMT 1 FMT 2	Bart Ray (ICF) Dennis Wilford (ICF)	
NWS G-S Airport	Alex Sera (FEMA)	Public Information & Warning
State Traffic Control Points (Interview at ICP and York County EOC)	Candace Burrell (FEMA)	On-Scene Security and Protection
Risk County: York County Director: Mr. Chuck Haynes		
EOC	Joe Harworth (FEMA) Quintin Ivy (FEMA Robert Walker (ICF)	Operational Coordination Public Information & Warning
Backup Alert & Notification	Robert Walker (ICF)	Public Information & Warning
Protection Actions for Schools	Odis Spencer (FEMA) Ron Shaw (FEMA)	Critical Transportation

Location	Evaluation Team	Capability & Activity
(OOS 7:30 a.m. March 22@ York County EOC)	Jill Leatherman (ICF)	
EWD (OOS 6:30 p.m. March 22@ Leslie VFD)	Joe Harworth (FEMA) Odis Spencer (FEMA) Ron Shaw (FEMA) Jill Leatherman (ICF)	Environmental Response/Health & Safety
EWD (OOS 6:30 p.m. March 22@ Bethany VFD)	Joe Harworth (FEMA) Odis Spencer (FEMA) Ron Shaw (FEMA) Jill Leatherman (ICF)	Environmental Response/Health & Safety
Host Counties		
Cherokee County Director: Mr. Rick Peterson		
Reception Center & Congregate Care (OOS 6:00 p.m. March 31 @ Blacksburg High School)	Joe Harworth (FEMA) Odis Spencer (FEMA) Ron Shaw (FEMA) Matthew Bradley (FEMA)	Environmental Response/Health & Safety Mass Care
Chester County Director: Mr. Eddie Murphy		
Reception Center & Congregate Care (OOS 5:00 p.m. February 17 @ Lewisville High School)	Joe Harworth (FEMA) Odis Spencer (FEMA) Matthew Bradley (FEMA)	Environmental Response/Health & Safety Mass Care
Lancaster County Director: Mr. Morris Russell		
EOC (Training Only)	Danny Loomis (ICF)	Operational Coordination
Reception Center & Congregate Care (OOS 4:30 p.m. March 21 @ Lancaster High School)	Joe Harworth (FEMA) Odis Spencer (FEMA) Ron Shaw (FEMA) Jill Leatherman (ICF)	Environmental Response/Health & Safety Mass Care
Union County Director: Mr. Steve Jones		
Reception Center & Congregate Care (OOS 6:00 p.m. March 30 @ Union High Complex)	Joe Harworth (FEMA) Odis Spencer (FEMA) Ron Shaw (FEMA) Matthew Bradley (FEMA)	Environmental Response/Health & Safety Mass Care
State of North Carolina Director: Mr. Mike Sprayberry		
SEOC	Robert Spence (FEMA) Lorenzo Lewis (FEMA) Brenda Rembert (ICF)	Operational Coordination Public Information & Warning
NCEM Western Branch Office	Robert Nash (FEMA)	Operational Coordination
Dose Assessment	Jill Leatherman (ICF)	Environmental Response/Health & Safety

Location	Evaluation Team	Capability & Activity
FMT Management (For Training Only)	Keith Earnshaw (ICF)	Environmental Response/Health & Safety
FMT RED and FMT Blue (Stage @ NC National Guard Armory Douglas International Airport, for Training Only)	Ronald Booner (ICF) Thomas Essig (ICF)	Environmental Response/Health & Safety
Mobile Laboratory (Stage @ NC National Guard Armory Douglas International Airport, for Training Only)	Ronald Bonner (ICF) Thomas Essig (ICF)	Environmental Response/Health & Safety
Risk Counties		
Charlotte-Mecklenburg County Director:		
EOC	Mike Dolder (FEMA) Walt Cushman (FEMA) Lynn Steffensen (ICF)	Operational Coordination Public Information & Warning
Warning Point	Lynn Steffensen (ICF)	Operational Coordination
Backup Alert & Notification of the Public (Interview)	Lynn Steffensen (ICF)	Public Information
Traffic Control Points (Interview)	Lynn Steffensen (ICF)	On-Scene Security and Protection
Gaston County Coordinator: Mr. Tommy Almond		
EOC	Ron Shaw (FEMA) Rosemary Samsel (ICF)	Operational Coordination
Host County		
Cleveland County Director: Mr. Perry Davis		
Emergency Operations Center (Training Only)	Greg Dawkins (ICF)	EOC Management 1. Activate EOC (lal, ldl, lel) 2. Direct EOC Operations (lcl)
		Environmental Response/Health & Safety
Union County Director: Mr. Don Moye		
Emergency Operations Center (Training Only)	Terry Blackmon (ICF)	EOC Management 1. Activate EOC (lal, ldl, lel) 2. Direct EOC Operations (lcl)
Reception Center (OOS 6:00 p.m. February 25 @ Marvin Ridge Middle School	Michael Dolder (FEMA) J.T. Ackermann (FEMA) Lorenzo Lewis (FEMA)	Environmental Response/Health & Safety

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Appendix C: Extent-of-Play Agreements

SOUTH CAROLINA
EXTENT OF PLAY AGREEMENT
Catawba Nuclear Station
PLUME PHASE FULL PARTICIPATION RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE
April 5, 2016

All activities will be demonstrated fully in accordance with respective plans and procedures as they would be in an actual emergency (FEMA must receive these plans, guides and procedures NLT 60 days before the exercise). This Extent of Play Agreement is written by exception. If it is not listed as an exception it will be demonstrated as described in the plans, standard operating guides (SOGs) and/or procedures (SOPs). Any issue or discrepancy arising during exercise play may be re-demonstrated if allowed by the Regional Assistance Committee (RAC) Chair or as listed herein. This allowance may be granted if it is not disruptive to exercise play and is mutually agreed to by the Offsite Response Organization (ORO) controller and FEMA evaluator.

Core Capability: Operational Coordination – State and County Emergency Operations Centers (EOCs) and Emergency Operations Facility (EOF).

Definition: Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.

