# After Action Report

McGuire Nuclear Station

Radiological Emergency Preparedness Exercise

Exercise Date: August 3, 2021

*October 8, 2021*

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# Executive Summary

On August 3, 2021, the offsite response organizations of the McGuire Nuclear Station 10-mile emergency planning zone participated in a plume exposure pathway exercise. FEMA Region 4 Radiological Emergency Preparedness Program staff evaluated that exercise, which also included out of sequence activities conducted during the week of July 19, 2021. This report outlines that exercise and out of sequence activities.

The purpose of the exercise was to assess the level of state and local preparedness in responding to an incident at the McGuire Nuclear Station. It was conducted in accordance with FEMA policies and guidance concerning the exercise of state and local radiological emergency response plans and procedures. The federal approval of the formal submission of the radiological emergency response procedures for the McGuire Nuclear Station by the state of North Carolina was granted on June 4, 1981, and the qualifying emergency preparedness exercise was conducted on June 19, 1991.

Officials and representatives from participating agencies and organizations demonstrated knowledge of their emergency response plans and procedures, and successfully implemented them during the exercise and out of sequence activities. All jurisdictions met their exercise objectives and successfully demonstrated the corresponding core capabilities identified in Section 2.2 of this report. FEMA staff did not identify any level 1 or level 2 findings during this exercise or the out of sequence activities.

It was apparent that a great deal of training and practice was conducted by the offsite response organizations to successfully demonstrate the ability to protect the health and safety of the public. They provided the necessary support and resources to respond to an incident at the McGuire Nuclear Station.

FEMA wishes to acknowledge the efforts of the many individuals who participated in the exercise and made it a success. The participants demonstrated reasonable assurance despite operating in the SARS-CoV-2/COVID-19 pandemic environment. Despite ongoing real-world response efforts, the professionalism and teamwork of the participants was evident throughout all phases of the exercise.

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# Section 1: Exercise Overview

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|---|---|---|
| Exercise Name | 2021 McGuire Nuclear Station Radiological Emergency Preparedness Exercise | |
| Type of Exercise | Full Scale Exercise | |
| Exercise Date | August 3, 2021 | |
| Out of Sequence Date | July 19 - 22, 2021 | |
| Program | Radiological Emergency Preparedness Program | |
| Mission Area | Response | |
| Scenario Type | Full Participation Plume Phase | |
| Participating Organizations | See Appendix C for the list of participating organizations | |
| Locations | See Appendix D for the extent of play agreement and exercise locations | |
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# Section 2: Exercise Design Summary

## 2.1 Exercise Purpose and Design

FEMA administers the Radiological Emergency Preparedness Program pursuant to the regulations found in Title 44 CFR parts 350-354. CFR 350 codifies 16 planning standards that form the basis for radiological emergency response planning for the licensee, state, local, tribal, and territorial governments impacted by the emergency planning zones established for each nuclear power plant site in the United States. United States Nuclear Regulatory Commission regulations also codify the 16 planning standards for the licensee. 44 CFR 350 sets forth the mechanisms for the formal review and approval of state, local, tribal and territorial government radiological emergency response plans and procedures by FEMA. 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, local, tribal, and territorial 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 incident at a nuclear plant.

The results of this exercise, together with reviews of the radiological emergency response plans and verification of the periodic requirements set forth in NUREG-0654/FEMA-REP-1, Revision 2, dated December 2019, the annual letter of certification, and staff assistance visits, enabled FEMA to provide a statement with the transmission of this final after-action report to the United States Nuclear Regulatory Commission. This statement verifies that the affected state, local, tribal and territorial 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 incident; and (2) capable of being implemented.

## 2.2 Exercise Core Capabilities and Objectives

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 Radiological Emergency Preparedness Program requirements and objectives. The capability targets to be demonstrated were negotiated with the state of North Carolina and risk counties. The core capabilities scheduled for demonstration during this exercise were:

- **Operational Coordination:** Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.
- **Situational Assessment:** Provide all decision makers with decision-relevant information regarding the nature and extent of the hazard, any cascading effects, and the status of the response.
- **Public Information and Warning:** 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, as well as the actions being taken and the assistance being made available, as appropriate.

- **Environmental Response/Health and Safety:** Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities.
- **On-Scene Security, Protection, and Law Enforcement:** 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 response personnel engaged in lifesaving and life-sustaining operations.
- **Critical Transportation:** 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.
- **Mass Care Services:** Provide life-sustaining and human services to the affected population, to include hydration, feeding, sheltering, temporary housing, evacuee support, reunification, and distribution of emergency supplies.
- **Public Health, Healthcare, and Emergency Medical Services:** Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical and behavioral health support, and products to all affected populations.

These core capabilities, when successfully demonstrated, meet the exercise objectives. The objectives for this exercise were as follows:

- **Objective 1:** Emergency Operations Management
- **Objective 2:** Exposure Control
- **Objective 3:** Alert and Notification
- **Objective 4:** Detect, Measure, Sample, and Analyze
- **Objective 5:** Operate

## 2.3 Exercise Scenario

The exercise scenario developed by Duke Energy involved a loss of all offsite power, followed later by a loss of coolant accident, a loss of both diesel generators, and a containment penetration failure. There was a small release of radioactive material below protective action guides, but large enough for field teams to be able to detect the plume up to a few miles downwind.

The exercise began with a cyber-attack that took down the electrical grid and caused a loss of power to the McGuire Nuclear Station and the surrounding area. Both Unit 1 and Unit 2 reactors tripped. The Unit 1 reactor trip resulted in 3 control rods stuck out of the core, while the Unit 2 trip had no mechanical issues. The Unit 1 diesel generator was offline for repairs, which resulted in an Alert emergency classification level Alert. Ninety minutes after the Alert declaration a loss of coolant accident occurred inside the Unit 1 containment which caused a Site Area Emergency declaration. After another 90 minutes the Unit 2 diesel generator failed, and a General Emergency was declared. Duke Energy made a protective action recommendation to evacuate zones B, C, D, L, and M, later followed by zone A (due to a wind shift).

# 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 August 3, 2021, plume exposure pathway exercise and out of sequence activities from July 19-22, 2021.

Each jurisdiction and functional entity are evaluated based on the demonstration of core capabilities, Radiological Emergency Preparedness Program objectives, and capability targets as delineated in the FEMA Radiological Emergency Preparedness Program Manual dated December 2019. Capability targets are listed by number and the demonstration status of those capability targets are indicated using the following terms:

- **Met (M):** The jurisdiction or functional entity performed all activities under the objective/capability target to the level required per the work plan and/or the extent-of-play agreement, with no Level 1 or Level 2 Findings evaluated under that objective/capability target during the current activity and no unresolved prior Level 2 Finding(s).
- **Level 1 Finding (L1):** An observed or identified inadequacy of organizational performance during an assessment activity that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant.
- **Level 2 Finding (L2):** An observed or identified inadequacy of organizational performance during an assessment activity that is not considered, by itself, to adversely impact public health and safety.
- **Plan Issue (P):** An observed or identified inadequacy in the ORO's emergency plan/implementing procedures, rather than in that of the ORO's performance.
- **Not Demonstrated (N):** For a justifiable reason, the jurisdiction or functional entity did not perform assessment activities under the objective/capability target as specified in the extent-of-play agreement.