Capability Target: Emergency Operations Management
Performance Measure: *Procedures to alert and notify personnel will be demonstrated and personnel will respond only upon notification. Identified communications will be operational. Equipment, monitoring instruments and dosimetry must be available and will be operational which includes an affixed current calibration and range of readings sticker if applicable; quantities of Potassium Iodide (KI) and expirations will be verified.*

Critical Task: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner (NUREG-0654/FEMA-REP-1, A.1.a, e; A.3, 4; C.1, 4, 6; D.4; E.1, 2; H.3, 4; Criterion 1.a.1).

All participating state and local government personnel will be pre-positioned in the area and will only respond after notification. The DHEC Mobile Operations Center will be pre-positioned at the South Carolina Army National Guard Armory 126 Museum Road, Rock Hill, SC.

Critical Task: At least 2 communications systems are available, at least 1 operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations (NUREG-0654/FEMA-REP-1, F.1, 2; Criterion 1.d.1).

State and county decision makers will use the Duke Energy Emergency Management Network (DEMNET) to conduct protective action discussions/decision making and the conference bridge line will be the backup.

Note: York County will have a courtesy evaluation with WebEOC functionality and implementation.

Critical Task: Equipment, maps, displays, monitoring instruments, dosimetry, KI, and other supplies are sufficient to support emergency operations (NUREG-0654/FEMA-REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b; Criterion 1.e.1).

Quantities of KI are verified during staff assisted visits (SAVs).

Quantities of equipment, their calibration/testing are verified during SAVs.

SAV locations, dates, and times are as follows:

Cherokee County: EOC on March 31, 2016 at 3:00 p.m.
Chester County: EOC on February 17, 2016 at 2:00 p.m.
Lancaster County: EOC on March 21, 2016 at 2:00 p.m.
Union County: EOC on March 30, 2016 at 2:00 p.m.
York County: EOC on March 22, 2016 at 2:00 p.m.

Host Counties can opt to partially participate in their respective EOCs but will not be formally evaluated.

Capability Target: Protective Action Decision Making

Performance Measure: *Key personnel with leadership roles will provide direction and control; protective action decision (PAD) making will be demonstrated by the OROs.*

Critical Task: Appropriate PARs are based on available information on plant condition, field monitoring data, and licensee and ORO dose projections, as well as knowledge of onsite and offsite environmental conditions (NUREG-0654/FEMA-REP-1, I. 10; Supp. 3; Criterion 2.b.1).

In accordance with plans and procedures.

Critical Task: 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/FEMA-REP-1, A.1.d; A.2.a, b; A.3; C.4, 6; Criterion 1.c.1).

State direction and control will be at the State Emergency Operations Center (SEOC). County direction and control will occur at York County EOC. All telephone calls to non-participating

agencies will be made by calling the simulation cell (simcell). FEMA evaluator will be given access to the simcell as needed. The State of South Carolina will coordinate precautionary and/or protective action decisions with Counties of North Carolina and the State of North Carolina at the NC SEOC. South Carolina and will provide updates and situation reports as needed/requested.

Critical Task: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for Emergency Workers (EWs) including provisions to authorize radiation exposure in excess of administrative limits or PAGs (NUREG-0654/FEMA-REP-1, C.6; J.10.e, f; K.4 Criterion 2.a.1).

Protective Action Guidelines will be referenced using the SCORERP and using the EPA-400 Manual, in accordance with plans and procedures.

Critical Task: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make PADs for the general public (including the recommendation for the use of KI, if ORO policy) (NUREG-0654/FEMA-REP-1, A.3; C.4, 6; D.4; J.9; J.10.f, m Criterion 2.b.2).

In accordance with plans and procedures.

Critical Task: Protective action decisions are made, as appropriate, for groups of persons with disabilities and access/functional needs (NUREG-0654/FEMA-REP-1, D.4; J.9; J.10.d, e; Criterion 2.c.1).

In accordance with plans and procedures.

Capability Target: Protective Action Implementation
Performance Measure: *Demonstrate the capability to implement EW exposure control; KI decision for institutionalized individuals and the general public; protective actions for persons with disabilities and access/functional needs; schools; traffic and access control and impediments to evacuation.*

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654/FEMA-REP-1, J.10.e, K.3.a, b, K.4; Criterion 3.a.1).

DHEC: In accordance with plans and procedures during the exercise
Counties: In accordance with plans and procedures during out-of-sequence activities at the reception centers.

Critical Task: KI and appropriate instructions are available if a decision to recommend use of KI is made. Appropriate record-keeping of the administration of KI for institutionalized individuals and the general public is maintained (NUREG-0654/FEMA-REP-1, J.10.e, f; Criterion 3.b.1).

KI distribution and record keeping for institutionalized individuals will be discussed at county EOCs during the exercise.

Critical Task: PADs are implemented for persons with disabilities and access/functional needs other than schools within areas subject to protective actions (NUREG-0654/FEMA-REP-1, J.10.c, d, e, g; Criterion 3.c.1).

By discussion in each county EOC during the exercise, if applicable.

Critical Task: OROs/School officials implement protective actions for schools (NUREG-0654/FEMA-REP-1, J.10.c, d, e, g; Criterion 3.c.2).

By discussion in each county EOC during the exercise, if applicable.

Critical Task: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel (NUREG-0654/FEMA-REP-1, A.3; C.1, 4; J.10.g, j; Criterion 3.d.1).

By demonstration in sequence by South Carolina Highway Patrol during the exercise.

Critical Task: Impediments to evacuation are identified and resolved (NUREG-0654/FEMA-REP-1, J.10.k; Criterion 3.d.2).

By discussion in each county EOC during the exercise, if applicable.

Core Capability: Public Information and Warning – State/County EOCs and Joint Information Center (JIC)

Definition: Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken and the assistance being made available.

Capability Target: Emergency Notification and Public Information
Performance Measure: *Sirens and the EAS System will be activated in a timely manner to alert the general public along with waterway warning and back up route alerting in case of failure of the primary alert and notification system.*

Critical Task: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency

officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP Guidance (Timely: The responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay) (NUREG-0654/FEMA-REP-1, E.5, 6, 7; Criterion 5.a.1).