## 3.2 Summary Results of Exercise Evaluation

The Homeland Security Exercise and Evaluation Program methodology is an analytical process used to assess the demonstration of specific capabilities during an exercise. A capability provides a means to perform one or more capability targets under specified conditions and to specific performance standards. Core capabilities form the foundation of the FEMA Region 4 Radiological Emergency Preparedness Program evaluations. The core capability summaries below provide an overall combined assessment of state and local jurisdictions based upon their collective demonstrated performance as it relates to the specific core capability. Each jurisdiction's standalone capability summaries are provided in part 3 of this section.

- **Operational Coordination:** Key leadership personnel from the participating agencies established and maintained a unified and coordinated operational structure which provided effective and responsive direction and control. The overall decision-making process integrated critical stakeholders, enabling protective actions and subsequent decisions to be made in a timely manner.

- **Situational Assessment:** Decision makers were provided with relevant information regarding assessed radiological and station conditions. This timely information allowed the decision makers to understand the extent of the hazards, the cascading effects, and to make the appropriate protective action decisions.
- **Public Information and Warning:** Alert and notification of the public was made using simulated siren activation and emergency alert messages (primary), followed by National Weather Service messages (secondary), 21 press releases, and three press conferences using the joint information system. Using the joint information system ensured coordinated, prompt, and reliable information was disseminated to the media and public.
- **Environmental Response/Health and Safety:** State personnel assessed radiological and station conditions and made well-reasoned recommendations and decisions. Additionally, Charlotte-Mecklenburg County emergency management staff demonstrated the ability to radiologically monitor and decontaminate evacuees at three new reception centers. The three new locations will replace the single previous location (the University of North Carolina – Charlotte) and enhance the county's ability to protect public health and safety.
- **On-Scene Security, Protection and Law Enforcement:** The ability to ensure a safe and secure environment of an affected community was demonstrated during a multi-agency waterway warning and clearance of Lake Norman/Mountain Island Lake on July 21, 2021, and the establishment of traffic control points in the area surrounding the McGuire Nuclear Station.
- **Critical Transportation:** Administrators and transportation directors from risk counties with schools demonstrated their ability to implement protective actions and safeguard the safety of students, staff, and faculty in the event of a radiological incident.
- **Mass Care:** Charlotte-Mecklenburg County emergency management staff demonstrated the ability to provide services and accommodations for evacuees at the three new congregate care centers.
- **Public Health, Healthcare, and Emergency Medical Services:** Charlotte-Mecklenburg County Emergency Medical Services MEDIC and Atrium Health University personnel demonstrated the ability to provide lifesaving medical treatment during a medical services drill. Personnel with both organizations provided prompt medical treatment, transportation, and medical care to a contaminated, injured patient. Personnel correctly monitored radiological levels, and controlled cross-contamination to ensure patient safety, as well as their own.

## 3.3 Jurisdictional Summary Results of Exercise Evaluation

### 3.3.1 State Jurisdiction

#### 3.3.1.1 State Emergency Operations Center

**Operational Coordination Capability Summary:**

North Carolina state emergency response team members supporting the state emergency operations center successfully demonstrated their ability to respond to a radiological emergency at the McGuire Nuclear Station. The state emergency operations center demonstrated the capability to staff and use capable and redundant methods of communication. Duke Energy made initial notifications, received by the state warning point communication officer, on the Duke Emergency Management Network notification line, followed by phone call and email verification of message receipt. This process ensured dedicated communication links between the McGuire Nuclear Station, state of North Carolina, and the counties. The state warning point communication officers also used the state

online preparedness and tracking application, facsimile machine, and email to receive and disseminate emergency notifications. The state warning point communication officers used the Duke Emergency Management Network phone line to verify the receipt of emergency notification forms. A total of 11 emergency notification forms were received by the warning point, escalating from an Alert classification to a General Emergency.

After receiving the notifications, state warning point communication officers used checklists and guides to assist in notification of key staff, including the state emergency response team members. The state emergency response team participated in-person and virtually and were briefed with every classification escalation. After notifications, the state the state emergency response team used primarily used an internet-based video conference call platform for status and decision calls. Communications were also made using the state online preparedness and resource tracking application and a conference call bridge line to communicate, discuss, track, and verify incoming information received from counties.

Using a 24-hour staffing roster and a series of pre-scripted email messages, state warning point communication officers were able to alert, notify, and mobilize key staff members of the facility activation. During an interview, it was noted the staffing roster and predetermined email distribution list were updated quarterly as team members retire or change positions. Though prepositioned, team members were quickly notified, and the facility was declared operational within minutes of the initial notification. The state warning point watch communication officers noted that all personnel who did not acknowledge the notification would be contacted by cell phone to confirm notification receipt.

The state emergency response team leader gathered information from team members to make informed and appropriate recommendations and decisions. Protective action decisions were based on utility and staff recommendations, along with meteorological conditions. Precautionary actions included closing parks in the 10-mile emergency planning zone, clearing Lake Norman/Mountain Island Lake, and issuing a pet and livestock advisory. Protective action decisions made during the exercise included evacuation of zones A, B, C, D, L, and M, and for emergency workers operating in the 10-mile emergency planning zone to ingest potassium iodide.

The state emergency response team leader and the technical advisor kept the risk and host counties informed of incident status updates and recommendations during frequent decision line video calls. The technical advisor used emergency classification specific checklists to confirm all planned response actions were addressed throughout the exercise. A verbal affirmation was required from the responsible team member for each pertinent item on the checklist. Frequent briefings were conducted in the state emergency operations center kept decision makers informed of incident status, decisions, and actions.

Traffic and access control management was demonstrated by the North Carolina State Highway Patrol officers. They selected pre-determined points and identified corresponding personnel to staff the points. During an interview, the highway patrol officers noted that each traffic control point and its required staffing was identified by location. Each location had a corresponding locational information sheet, which was distributed to the onsite supervisor. A coordinated delegation and appropriate use of resources was demonstrated by coordination with the emergency services lead and the North Carolina State Highway Patrol. The emergency services lead held a discussion on the realistic needs of resources with the highway patrol officers to preserve valuable time and resources. Accurate instructions were relayed from the state emergency operations center law enforcement staff to local channels using a cell phone, with email as a secondary method of communication. When asked about obstacles or impediment reactions, the officers stated local law enforcement would either clear the impediment, request support for clearance of the impediment, or use identified alternate routes.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.4, 2.1, 3.1, 5.4.

**Public Information and Warning Capability Summary:**

Two Emergency Alert System messages were disseminated through the Integrated Public Alert and Warning System in conjunction with siren activation. Both messages were accurate and contained the required elements. The risk counties were responsible for activating the siren system. The state warning point communication officers simulated distribution of the two Emergency Alert System messages. The messages were sent using the Emergency Management Network Emergency Alert System Encoder. This system sent the messages to the radio stations and the public using wireless emergency alerts through the Integrated Public Alert and Warning System. The messages were also faxed to the National Weather Service Greenville-Spartanburg. Once faxed, a state warning point communication officer telephoned the National Weather Service and confirmed the receipt of the Emergency Alert System message. The National Weather Service also activated tone-alert radios as a backup means of notification.

The joint information system concept was successfully established by public information officers representing the state, risk and host counties, and Duke Energy to disseminate accurate, actionable, and timely information to the public and press. The state emergency operations center joint information system team was comprised of the lead public information officer and two assistants. The lead state public information officer communicated for the state on the public information officer conference call bridge line and managed the joint information system virtual press conferences. One assistant was responsible for writing draft joint information system activation state press releases for state emergency response team leader approval. The second assistant monitored the internet-based conference call platform and press conferences. The North Carolina Department of Agriculture and Consumer Services used the exercise to supplement their public information team with additional department members for training purposes.

Alert and notification of public information staff was demonstrated in accordance with plans, procedures, and the extent of play agreement. Pre-positioning was permitted at the state information center and the joint information system was activated in a timely manner. The public information officer conference call bridge line was the primary means of coordination. The line remained open for the duration of the exercise and allowed for efficient coordination of public information, to include review of press releases and press conferences.

Efficient communication among Duke Energy, state, and county public information officers attributed to the successful joint information system demonstration. Press releases were coordinated using a public information officer email distribution list, the public information officer conference call bridge line, and staffing within the North Carolina state emergency operations center. State emergency response team press releases were produced and distributed, the first of which was prior to the joint information system activation. Press releases were clear and accurately described the coordinated protective action decisions.

Regular public information officer conference call bridge line discussions relayed information from decision line calls and allowed the lead public information officer to coordinate press conference information both before and after the briefings. The lead public information officer conducted two virtual press conferences using the internet-based video conference call platform. Both delivered accurate public information and instructions. Media representatives fielded questions using the virtual platform chat tool, which permitted effective moderator management of press questions. Answers provided by spokespersons were informative and consistent with protective action decisions.

The state lead used three guides for pre-press conference caucuses and for conduct of the press conferences. These included a pre-conference checklist, a McGuire Nuclear Station pre-press conference preparation and briefing agenda, and a conference script.

Public inquiry was handled by offsite response organizations at their respective locations. One rumor was addressed by the Duke Energy representative during the first media briefing.

For this core capability the following radiological emergency preparedness capability targets were met: 3.2, 3.3.

#### 3.3.1.2 Western Branch Office

**Operational Coordination Capability Summary:**

The Western Branch Office staff successfully demonstrated the ability to establish and maintain a unified and coordinated operational structure process that integrated all critical stake holders. When activated, the Western Branch Office became the Regional Coordination Center - West, and the team established and maintained communications and coordination with the risk and host counties to support protective action recommendations and decisions to protect the health and safety of the public.

In accordance with the extent of play agreement, Western Branch Office personnel were prepositioned at their office location. The Western Branch Office was notified of the declaration of an Alert via facsimile from Duke Energy. The branch manager immediately contacted the support personnel by email to staff the facility. The branch manager explained that email and text messaging work very well in contacting the personnel, but if unsuccessful, they would directly telephone key personnel.

Primary communication was by an internet-based video conference call platform and the state online preparedness and tracking application. Additional communication systems consisted of a digital phone line, analog phone lines, cellular telephones, a facsimile machine, and an 800-megahertz radio system.

The Western Branch Office was well equipped to support emergency response operations. Workstations were organized and grouped according to branch functional support areas. The facilities, equipment, and communications were effective to support emergency response. The use of the state online preparedness and tracking application system to log resource requests from the counties was effective in tracking each request and associated outcomes. The manager held frequent briefings to keep the staff informed and maintained communications with each of the county's emergency operations centers, the North Carolina state emergency operations center, and the Duke Energy emergency operations facility. This resulted in efficient direction and control throughout the exercise. Staff members were well trained and knowledgeable in the use of their communications systems, backup systems, and their duties.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 3.1.

#### 3.3.1.3 Dose Assessment

**Situational Awareness**

Radiation Protection Section personnel successfully demonstrated the ability to assess plant conditions and field data and provided accurate protective action recommendations to decision makers in response to a radiological incident at the McGuire Nuclear Station.

The state emergency response team coordinator led the dose assessment group from the radiation protection services offices in the state emergency operations center. In accordance with the extent of play agreement, dose assessment personnel were prepositioned at their office location. The team monitored various plant parameters, meteorological data, and field monitoring team data. Dose assessment personnel obtained information from the Duke Energy station data system until loss of all power at McGuire Nuclear Station resulted in limited availability of information. Using available data, the dose assessment team performed calculations for projected radiation dose at downwind locations. When a General Emergency was declared, the projected radiation doses were below protective action guidelines. Therefore, protective action recommendations were based on plant conditions. The radiation protection section coordinator sent protective action recommendations to the radiation protection section director at the state emergency operations center. The radiation protection section director briefed state and county decision makers, presenting protective action recommendations and the reasoning for those recommendations. The dose assessment group used online video conferencing and collaboration software to communicate and share dose projections, protective action recommendations, and field data at varied locations.

When field monitoring team radiation survey and air sample data was available, additional dose projection calculations were performed. The state's field sample-based dose projections were also below protective action guidelines and confirmed that the original protective action recommendations were appropriate.

Initial dose projections following a release of radioactive material indicated that a small amount of radioactive iodine was present in the plume. The radiation protection section director evaluated radioactive iodine air activity calculations and directed field team members to ingest potassium iodide. It was also recommended that potassium iodide be ingested by all emergency workers in the 10-mile emergency planning zone. Since projected thyroid doses offsite were below protective action guides, the radiation protection section director did not recommend that members of the public ingest potassium iodide.

The radiation protection section coordinator was familiar with administrative and turnback radiation dose limits for emergency workers and explained the process for approving an emergency worker to exceed radiation dose limits based on the need for the additional exposure.

For this core capability the following radiological emergency preparedness capability targets were met: 1.4, 2.1, 4.5.

#### 3.3.1.4 Field Monitoring Team Management

**Environmental Response/Health and Safety**

The Radiation Protection Section demonstrated, through the performance of its field team coordinator, the capability to effectively direct field monitoring teams to collect air samples and measure ambient radiation levels in the vicinity of the McGuire Nuclear Station. The demonstration took place at the radiation protection section offices in Raleigh, North Carolina.

In accordance with the extent of play agreement, radiation protection section staff were prepositioned at their office location. Direction and control of field monitoring teams were achieved by radio and cell phone systems. Field team members were provided with a radiation safety briefing by the mobile laboratory coordinator.