The State of South Carolina will coordinate precautionary and/or protective action decisions with the counties of North Carolina and the State of North Carolina. The first siren activation will be demonstrated by a silent test. All subsequent siren activations will be simulated. A "test message" EAS message will be transmitted to the National Weather Service Office in Greer, South Carolina. Broadcast of an EAS test message will be simulated and the process will be discussed. Only one EAS message will be sent, and consecutive messages will be simulated via the JIS email distribution list developed by SC/NC PIOs. Copies of the simulated EAS messages and news releases will be provided to the FEMA evaluator at the SEOC.

Critical Task: Backup alert and notification of the public is completed within a reasonable time following the detection by the ORO of a failure of the primary alert and notification system (NUREG-0654/FEMA-REP-1, E.6; Appendix 3.B.2.c; Criterion 5.a.3).

Backup route alerting procedures will be demonstrated at each county EOC during the exercise.

Critical Task: Waterway warning is completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation (NUREG-0654/FEMA-REP-1, E.6; Appendix 3.B.2.c; Criterion 5.a.4).

Waterway warning: South Carolina Department of Natural Resources (DNR), York County Sherriff's Department, Tega Cay Police Department, County of Charlotte-Mecklenburg and North Carolina Wildlife will jointly demonstrate waterway clearing on March 24, 2016 at 2:00 p.m., with 1 boat per agency demonstrating waterway warning procedures.

Critical Task: Ensure OROs provide accurate emergency information and instructions to the public and the news media in a timely manner (The responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay) (NUREG-0654/FEMA-REP-1, E.5, 7; G.3.a; G.4.a, c; Criterion 5.b.1).

The State of South Carolina will coordinate precautionary and/or protective action decisions with the counties of North Carolina and the State of North Carolina and will demonstrate the ability to disseminate accurate information and instructions to the public and news media through the Joint Information System (JIS). Public inquiry for the state will be demonstrated at the State EOC. York County public inquiry will be demonstrated at the York County EOC. The Incident Joint Information Center (JIC) will be located at the Baxter Hood Center, 52 South Anderson Road, Rock Hill, SC 29730. Public inquiry personnel will provide the FEMA evaluator with a call log.

Critical Task: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner (NUREG-0654/FEMA-REP-1, A.1.a, e; A.3, 4; C.1, 4, 6; D.4; E.1, 2; H.3, 4; Criterion 1.a.1).

All participating state and local government personnel will be pre-positioned in the area and will only respond after notification.

Critical Task: Equipment, maps, displays, monitoring instruments, dosimetry, KI, and other supplies are sufficient to support emergency operations (NUREG-0654/FEMA-REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b; Criterion 1.e.1).

In accordance with plans and procedures.

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654/FEMA-REP-1, J.10.e, K.3.a, b, K.4; Criterion 3.a.1).

DHEC: In accordance with plans and procedures during the exercise.

Counties: In accordance with plans and procedures during out-of-sequence activities at the reception centers.

Core Capability: Environmental Response/Health and Safety – *Dose, Emergency Worker Decontamination (EWD), Reception Center Congregate Care (RCCC)*
Definition: Ensure the availability of guidance and resources to address all hazards including hazardous materials, acts of terrorism, and natural disasters in support of the responder operations and the affected communities.

Capability Target: Protective Action Decision Making
Performance Measure: *OROs authorized to send emergency workers into the plume exposure pathway EPZ must demonstrate a capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place, as specified in the ORO's plans/procedures, to authorize emergency worker exposure limits to be exceeded for specific missions. As appropriate, OROs must demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for emergency workers. OROs must have the capability to independently project integrated dose from projected or actual dose rates and compare these estimates to the PAGs. OROs must have the capability to choose, among a range of protective actions, those most appropriate in a given emergency.*

Critical Task: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for EWs including provisions to authorize radiation exposure in excess of administrative

limits or Protective Action Guides (PAG) (NUREG-0654/FEMA-REP-1, C.6; J.10.e, f; K.4 Criterion 2.a.1).

In accordance with plans and procedures.

Critical Task: Appropriate PARs are based on available information on plant condition, field monitoring data, and licensee and ORO dose projections, as well as knowledge of onsite and offsite environmental conditions (NUREG-0654/FEMA-REP-1, I. 10; Supp. 3; Criterion 2.b.1).

In accordance with plans and procedures.

Critical Task: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make PADs for the general public (including the recommendation for the use of KI, if ORO policy) (NUREG-0654/FEMA-REP-1, A.3; C.4, 6; D.4; J.9; J.10.f, m; Criterion 2.b.2).

In accordance with plans and procedures.

Capability Target: Protective Action Implementation
Performance Measure: *OROs must demonstrate the capability to provide EWs (including supplemental resources) with the appropriate direct-reading and permanent record dosimetry, dosimeter chargers, KI, and instructions on the use of these items.*

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654/FEMA-REP-1, J.10.e, K.3.a, b, K.4; Criterion 3.a.1).

DHEC: In accordance with plans and procedures during the exercise.
Counties: In accordance with plans and procedures during out-of-sequence activities at the reception centers.

Critical Task: KI and appropriate instructions are made available in case a decision to recommend use of KI is made. Appropriate record keeping of the administration of KI for institutionalized individuals and the general public is maintained (NUREG-0654/FEMA-REP-1, J.10.e, f; Criterion 3.b.1).

In accordance with plans and procedures during out of sequence activities at the reception centers.

Capability Target: Field Measurement and Analysis
Performance Measure: FMTs with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an

airborne plume. In addition OROs must have the capability to use FMTs within the plume exposure pathway EPZ to detect airborne radioiodine in the presence of noble gases and radioactive particulate material in the airborne plume. Demonstrate the capability to brief FMTs on predicted plume location and direction, plume travel speed, and exposure control procedures before deployment. Field measurements are needed to help characterize the release and support the adequacy of implemented protective actions, or to be a factor in modifying protective actions. Teams must be directed to take measurements at such locations and times as necessary to provide sufficient information to characterize the plume and its impacts.