As part of the process to dispatch field monitoring teams, the field team coordinator reviewed wind direction, wind speed, and atmospheric stability data contained in emergency notification forms. The field team coordinator then requested field monitoring teams Red and Blue to proceed to their pre-planned designated downwind locations and await further instructions. Approximately one hour after arriving at their respective standby locations, a release of radioactive material was reported by staff at the McGuire Nuclear Station. Field teams were then directed to measure radiation levels while traversing the plume path. Once the plume centerline was determined, each team was directed to collect an air sample at the plume centerline at different downwind distances.

Radiation exposures were reported by field team members as either zero or background. The process for reviewing and approving exposures near or above limits were determined by interview. The field team coordinator explained that he would provide details of the situation to the chief of the radiation protection section, who would coordinate the review/approval with the state emergency response team leader. Following approval of the situation, volunteers would be solicited, risks would be discussed, and the volunteer would sign the form. Thyroid doses to team members were minimized through the administration of potassium iodide, which team members were advised to ingest (simulated) while a release of radioactive material was in progress.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 2.1, 2.2, 3.1, 4.1.

#### 3.3.1.5 Field Monitoring Team Operations (Red Team and Blue Team)

**Environmental Response/Health and Safety Capability Summary**

Field monitoring teams Red and Blue successfully demonstrated activities in support of providing guidance and resources to address radiological hazards associated with a nuclear power plant incident, in support of responder operations and the affected communities.

The field monitoring team members demonstrated the capability to receive alerts and notifications, and to mobilize in support of emergency operations. They activated in accordance with the Fixed Nuclear Facility Emergency Response Position Manual (for) Field Teams. The teams were declared operational in a timely manner following the completion of equipment checks and receipt of a pre-deployment briefing.

The field monitoring team personnel demonstrated the capability to manage their radiation exposures; to use dosimetry equipment and radioprotective drugs (potassium iodide); and to monitor their exposures, including following procedures to obtain authorization to receive emergency exposures in excess of the protective action guidelines. Each team member received personal dosimetry, and read and recorded their doses on a regular basis. They had knowledge of the procedures for ingesting and recording the use of potassium iodide and recorded their (simulated) ingestion of potassium iodide.

Communication processes, systems, and equipment were sufficient to support emergency operations. The field team members established and maintained reliable communications with the field team management coordinator and demonstrated familiarity with their communications

equipment. Prior to deployment, a communications check was performed with the field team coordinator in accordance with the Emergency Response Position Manual.

Field monitoring team personnel made, recorded, and reported measurements of ambient radiation to the field team coordinator, and successfully collected (simulated) radioiodine and particulate samples. Team members demonstrated the capability to perform measurements to assist in the characterization of the plume associated with simulated events at the McGuire Nuclear Station and its impacts. Team members performed an operational check on each radiation survey instrument and obtained a background radiation measurement with each instrument before entering the affected area. Their kits contained supplies and equipment sufficient to support field team operations, and proper personal protective equipment was utilized. Field team personnel used appropriate contamination control techniques, and protected instrumentation from contamination. Packaging and handling of samples was adequate to prevent cross contamination, and sample identification and chain-of-custody procedures were completed to maintain integrity of the samples.

For this core capability the following radiological emergency preparedness capability targets were met: 1.2, 2.2, 3.1, 4.2.

#### 3.3.1.6 Mobile Radiological Laboratory Operations

**Environmental Response/Health and Safety Capability Summary**

The Radiation Protection Section mobile laboratory and sample control team successfully demonstrated the ability to perform radiological analyses to support protective action decision making. The mobile laboratory coordinator reported to and remained in contact with the radiation protection services field team coordinator to stay abreast of current conditions and directions from the state emergency response team. The mobile laboratory coordinator explained that in an actual incident, a notification system would be used to contact team members by rotating through their work, home, and cellular phones until the required positions were staffed.

The mobile laboratory coordinator established communication links between the mobile laboratory, the emergency operations facility, and the field team coordinator. The primary communications system is a video meeting and collaboration software; cellular telephone and radio were used as backup. No communications failures occurred. The mobile laboratory was well equipped with contamination control supplies, various radiation survey meters, a beta counter, high-purity germanium gamma counting system, and appropriate software for performing isotopic analysis. The available equipment was appropriate to enable analyses of radioactivity in environmental, food, and drinking water samples. Prior to use, laboratory personnel performed a calibration check on their high-purity germanium counting system. All calibration sources included documentation that was traceable to the National Institute of Standards and Technology.

The mobile laboratory coordinator briefed field monitoring teams and laboratory personnel on radiation exposure limits and the use of radioprotective drugs, including possible side effects and that ingestion was to occur only if directed. Appropriate direct reading and permanent record dosimetry were issued to team members. Mobile laboratory team members were able to explain their radiation exposure limits and the use of potassium iodide.

A sample courier arrived at the armory with a cooler containing an air sample filter and iodine cartridge from each field monitoring team. The cooler was processed through the sample control station, where chain of custody forms were completed, and the sample media was prepared for counting. An air sample was taken to the mobile laboratory where the air sample was counted on the high-purity germanium gamma spectroscopy system. Analysis information was recorded, reviewed,

and reported to the field team coordinator for forwarding to the state to support protective action decisions.

For this core capability the following radiological emergency preparedness capability targets were met: 1.2, 2.2, 3.1, 4.4.

#### 3.3.1.7 Traffic Control Points

**On-Scene Security, Protection, and Law Enforcement Capability Summary**

Troopers from the North Carolina State Highway Patrol Hazardous Materials Team confirmed their ability to successfully manage implementing traffic and access control and clearing impediments. The emergency preparedness activities and procedures discussed provided reasonable assurance that appropriate protective measures can be taken offsite to protect the troopers and the public in the event of a radiological emergency at McGuire Nuclear Station. The troopers understood how to read their direct reading dosimeters every 30 minutes and how to complete the documentation form. They also understood how and when to ingest potassium iodide, and to only ingest two tablets when directed. Both troopers were aware of the possible need to go to an emergency worker decontamination station at the end of each shift if directed. Upon notification the troopers would respond to the state emergency operations center and establish the operations section for traffic control point and security roadblock activities. At the same time, troopers from local districts would dispatch to each risk county emergency operations center to coordinate local assistance.

For this core capability the following radiological emergency preparedness capability target was met: 5.4.

## 3.4 Joint Operations

### 3.4.1 Joint Information System

**Public Information and Warning Capability Summary:**

Public information staff from the state of North Carolina; the counties of Charlotte-Mecklenburg, Cabarrus, Catawba, Gaston, Iredell, and Lincoln; and Duke Energy virtually coordinated to successfully deliver coordinated, prompt, reliable, and actionable information for the whole community. Led by the public information officer from Charlotte-Mecklenburg and the Duke Energy public information director, a joint information system was successfully demonstrated and relayed accurate and reliable public information.

Alert and notification of the joint information system participants was demonstrated successfully and in accordance with state and county plans and procedures, as well as the extent of play. Following the notification of Alert, an email and recorded voice message was sent to a pre-designated public information officer distribution list consisting of representatives from the state and counties to dial into the public information officer conference call bridge line. From their respective virtual locations, all public information officers were quickly able to establish the joint information system.

Public information staff used laptops, computers, cellular phones, landline conferencing telephones, email, conference call bridge lines, video conference platform, and web-based emergency management information systems to communicate and collaborate in support of emergency operations. A conference call bridge line for exclusive use by public information staff was established following notification of Alert to share incident information and to establish the joint information

system. It successfully established and maintained communication among public information officers for joint information system coordination. An exclusive internet-based video conference call platform used by public information staff was used to conduct press conferences. No communication or system failures were observed. Public information staff had sufficient equipment, maps, displays, supplies, and administrative resources to support emergency operations.

Through the joint information system, the public was provided accurate and timely emergency information and instructions following the activations of the alert and notification system and initial instructional messages. The decision to activate the alert and notification system was coordinated by command staff on the internet-based video conference call platform following notification of Site Area Emergency and General Emergency. The Charlotte-Mecklenburg public information officer, who participated in the command staff's internet-based video call platform used by decision makers, shared information on the public information officer conference call bridge line when decisions were made to activate the alert and notification system and times of activation to aid in the development of accurate and timely follow-up messaging.

Through press releases and press conferences, joint information system members successfully demonstrated the ability to provide emergency information and instructions to the public and media in a timely manner. All participants in the system maintained continuous contact with their home jurisdictions. No impediments to evacuation were relayed to the joint information system to be messaged. Public information staff demonstrated strong collaboration and teamwork in the preparation and delivery of coordinated, prompt, reliable, and actionable information to the public in press releases. Pre-scripted message templates were modified to include accurate precautionary action and protective action decisions made by the command staff. Contents of forthcoming draft press releases were discussed on the public information officer conference call bridge line, shared on the state online preparedness and resource tracking application, and were coordinated, reviewed, and edited by all public information staff prior to approval and release. During reviews of draft releases, staff successfully identified standard pre-script language which required modification to accurately reflect the scenario conditions. The release of approved messages to the media and public was simulated by updating the status of each message within the web-based system and moving the message from a draft board to a separate public information release board.

A total of 21 press releases and five inject messages were developed and disseminated by the joint information system participants. All press releases included essential message elements and accurate emergency information and instructions consistent with the precautionary actions and protective action decision as applicable to each jurisdiction. Rumor control functions were not observed on the virtual platform, but rumors were frequently shared on the public information officer conference call bridge line and validated as true or false among the public information staff before being addressed to the public and press as needed during press conferences.

Following the Alert notification, one joint press conference including the state, counties, and Duke Energy was conducted using an internet-based video call conference call platform. Following General Emergency, Duke Energy conducted a press conference, with the state and counties following shortly afterward with a separate press conference to provide supplemental information and instructions. Each press conference provided accurate information to the press and general public. Prior to each press conference, a pre-press meeting was held on the public information officer conference call bridge line to ensure accurate information was delivered in a cascading manner from the most affected county/state to Duke Energy. Inquiries from press members present on the video conference were referred by the facilitator to the appropriate agency and answered accurately.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 3.1, 3.3.

### 3.4.2 Emergency Operations Facility

**Operational Coordination:**

The North Carolina emergency management liaison and Radiation Protection Section liaisons responding to the emergency operations facility successfully demonstrated the ability to obtain and distribute information to their counterparts at the state emergency operations center. Redundant communication methods were available and used by the liaisons with no communication failures observed. Station status, emergency classification level updates, field team data, and dose projections were relayed to state personnel from the liaisons. This dissemination function provided immediate critical information to the protective action decision makers. In addition, essential information from the state and counties was effectively relayed to Duke Energy, including siren activations, traffic impediments, field team placement, precautionary actions, and protective action decisions. The state liaisons followed applicable procedures and performed transmittal of information efficiently and professionally.

For this core capability the following radiological emergency preparedness capability targets were met: 3.1.

### 3.4.3 Waterway Warning-Lake Norman/Mountain Island Lake

**On-Scene Security, Protection, and Law Enforcement Capability Summary:**

The demonstration for alert, notification, and evacuation of Lake Norman (north of the Cowans Ford Dam) and Mountain Island Lake (south of the Cowans Ford Dam) was successfully demonstrated.

The incident commander established an incident command post at Ramsey Creek Park. Two aviation units provided aerial support. A total of 15 patrol boats units participated in the waterway clearing demonstration. Patrol boats from the participating agencies observed all no wake zones and completed clearance operations in a timely manner. All personnel were well versed on emergency worker dosimetry use and their mission requirements. The officers of this multi-agency task force demonstrated their expertise to warn the public on Lake Norman and Mountain Island Lake. Their knowledge underscored the McGuire Task Force commitment to emergency preparedness and training for potential events at the McGuire Nuclear Station.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 2.2, 3.1, 3.2, 5.4.

## 3.5 Risk Jurisdictions

### 3.5.1 Charlotte-Mecklenburg County

**Operational Coordination Capability Summary:**

Charlotte-Mecklenburg emergency management office and emergency operations center staff members successfully established and maintained a unified structure. The unified structure facilitated communication and coordination among whole community partners and supported the

execution of core capabilities to protect public health and safety in the event of a radiological incident at the McGuire Nuclear Station.

The Charlotte-Mecklenburg emergency operations center was located at the Charlotte Fire Department Headquarters building. The new emergency operations center was state-of-the-art, and thoughtfully considered both in terms of design and functionality. It was comfortable, spacious, and had sufficient supplies and equipment to assist emergency support function and functional area staff. The walls contained multiple displays which provided robust situational awareness across all agencies/organizations represented in the emergency operations center.

Multiple internal and external communications systems were available and used to augment emergency operations. The primary means of communication between Duke Energy and Charlotte-Mecklenburg County was the Duke Emergency Management Network notification line. Once emergency notification forms were received via the network, an internet-based video conference call platform was used by county and state emergency management directors to discuss the forms and make precautionary and protective action decisions. Other communications systems included: commercial landline and cellular telephones; email; a state online preparedness and resource tracking application; and social media platforms. All systems used were operational with no communications failures.

Upon receipt of emergency notification form #1, the incident commander instructed the radiological safety officer to open the emergency operations center and notify and mobilize staff using a mass public warning platform. Staff were pre-positioned in accordance with the extent of play agreement in the building. Upon receipt of the exercise message, staff signed in, were given an exercise identification badge, and began setting up their workstations within their designated emergency support function and/or functional area.

Additionally, the incident commander initiated the first decision line call via an internet-based video conference call platform, with emergency management directors from Cabarrus County, Catawba County, Gaston County, Iredell County, and Lincoln County; the Western Branch Office, and the state of North Carolina. The incident commander conducted a roll call at the beginning of each call to ensure full participation. All directors confirmed their presence for each call. The incident commander read emergency notification form #1 to the directors, made a recommendation for discussion, and asked for concurrence on the decision. This same process was used for each decision line call and ensured concurrence and consistency among response partners.