Critical Task: Field Teams (two or more) are managed to obtain sufficient information to help characterize the release and to control radiation exposure (NUREG-0654/FEMA-REP-1, C.1, H.12, I.7, 8, 11, J.10.a; Criterion 4.a.2).

The Field Monitoring Teams will utilize Rad Responder during their duties in the exercise.

Critical Task: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low-background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on sampling media. (NUREG-0654/FEMA REP-1, C.1, I.8, 9, H.12, J.10.a; Criterion 4.a.3).

In accordance with plans and procedures.

Capability Target: Support Operations and Facilities
Performance Measure: *Radiological monitoring, decontamination, and registration facilities for evacuees and emergency workers must be set up and demonstrated as they would be in an actual emergency. For RCCC, OROs conducting this demonstration must have one-third of the resources (e.g., monitoring teams/instrumentation/portal monitors) available at the facility(ies) as necessary to monitor 20 percent of the population within a 12-hour period; this would include adequate space for evacuees' vehicles. A minimum of six evacuees must be monitored per station using equipment and procedures specified in the plans/procedures. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators to determine whether the 12-hour requirement can be met. For EWD, monitoring of emergency workers does not have to meet the 12-hour requirement, however, appropriate monitoring procedures must be demonstrated for a minimum of two emergency workers and their equipment and at least one vehicle. Monitoring activities shall not be simulated; decontamination of evacuees, emergency workers and vehicles may be simulated and conducted by interview. Provisions for separate showering and same-sex decontamination must be demonstrated or explained. The staff must demonstrate provisions for limiting the spread of contamination; these provisions may be partially simulated to conserve resources. In addition, for any evacuee and emergency worker found to be contaminated, procedures must be discussed concerning handling of potential contamination of vehicles and personal belongings.*

Critical Task: Equipment, maps, displays, monitoring instruments, dosimetry, KI, and other supplies are sufficient to support emergency operations (NUREG-0654/FEMA-REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b; Criterion 1.e.1).

Reception Centers to be evaluated are:
Cherokee County: Gaffney High School on March 31, 2016 at 6:00 p.m.
Chester County: Lewisville High School on February 17, 2016 at 6:00 p.m.
Lancaster County: Lancaster High School on March 21, 2016 at 5:00 p.m.
Union County: First Baptist Church Family Life Center on March 30, 2016 at 5:00 p.m.

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654/FEMA-REP-1, J.10.e, K.3.a, b, K.4; Criterion 3.a.1).

In accordance with plans and procedures during out-of-sequence activities at the reception centers.

Critical Task: The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees (NUREG-0654/FEMA-REP-1, A.3; C.4; J.10.h; J.12; Criterion 6.a.1).

In accordance with plans and procedures during out-of-sequence activities at the reception centers.

Critical Task: The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment and vehicles (NUREG-0654/FEMA-REP-1, K.5.a, b; Criterion 6.b.1).

During out of sequence activities in York County
On March 22, 2016 at 6:30 p.m. at Lesslie Fire Department
On March 23, 2016 at 6:30 p.m. at Bethany Fire Department

Core Capability: Critical Transportation – *Protective Action for Schools*
Definition: Provide transportation (including infrastructure access and accessible transportation services) for response priority objectives, including the evacuation of people and animals, and the delivery of vital response personnel, equipment, and services into the affected areas.

Capability Target: Protective Action Implementation
Performance Measure: *Demonstrate the ability to implement protective actions for schools.*

Critical Task: OROs/School officials implement protective actions for schools (NUREG-0654/FEMA-REP-1, J.10.c, d, e, g; Criterion 3.c.2).

York County Schools to be evaluated by interview on March 22, 2016 (7:45 a.m. at York County EOC) with State and Local Personnel as follows:

Team 1

Harold C. Johnson Elementary	8:30 a.m.
Hunter Street Elementary	9:15 a.m.
Cotton Belt Elementary	10:00 a.m.
Larne Elementary	10:45 a.m.
Blue Eagle Academy	11:30 a.m.
Clover Middle	12:15 p.m.
Oakridge Middle	1:00 p.m.

Team 2

Riverview Elementary	8:30 a.m.
Gold Hill Elementary	9:15 a.m.
Tega Cay Elementary	10:00 a.m.
Pleasant Knoll Elementary	10:45 a.m.
Sugar Creek Elementary	11:30 a.m.
Springfield Middle	12:15 p.m.
Doby's Bridge Elementary	1:00 p.m.

Team 3

Sunset Park Elementary	8:15 a.m.
Central Child Development	9:00 a.m.
Northside School of Arts	9:45 a.m.
Richmond Drive Elementary	10:30 a.m.
Sullivan Middle	11:15 a.m.
Ebinport Elementary	12:00 p.m.
Old Pointe Elementary	12:45 p.m.
Dutchman Creek Middle	1:30 p.m.

Core Capability: On-Scene Security and Protection – *Traffic Control Points (TCPs)*
Definition: Ensure a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas and also for all traditional and atypical response personnel engaged in lifesaving and life-sustaining operations.

Capability Target: Protective Action Implementation
Performance Measure: *Demonstrate the capability to select, establish and staff traffic control and access points; identify and resolve impediments to evacuation; distribute dosimetry and KI; and implement and manage EW exposure control.*

Critical Task: Equipment (to include communications), maps, displays, monitoring instruments, dosimetry, KI, and other supplies are sufficient to support emergency operations (NUREG-0654/FEMA-REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b; Criterion 1.e.1).

Traffic Control Points are predetermined. The South Carolina Highway Patrol will demonstrate during the exercise on April 5, 2016:

The following TCPs to be evaluated:
TCP#1 SC-49, SC-55 and SC-274 (ST-01)
TCP#2 SC-49 and Liberty Hill Road (ST-02)

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654/FEMA-REP-1, J.10.e, K.3.a, b, K.4; Criterion 3.a.1).

Evaluated by discussion during out of sequence activities at the reception centers

Critical Task: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel (NUREG-0654/FEMA-REP-1, A.3; C.1, 4; J.10.g, j; Criterion 3.d.1).

Evaluated by discussion during out-of-sequence activities at the reception centers

Critical Task: Impediments to evacuation are identified and resolved (NUREG-0654/FEMA-REP-1, J.10.k; Criterion 3.d.2).

Evaluated by discussion during out-of-sequence activities at the reception centers.

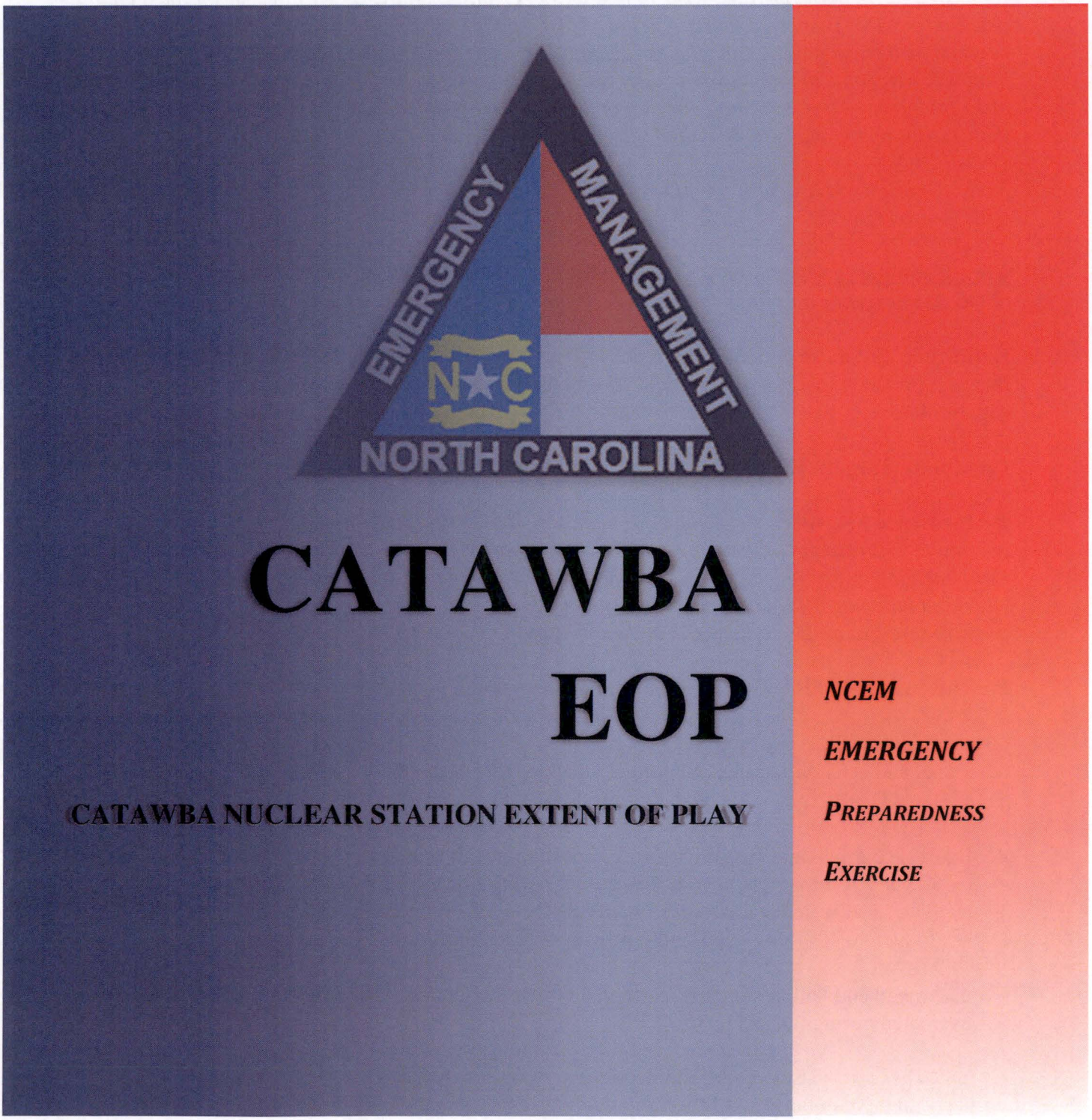
Core Capability: Mass Care – *Reception/Congregate Care*
Definition: Provide life-sustaining services to the affected population with a focus on hydration, feeding and sheltering to those who have the most need as well as support for reunifying families.

Capability Target: Support Operations and Facilities
Performance Measure: *The evaluator will conduct a walk-through of the center to determine, through observation and inquiries, that the services and accommodations are consistent with applicable guidance. Congregate care staff must also demonstrate the capability to ensure that evacuees, service animals, and vehicles have been monitored for contamination, decontaminated as appropriate, and registered before entering the facility. Material that would be difficult or expensive to transport (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility(ies). However, availability of such items must be verified by providing the evaluator a list of sources with locations and estimates of quantities.*

Critical Task: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate before entering congregate care facilities (NUREG-0654/FEMA-REP-1; J.10.h; J.12; Criterion 6.c.1).

In accordance with plans and procedures during out-of-sequence activities at the reception centers.

North Carolina Extent of Play Agreement



Most activities will be demonstrated fully in accordance with respective plans. Some activities are requested to be performed as a training-only opportunity, and are identified in the participant description. It is requested that any issue or discrepancy arising during exercise play be allowed correction immediately, at all player locations, if it isn't disruptive to exercise play and if it is mutually agreeable to both the controller and evaluator. Exercise participants are allowed to pre-position for this exercise. Staff working in the Joint Information Center (JIC) will pre-position in the Charlotte area and will be called to report to the JIC at the appropriate time.

Note: Charlotte-Mecklenburg will be utilizing DRAFT procedures for all elements associated with the exercise.

Core Capability: Operational Coordination– *State and County emergency operations centers (EOCs), emergency operations facility (EOF) and incident command post (ICP).*

Definition: Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.