The decision to order ingestion of potassium iodide for all emergency workers in the 10-mile emergency planning zone was concurred upon via a decision line call following notification of a radiological release. The radiological safety officer issued appropriate dosimetry, potassium iodide, and managed emergency worker exposures according to procedure. Packets of potassium iodide (10-day supply) were pre-distributed to all response agencies within the 10-mile emergency planning zone in Charlotte-Mecklenburg County. Included with the potassium iodide packets were instructions on the administration and risks. Two emergency workers were interviewed, and they understood the use and risks of potassium iodide, and that taking potassium iodide was voluntary. The administration of potassium iodide was simulated.

Following notification of a radiological release, the human services branch representative was interviewed regarding persons with disabilities and access/functional needs. These populations were pre-identified in the Charlotte-Mecklenburg County 10-mile emergency planning zone by the Metrolina Health Care Coalition. The health care coalition consisted of various hospitals, emergency medical services, emergency management, and public health representatives. Identified populations

needing assistance included group homes, day care centers, private schools, Medicare/Medicaid individuals, and individuals that had self-reported and registered with the county. The human services branch representative maintained various databases and lists of these individuals; no gaps in resources were identified.

The Charlotte-Mecklenburg Schools representative, in coordination with the incident commander, implemented precautionary actions for schools. The Charlotte-Mecklenburg Schools representative maintained lists of schools, student/staff numbers, and buses. When the school district superintendent agreed with the decision to dismiss students early, the school superintendents, school transportation supervisors, and parents/guardians were notified via automated school notification systems. The early dismissal was a phased operation beginning at 11:00 a.m. Virtual and home-schooled students would follow protective action decisions for the general public, transients, and employees working inside the 10-mile emergency planning zone.

The establishment of traffic control points was discussed by interview with a Charlotte-Mecklenburg Police Department captain following Site Area Emergency. The captain explained that Charlotte-Mecklenburg Police Department officers were contacted and advised to standby for their traffic control point deployment assignments. The captain established an event radio channel and directed officers to report to the staging area. Sufficient quantities of dosimetry and potassium iodide were maintained by the Charlotte-Mecklenburg Police Department and assigned to each officer. A radiological safety briefing and remedial dosimetry training would be provided to officers at the staging area. Any evacuation route impediments would be identified, and their removal coordinated with the Charlotte Department of Transportation. If rerouting of traffic was required, officers would be notified and re-assigned, as appropriate, and the new route provided to the joint information system for dissemination to the public.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 3.1, 5.4.

**Public Information and Warning Capability Summary:**

Charlotte-Mecklenburg emergency management office public information officers demonstrated the capability to develop and disseminate reliable and timely information to the public and press during a simulated radiological incident at the McGuire Nuclear Station. Methods to alert and notify the public included an outdoor warning system, Emergency Alert System and National Weather Service message broadcasts; press releases; press conferences; and social media campaigns.

The activation of sirens and broadcast of messages were coordinated with the county and state emergency management directors via the decision line. The activation of sirens was coordinated between Charlotte-Mecklenburg communications staff at the headquarters building and the communications center (located in a separate building) and demonstrated in the form of a silent test. When the sirens failed 100%, the radiological safety officer called the Gaston County emergency management director and requested activation of all sirens instead, in accordance with procedures. Gaston County communications officer confirmed the Charlotte-Mecklenburg sirens were successfully activated.

In Charlotte-Mecklenburg County, the joint information system was staffed by public information officers and support staff from Charlotte-Mecklenburg emergency management office, Charlotte-Mecklenburg Police Department, Gaston County Police Department, Charlotte Water, and the town of Cornelius. To facilitate the joint information system, public information officers and staff used a public information officer conference call bridge line, an internet-based video conference call

platform, email, and a state online preparedness and resource tracking application. All systems used were operational with no communications failures.

Once the joint information system was activated, all pre-scripted press releases were tailored and disseminated jointly via the joint information system (except for county-specific releases to include early dismissal of schools and local state of emergency declarations). A total of seven press releases were produced with input from all counties, the state, and Duke Energy prior to release. In addition, two press conferences were conducted. Prior to each press conference, a pre-conference meeting was held to review the press conference template which addressed specifics such as speaking order and presentation of relevant and appropriate information.

Overall, the joint information system allowed for near constant coordination and communication among the counties, state, and Duke Energy. It provided transparency on all public information being shared across the McGuire Nuclear Station 10-mile emergency planning zone to ensure consistency and continuity among local, state, and Duke Energy partners.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 3.2, 3.3.

**On-Scene Security, Protection, and Law Enforcement (Traffic Control Points) Capability Summary:**

The ability to implement traffic and access control along with the clearance of impediments was discussed with patrol and command rank officers of the Charlotte-Mecklenburg Police Department, Cornelius Police Department, Davidson Police Department, and the Huntersville Police Department. Traffic and access control are a unified operation of five different Charlotte-Mecklenburg County municipal law enforcement agencies of the Lake Norman and Mountain Island area. Those agencies are augmented by the North Carolina State Highway Patrol. Communications and equipment to support the operation were sufficient and available 24 hours a day. Traffic diversion equipment included cones, barrels and signage will be supplied by the Charlotte Department of Transportation. Requests for state resources would be made by the county through the emergency operations center to the North Carolina emergency management Western Branch Office. Just in time training and dosimetry for assigned officers would be delivered by the Charlotte Fire Department's emergency management office personnel or by Charlotte-Mecklenburg Police Department supervisors, who would pick up the dosimetry from the emergency management office.

Initially, two officers would be assigned to each traffic control point until the incident was stabilized. Once stabilized, officer assignments would be reduced as applicable. Traffic control point officer assignments include specific instructions for each traffic control point to direct the general population to the University of North Carolina- Charlotte reception center. Officer rest, relief, and rotation would be managed to ensure sufficient resources are available to establish, maintain, and sustain operations for an extended period. Officer assignments include specific instructions for each traffic control point, and the specific reception center for the general population evacuating from that area is included in those instructions. Impediments to evacuation would be cleared immediately by the assigned personnel. If impediment removal was outside of their ability, assistance would be requested and coordinated through the county.

For this core capability the following radiological emergency preparedness capability targets were met: 5.4.

### Environmental Response/Health and Safety (Reception Centers) Capability Summary:

The Charlotte-Mecklenburg County reception and congregate care center personnel demonstrated that facilities, equipment, and procedures were in place and utilized to provide identification, monitoring, and decontamination of evacuees in response to a radiological emergency at McGuire Nuclear Station. This capability was successfully demonstrated at the Butler High School, Mallard Creek High School, and Rocky River High School sites. Traffic control procedures were in place for law enforcement personnel to direct evacuating traffic from the highway to reception and care center locations. The setup and traffic flow within the three reception and care center locations was clearly designated by signage, route markings, and personnel directing evacuees to different functional stations. Contamination control supplies, protective clothing, and use of signage, mops, floor coverings, stanchions, and barrier tape were sufficient to minimize contamination.

The responders were given a radiological briefing prior to the beginning of the demonstrations. Permanent record dosimetry, direct reading dosimetry, and potassium iodide were distributed to all responders. Personnel demonstrated appropriate management of radiation exposure. When interviewed, workers demonstrated that they understood radiation exposure limits, intervals for reading dosimeters, instructions for recording values, and had a basic knowledge on the use of potassium iodide. Direct reading dosimeters were within current leak testing dates and handheld radiation survey meters were within current calibration dates. Handheld survey meters and portal monitors were checked for proper operation using an appropriate source.

At the entrance to the facilities, evacuees were given written and verbal instructions and directed to a parking area. Vehicles were given a quick smear contamination survey, then parked until time allowed for more extensive contamination monitoring. There was adequate space to park the number of vehicles expected at the three locations. Contaminated vehicles were wrapped with a thick cellophane wrap if a survey indicated contamination above the action levels or if an occupant was contaminated. Each vehicle was given a number to aid in identification if the occupants were determined to be contaminated. Contaminated vehicles were parked in the same lots as the clean vehicles with an empty space between the vehicles.

Route markings and traffic control personnel assisted evacuees to an initial monitoring area where they would be monitored for contamination using a portal monitor. Persons with companion or service animals were directed to the animal monitoring and decontamination area. Decontamination of animals could be performed by hand or through a shower system with the animal crated. Animals that were not contaminated were designated with a collar marked as clean. Animals were designated with unique identifiers that matched them to the owners. Crates and kennel spaces were available to house companion animals.

Six portal monitors were set up at each location to demonstrate initial evacuee monitoring. A minimum of six simulated evacuees were processed through the portal monitors. Based on the average per person time to process the six evacuees through portal monitors, the Butler High School location would need an additional portal monitor to process the estimated evacuee population within 12 hours. An additional portal monitor was on site and could be relocated to initial evacuee monitoring so the monitoring goal would be met. Six portal monitors were sufficient to process the expected number of evacuees for the Rocky River High School and the Mallard Creek High School locations.

Individuals who did not alarm the portal monitor were issued a green wristband indicating they were not contaminated and were directed to the congregate care registration area. Contaminated evacuees were directed to separate male or female locker rooms for a more extensive contamination survey and decontamination. There was an adequate number of personnel available to perform monitoring and decontamination of evacuees. Small areas of contamination were identified based on specific areas of the person that alarmed the portal monitor detectors. Localized contamination was removed using disposable wipes. Overall contamination was removed by showering or larger area cleaning. Modesty clothing was available for evacuees who had been decontaminated.

Following decontamination, the evacuees were monitored by portal monitors in the individual locker rooms. If clean, evacuees were given a green wristband to indicate that they were not contaminated. Bags for personal belongings included a tear-off wristband with a numbered label matching the numbered label on the bag, providing evacuees with an immediate matching identification for belongings. Contaminated waste was disposed of in large bags and stored in a specified room to prevent increased background radiation levels near portal monitors and survey equipment. The decontamination group leader would determine if evacuees who could not be adequately decontaminated would require follow-up medical attention at a designated hospital.

For this core capability the following radiological emergency preparedness capability targets were met: 5.1.

### Mass Care (Shelters) Capability Summary:

The Charlotte-Mecklenburg county reception and congregate care center personnel demonstrated that facilities, equipment, and procedures were in place and utilized to provide temporary shelter, congregate care, and registration of evacuees in response to a radiological emergency at McGuire Nuclear Station. This capability was successfully demonstrated at the Butler High School, Mallard Creek High School, and Rocky River High School sites. The Charlotte Metro American Red Cross Chapter staff, volunteers, and county agencies were responsible for the registration and care of evacuees. Once the congregate care facilities reached 75 percent, there were plans in place to open and staff additional shelters. Evacuees with a green wristband were registered using the Red Cross Shelter Dormitory Registration Form, escorted to the dormitory area, and given information on services available at the shelter including feeding, medical response, and mental health services. Potassium iodide tablets and appropriate instructions were made available to evacuees. Staff members maintained appropriate record keeping of the distribution of potassium iodide for the general public. The facilities had sufficient supplies of forms, cots, bedding, and comfort kits for evacuees.

For this core capability the following radiological emergency preparedness capability targets were met: 5.1.

### Public Health, Healthcare, and Emergency Medical Services Capability Summary:

#### MEDIC Emergency Medical Services

The Charlotte-Mecklenburg Emergency Medical Services Agency, known as MEDIC, personnel successfully demonstrated the capability to provide medical transport and treatment services to a contaminated, injured individual as part of a medical services drill for the McGuire Nuclear Station.

The emergency medical personnel (a supervisor and two technicians) were pre-positioned at MEDIC Headquarters in accordance with the extent of play and therefore were not notified and mobilized in accordance with the standard operating guide. Sufficient medical supplies, including an emergency worker kit containing dosimetry, monitoring instruments, and potassium iodide tablets, were available. Each MEDIC supervisor has been issued an emergency worker kit, and upon arrival, on-scene staff issues each technician the appropriate dosimetry for exposure control and instruments to monitor the potentially contaminated individual. The supervisor provided just-in-time training to the technicians on the use of their dosimetry and monitoring instruments, as well as a radiological safety briefing describing their administrative limits for exposure control.

The lead controller read a scripted scenario aloud to the supervisor and technicians. This started the drill and prompted the technicians to respond and begin assessing the situation. Based on information received via the scripted scenario, both technicians donned personal protective equipment. Once dressed in personal protective equipment, the technicians approached the individuals, asked questions, and began physically assessing the individual for injuries. While one technician addressed the injuries, the other began monitoring the front of the individual working from the face down to the tops of the feet in a "z" pattern. Contamination levels were measured on the individual's right lower leg as 2,500-2,750 counts per minute. The individual's back side was monitored in the same manner.

The supervisor notified the charge nurse at Atrium Health University City Hospital via radio that a contaminated, injured individual was being treated and would be transported shortly to the hospital for further medical treatment and decontamination. The supervisor regularly asked the technicians to read their dosimeters and report their readings back for recordkeeping and reporting. Additionally, the technicians practiced sound monitoring techniques which prevented the potential spread or cross contamination of the individual and/or technicians.

The contaminated, injured individual was placed on a covered stretcher and transported to the hospital. Upon arrival at the hospital the supervisor and technicians confirmed the individual's previously reported injuries and contamination levels. The individual was transferred to hospital personnel waiting outside the emergency department entrance. Following the transfer, the supervisor monitored one of the technicians for contamination. The technician was not contaminated and proceeded to remove the personal protective equipment in accordance with the steps outlined in the standard operating guide. Only one technician demonstrated doffing for evaluative purposes.