Capability Target: Emergency Operations Management

Performance Measure: *Procedures to alert and notify personnel will be demonstrated and personnel will respond only upon notification. Identified communications will be operational. Equipment, monitoring instruments and dosimetry must be available and will be operational which includes an affixed current calibration and range of readings sticker if applicable; quantities of Potassium Iodide (KI) and expirations will be verified.*

Participants: NC SERT, Gaston, Mecklenburg and Union Counties

Critical Task: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner (NUREG-0654/ FEMA REP-1, A.1.a, e; A.3, 4; C.1, 4, 6; D.4; E.1, 2; F.1, 2 H.3, 4; Criterion 1.a.1).

- Exercise participants are allowed to pre-position for this exercise.
  - County Alert rosters have been verified during FEMA SAV
  - The Lead State Evaluator will verify SEOC staffing rosters
  - Players will discuss alert and notification procedures with the evaluators.

- Cleveland and Union Counties participation will be for TRAINING ONLY and will not be evaluated during this exercise.

Critical Task: At least two communications systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations.

Communications capabilities are managed in support of emergency operations (NUREG-0654/ FEMA REP-1, F.1, 2; Criterion 1.d.1).

Agreed

Critical Task: Equipment, maps, displays, monitoring instruments, dosimetry, KI, and other supplies are sufficient to support emergency operations (NUREG-0654/ FEMA REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b; Criterion 1.e.1).

- Quantities of KI will be verified during Staff Assistance Visits (SAVs).

- Quantities of equipment, their calibration/testing will be verified during SAVs.

Staff Assistance Visits:

Cleveland County:
Emergency Management Office
100 Justice Place, Room 104-B
Shelby, NC 28151

Date: March 29, 2016
Time: 2:00 PM

Gaston County:
Emergency Management Office at EOC
615 N. Highland Street
Gastonia, NC 28053

Date: March 29, 2016
Time: 9:00 AM

Mecklenburg County:
Charlotte-Mecklenburg Emergency Management Office
500 Dalton Ave
Charlotte, NC 28206

***Date**: March 28, 2016*
***Time**: 2:00 PM*

Union County:
Emergency Management Office
500 N Main St. Suite 809
Monroe, NC 28112

***Date**: March 30, 2016*
***Time**: 2:00 PM*

Capability Target: Protective Action Decision Making (PAD)

Performance Measure: *Key personnel with leadership roles will provide direction and control; protective action decision making will be demonstrated by the OROs. Following activation of the ICP, staff and organize the ICP in accordance with the comprehensive emergency management plan (CEMP) and the requisite policies, procedures, and directives.*

Participants: NC SERT, Radiation Protection, Cleveland, Gaston, Mecklenburg and Union Counties.

Critical Task: 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; A.2.a, b; A.3; C.4, 6; Criterion 1.c.1).

- Mecklenburg County will be the lead-coordinating county in North Carolina until the State is requested to assume direction and control.

Critical Task: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for EWs including provisions to authorize radiation exposure in excess of administrative limits or Protective Action Guidelines (PAG), (NUREG-0654/FEMA REP-1, C.6; J.10.e, f; K.4; Criterion 2.a1).

Agreed

Critical Task: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make PADs for the general public (including the recommendation for the use of KI, if ORO policy) (NUREG-0654/ FEMA REP-1, A.3; C.4, 6; D.4; J.9; J.10.f, m; Criterion 2.b.2).

Agreed

Critical Task: PADs are made, as appropriate, for groups of persons with disabilities and access/functional needs (NUREG-0654/FEMA REP-1, D.4; J.9; J.10.d, e; Criterion 2.c.1).

Agreed

Capability Target: Protective Action Implementation

Performance Measure: *Demonstrate the capability to implement emergency worker exposure control; KI decision for institutionalized individuals and the general public; protective actions*

for persons with disabilities and access/functional needs; schools; traffic and access control and impediments to evacuation.

Participants: NC SERT, Radiation Protection, Gaston, Mecklenburg and Union Counties.

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

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

- Demonstration of KI distribution for the General Public will be accomplished during Off-Scenario activity by local Public Health or Emergency Management officials through discussion with and presentation of distribution documentation to the Federal Evaluator.

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654/FEMA REP-1, J.10.e, K.3.a, b, K.4; Criterion 3.a.1).

Agreed

Critical Task: KI and appropriate instructions are available if a decision to recommend use of KI is made. Appropriate record-keeping of the administration of KI for institutionalized individuals (not general public) is maintained (NUREG-0654/FEMA REP-1, J.10.e, f; Criterion 3.b.1).

- KI distribution and record keeping for institutionalized individuals will be discussed at the county EOCs

Critical Task: Protective action decisions are implemented for persons with disabilities and access/functional needs other than schools within areas subject to protective actions (NUREG-0654 J.10.c, d, e, g; Criterion 3.c.1).

- In accordance with current Health Insurance Portability and Accountability Act (HIPAA), each county will provide a current list (either printed or on electronic database) of Special Needs Populations for review by the Federal Evaluator during the exercise. Lists are for review only, and the Evaluator will not keep a copy.

Critical Task: OROs/School officials implement protective actions for schools (NUREG-0654/FEMA REP-1, J.10.c, d, e, g; Criterion 3.c.2).

- School evacuation procedures and interviews will be demonstrated via discussion with key school staff members at the County EOCs on scenario.

Critical Task: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel (NUREG-0654/FEMA REP-1, A.3; C.1, 4; J.10.g, j; Criterion 3.d.1).

- Traffic control points will be discussed with the Federal Evaluator at the County EOC. Law Enforcement personnel will discuss REP traffic control procedures and equipment during on-scenario.

Critical Task: Impediments to evacuation are identified and resolved (NUREG-0654/FEMA REP-1, J.10.k; Criterion 3.d.2).

- Actions to identify and remove impediments to evacuation will be by discussion with the responsible law enforcement agency at each county EOC, as scenario dictates.

Core Capability: Public Information and Warning *–Count/ State EOCs, ICP, JIC*

Definition: Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken and the assistance being made available.

Capability Target: Emergency Notification and Public Information

Performance Measure*: Sirens and the EAS System will be activated if needed in a timely manner to alert the general public along with waterway warning and back up route alerting in case of failure of the primary alert and notification system.*

Participants: NC, Gaston, Mecklenburg and Union Counties (Joint Information Center)

Critical Task: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance (Timely: The responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay) (NUREG-0654 /FEMA REP-1, E.5, 6, 7; Criterion 5.a.1).

- South Carolina will be the "Lead Agency" for EAS message selection and siren activation. As Lead Agency, South Carolina will coordinate and conduct the countdown for activating sirens if needed. Copies of individual state EAS messages will be provided to FEMA evaluators by both South Carolina and North Carolina.

Critical Task: Backup alert and notification of the public is completed within a reasonable time following the detection by the ORO of a failure of the primary alert and notification system (NUREG-0654/ FEMA REP-1, E.6; Appendix 3.B.2.c; Criterion 5.a.3).

- If the sirens are sounded and a siren has failed, back-up alerting will be discussed with the Federal Evaluator.

None

Critical Task: Waterway warning is completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation (NUREG-0654 /FEMA REP-1, E.6; Appendix 3.B.2.c; Criterion 5.a.4).

- Waterway warning will be demonstrated during this exercise
- Communication will be via radio on South Lake Channel

Note: Air Support (Charlotte-Mecklenburg Police Department helicopter and NC Wildlife fixed wing) will not be utilized during this exercise but available as part of the response plan.

Charlotte-Mecklenburg:
McDowell Nature Reserve
15222 York Road
Charlotte, NC 28278

***Date**: 24 March 2016*
***Time**: 10:00 am /2:00 pm*

NC Wildlife:
Charlotte Fire Department CFD 38
12100 Shopton Road West
Charlotte, NC 28278

***Date:** 24 March 2016*
***Time**: 10:00 am /2:00 pm*

***Note**: 10:00 am for Briefing and 2:00 pm for Demonstration*

Critical Task: OROs provide accurate subsequent emergency information and instructions to the public and the news media in a timely manner. The responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay (NUREG-0654/ FEMA REP-1, E.5, 7; G.3.a; G.4.a, c; Criterion 5.b.1).

- Staff working in the Joint Information Center (JIC) will pre-position at the JIC and will begin work at the appropriate time. Players will discuss alert and notification procedures with the Federal Evaluators.
- State rumor control functions will be demonstrated in the SEOC.
- County rumor control will be per their plans and procedures.

Core Capability: Environmental Response/Health and Safety– *Dose, Field Teams, Radiation Protection, EWD, RCCC*

Definition: Ensure the availability of guidance and resources to address all hazards including hazardous materials, acts of terrorism, and natural disasters in support of the responder operations and the affected communities.

Capability Target: Protective Action Decision Making

Performance Measure: *OROs authorized to send emergency workers into the plume exposure pathway EPZ must demonstrate a capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place, as specified in the ORO's plans/procedures, to authorize emergency worker exposure limits to be exceeded for specific missions. As appropriate, OROs must demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for emergency workers. OROs must have the capability to independently project integrated dose from projected or actual dose rates and compare these estimates to the PAGs. OROs must have the capability to choose, among a range of protective actions, those most appropriate in a given emergency.*

Note: Radiation Protection North Carolina's avenue for offsite dosage monitoring

Participants: NC SERT, Cleveland, Gaston, Mecklenburg and Union Counties

Critical Task: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for EWs, including provisions to authorize radiation exposure in excess of administrative limits or PAGs (NUREG-0654/ FEMA REP-1, C.6; J.10.e, f; K.4 Criterion 2.a.1).

Agreed

Critical Task: Appropriate PARs are based on available information on plant condition, field monitoring data, and licensee and ORO dose projections, as well as knowledge of onsite and offsite environmental conditions (NUREG-0654/ FEMA REP-1, I. 10; Supp. 3; Criterion 2.b.1).

Agreed

Critical Task: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make PADs for the general public (including the

recommendation for the use of KI, if ORO policy) (NUREG-0654/ FEMA REP-1, A.3; C.4, 6; D.4; J.9; J.10.f, m; Criterion 2.b.2).

Agreed

Capability Target: Protective Action Implementation

Performance Measure: *OROs must demonstrate the capability to provide emergency workers (including supplemental resources) with the appropriate direct-reading and permanent record dosimetry, dosimeter chargers, KI, and instructions on the use of these items.*

Participants: NC SERT, Radiation Protection Section, Mecklenburg, Gaston, Cleveland & Union Counties.

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654/FEMA REP-1, J.10.e, K.3.a, b, K.4; Criterion 3.a.1).

Agreed

Critical Task: KI and appropriate instructions are available if a decision to recommend use of KI is made. Appropriate record-keeping of the administration of KI for institutionalized individuals and the general public is maintained (NUREG-0654/ FEMA REP-1, J.10.e, f; Criterion 3.b.1).

Agreed

Capability Target: Field Measurement and Analyses

Critical Task: Field teams (two or more) are managed to obtain sufficient information to help characterize the release and to control radiation exposure (NUREG C.1; H.12; I.7, 8, 11; J.10.a; Criterion 4a2).

- Two North Carolina Department of Health and Human Services, Division of Health Service Regulation, Radiation Protection Section (RPS) Field Monitoring Teams (FMTs) will be pre-positioned at the North Carolina Air National Guard facility at Douglas International Airport. **Both FMTs will be evaluated For Training Only**.

Critical Task: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low-background location to determine whether any significant (as specified in the plan and/or

procedures) amount of radioactivity has been collected on the sampling media (NUREG C.1; I.8, 9; H.12; J.10.a; Criterion 4a3).

- Two RPS FMTs will be pre-positioned at the North Carolina Army National Guard facility at Douglas International Airport. **Both FMTs will be evaluated For Training Only.**

Critical Task: The laboratory is capable of performing required radiological analyses to support PADs (NUREG-0654 C.1; 3; J.11; Criterion 4c1).

- Two RPS FMTs will be pre-positioned at the North Carolina Army National Guard facility at Douglas International Airport. **Both FMTs will be evaluated For Training Only.**

Capability Target: Support Operations and Facilities

Performance Measure: *Radiological monitoring, decontamination, and registration facilities for evacuees and emergency workers must be set up and demonstrated as they would be in an actual emergency. For Reception Center and Congregate Care (RCCC), OROs conducting this demonstration must have one-third of the resources (e.g., monitoring teams/instrumentation/portal monitors) available at the facility(ies) as necessary to monitor 20 percent of the population within a 12-hour period; this would include adequate space for evacuees' vehicles. A minimum of six (6) evacuees must be monitored per station using equipment and procedures specified in the plans/procedures. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators to determine whether the 12-hour requirement can be met. For EWD, monitoring of emergency workers does not have to meet the 12-hour requirement, however, appropriate monitoring procedures must be demonstrated for a minimum of two emergency workers and their equipment and at least one vehicle. Monitoring activities shall not be simulated; decontamination of evacuees, emergency workers and vehicles may be simulated and conducted by interview. Provisions for separate showering and same-sex decontamination must be demonstrated or explained. The staff must demonstrate provisions for limiting the spread of contamination; these provisions may be partially simulated to conserve resources. In addition, for any evacuee and emergency worker found to be contaminated, procedures must be discussed concerning handling of potential contamination of vehicles and personal belongings.*

Participants: Union County.

Critical Task: Equipment, maps, displays, monitoring instruments, dosimetry, KI, and other supplies are sufficient to support emergency operations (NUREG-0654 H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b; Criterion 1e1).

Agreed

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of

each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654 J.10.e, K.3.a, b, K.4; Criterion 3a1).

Not Demonstrated

Critical Task: KI and appropriate instructions are made available in case a decision to recommend use of KI is made. Appropriate record keeping of the administration of KI for institutionalized individuals and the general public is maintained (NUREG-0654 J.10.e, f; Criterion 3b1).

- FEMA verified KI procedures during county SAVs

Critical Task: The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees (NUREG-0654 A.3; C.4; J.10.h; J.12; Criterion 6a1).

Agreed

Participants: Union County
Agency: Union County (Reception Center)
Location: Marvin Ridge High School
2825 Crane Rd. Waxhaw, NC 28173

Date: *March 30, 2016*
Time: *6:00 PM*

Note: Monitoring and decontamination will not be demonstrated at the reception center facility. Reception center will be evaluated for training and education only.

Critical Task: The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment and vehicles (NUREG-0654 K.5.a, b; Criterion 6b1).

Not Demonstrated

Core Capability: On-Scene Security and Protection - *TCPs*

Definition: Ensure a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas and also for all traditional and atypical response personnel engaged in lifesaving and life-sustaining operations.

Capability Target: Protective Action Implementation

Performance Measure: *Demonstrate the capability to select, establish and staff traffic control and access points; identify and resolve impediments to evacuation; distribute dosimetry and KI; and implement and manage EW exposure control.*

Participants: North Carolina State Highway Patrol, Gaston and Mecklenburg Counties.

Critical Task: Equipment (to include communications), maps, displays, monitoring instruments, dosimetry, KI, and other supplies are sufficient to support emergency operations (NUREG-0654 H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b; Criterion 1e1).

Agreed

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654 J.10.e, K.3.a, b, K.4; Criterion 3a1).

Agreed
Critical Task: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel (NUREG-0654 A.3; C.1, 4; J.10.g, j; Criterion 3d1).

- Traffic control points (TCPs) will be discussed with the Federal Evaluators by law enforcement personnel on scenario, and will discuss proper procedures, equipment and turn back values.

- TCP interviews will be performed during the exercise.

Critical Task: Impediments to evacuation are identified and resolved (NUREG-0654 J.10.k; Criterion 3d2).

- The EM Director/Coordinator or appropriate EOC staff will describe what resources are available to remove impediments from thoroughfares.

Core Capability: Critical Transportation – *Protective Action for Schools*

Definition: Provide transportation (including infrastructure access and accessible transportation services) for response priority objectives, including the evacuation of people and animals, and the delivery of vital response personnel, equipment, and services into the affected areas.

Capability Target: Protective Action Implementation

Performance Measure: *Demonstrate the ability to implement PADs for schools.*

Critical Task: OROs/School officials implement protective actions for schools (NUREG-0654/ FEMA REP-1, J.10.c, d, e, g; Criterion 3.c.2).

- School evacuation procedures and interview will be demonstrated via discussion with key school staff members at the County EOCs on scenario.

Core Capability: Public Health and Medical Services – *Medical Services Drill*

Definition: Provide lifesaving medical treatment via emergency medical services and related operations and avoid additional disease and injury by providing targeted public health and medical support and products to all people in need within the affected area.

Capability Target: Support Operations and Facilities

Performance Measure: *Demonstrate the capability to transport contaminated injured individuals to medical facilities and provide medical services.*

Participants:

Critical Task: Equipment, maps, displays, monitoring instruments, dosimetry, KI, and other supplies are sufficient to support emergency operations (NUREG-0654/ FEMA REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b; Criterion 1.e.1).

Agreed

Critical Task: OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to EWs in accordance with the plans/procedures. EWs periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to EWs (NUREG-0654 J.10.e, K.3.a, b, K.4; Criterion 3.a.1).

Agreed

Critical Task: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals (NUREG-0654 /FEMA REP-1, F.2; H.10; K.5.a, b; L.1, 4; Criterion 6.d.1).

Agreed

MS-1 Drill was conducted with Carolina Medical Center on November 10, 2015

Points of Contact:

Extent of Play

NCEM - Mike Cook
mike.cook@ncdps.gov
828/466-5555

NCEM - Karen Hamby
karen.hamby@ncdps.gov
828/466-5555

NCEM - Gregory Weavil
gregory.weavil@ncdps.gov
919/825-2257

Union – Donald Moye'
donald.moye@unioncountync.gov
704/283-3575

Counties

Cleveland - Perry Davis
perry.davis@clevelandcounty.com
704/472-3648

Gaston - Tommy Almond
tommy.almond@gastongov.com
704/866-3350

Charlotte-Mecklenburg – Jeff Caldwell
jcardwell@ci.charlotte.nc.us
828/493-0072