### Atrium Health University City Hospital

Atrium Health University City Hospital personnel successfully demonstrated the ability to set up, activate, and operate a radiological emergency area for treatment of a contaminated, injured individual. They also demonstrated the ability to monitor and decontaminate the individual, as well as their own personnel and equipment.

The charge nurse received notification by telephone and MEDIC radio that a contaminated, injured individual was being prepared for transport by ambulance and would be arriving in about 25 minutes. Contamination levels were measured on the individual's right lower leg as 2,500-2,750 counts per minute. After arriving at the emergency department entrance, the contaminated individual was transferred from the ambulance stretcher to the hospital stretcher, moved across the ambulance bay floor (covered in plastic), and then into the radiological emergency area. Access to this area was controlled by step-off pads located at each access door. Adequate supplies such as

coveralls, booties, disposable gloves, and absorbent pads were available. A tank for the collection of liquid radioactive waste was available, if needed.

After the injured individual was moved into the radiological emergency area, total body radiation monitoring with a count rate detector was conducted head to foot. All individuals in the radiological emergency area who were engaged in radiation monitoring and decontamination activities wore personal protective equipment. In addition to the nursing staff, a hospital physician was also a member of the team.

Contamination levels of 2,500-2,750 counts per minute were found on the individual's lower right leg (including the wound site). One of the nursing staff collected a sample of the skin contamination by swabbing the area near the wound. Decontamination of the individual's leg was conducted by using baby wipes. After a wipe in one direction was completed, the wipe (and the individual's outer gloves) was discarded into a radioactive waste drum located nearby. After repeating this procedure several times, the leg area was re-monitored, and the radiation level was noted as 1,100 counts per minute. A second decontamination attempt resulted in radiation levels ranging from 275-285 counts per minute, which was less than the 300 counts per minute acceptance criterion identified in the hospital's radiation procedures.

The contaminated, injured individual was released for further treatment. Doffing of personal protective equipment was demonstrated by one individual, followed by contamination monitoring conducted by radiology personnel. Cleanup of the radiological emergency area and removal of radioactive waste would be conducted by personnel from the McGuire Nuclear Station, per prior arrangement.

For this core capability the following radiological emergency preparedness capability target was met: 5.3.

### 3.5.2 Catawba County

**Operational Coordination Capability Summary:**

The Catawba County emergency operations center staff established and maintained a unified and coordinated operational structure and process that appropriately integrated all critical stakeholders and supported the execution of core capabilities. Staff and leadership assigned to the Catawba County emergency operations center demonstrated the ability to alert, notify, and mobilize their response organizations to staff facilities in support of emergency operations.

The Catawba County warning point communications center was notified on the Duke Emergency Management Network dedicated notification line that an Alert had been declared at the McGuire Nuclear Station due to the loss of a power source at the plant. In response to this situation, the Catawba County emergency management director activated the emergency operations center. The director used an automated system designed to alert individuals and businesses through pre-registered telephone numbers and email addresses to notify personnel to report for duty. Staff members were pre-positioned in anticipation of the exercise as per the extent of play and were at their duty stations within minutes, allowing the facility to be declared operational.

The director conducted an initial briefing to the staff which covered the McGuire Nuclear Station status, safety concerns, and emergency operations center protocols. Additional staff briefings/round tables were conducted hourly and as situations warranted. Personnel were encouraged to share information relating to their agency functions. Staff schedules were to be adjusted and additional staff were to be notified if a need for 24-hour operations developed.

The emergency operations center was well equipped with printers, monitors, office machines, appropriate furniture, and office supplies. The facility was also equipped with wall mounted televisions/monitors.

Primary communications with other counties and the state of North Carolina was by an internet-based video conference call platform decision line. Other communications equipment used in the emergency operations center included commercial telephones (landlines), cellular phones, facsimile machines, internet-capable computers, and 800-megahertz radios All communications systems were used daily, so there was no need for regularly scheduled functionality tests. The staff members demonstrated good familiarity with all the communication equipment and used it effectively. There were no communications failures noted and all messaging was transmitted clearly.

The director and the emergency operations center incident commander provided effective direction and control, and kept the emergency operations center staff informed, up to date, and on task through their guidance and timely briefings. They participated in internet-based video conference call platform meetings with risk and host counties and the state of North Carolina on the decision line to coordinate and facilitate timely precautionary and protective action decisions; siren activations; Emergency Alert System messages and activation; and National Weather Service radio activation. General Message Form (ICS 213) was used to document response activities.

There were no schools, daycare centers, healthcare facilities, hospitals, or nursing homes within the Catawba County portion of the McGuire Nuclear Station 10-mile emergency planning zone. The Catawba County Department of Social Services identified 60 individuals within the county portion of the 10-mile emergency planning zone who had registered for their text alert system. The department of social services director demonstrated understanding of the methodologies used to identify and assist individuals with access and functional needs. There were plans in place to keep students who attended schools outside the emergency planning zone but lived in the emergency planning zone to be kept at school until a parent or guardian could pick the student up.

In an interview with the emergency operations center radiological officer, Catawba County plans and procedures were discussed on the decision-making process and the coordination used to ensure an exposure control system was in place for emergency workers. This included the use of personal dosimetry, potassium iodide, and information recording forms. The radiological officer discussed dose limits and authorization to exceed those limits. The radiological officer also discussed the coordination that took place with other agencies when the decision was made to have emergency workers in the 10-mile emergency planning zone ingest potassium iodide.

The radiological officer presented documentation showing adequate quantities of direct reading dosimeters, personal record dosimeters, and potassium iodide maintained by Catawba County for emergency workers. The radiological officer stated that dosimeters and briefings would be provided at the staging area located at Sherrills Ford-Terrell Fire Department, which also would serve as the emergency worker monitoring and decontamination center.

The operations section chief coordinated with the law enforcement personnel in the emergency operations center to review resources to establish traffic and access control points. An impediment to the evacuation route was addressed. The staff discussed resources to clear the impediment and which roads would be best to direct evacuation traffic around the blockage. The staff also discussed additional traffic control points necessary to implement the new route. The public information officer developed a press release with updated information to release to the public concerning the new routes.

Precautionary actions were recommended to clear waterways; close parks; relocate students in Charlotte-Mecklenburg and Lincoln Counties; shelter livestock and pets; and direct emergency workers in the emergency planning zone to ingest potassium iodide. Response agencies within the emergency operations center contacted field personnel and provided the notice. Catawba County emergency management maintains an adequate supply of potassium iodide.
A protective action decision was reached via the decision line to evacuate zones A, B, C, D, L, and M. No portion of Catawba County was affected. No special facilities were located within the Catawba County portion of the emergency planning zone.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 3.1, 5.4.

**Public Information and Warning Capability Summary:**

Per plans and procedures, Catawba County officials do not compose Emergency Alert System messages for release to the public, nor do they activate sirens as part of the Alert and Notification System. The Catawba County director and the emergency operations center director and incident commander participated in conference calls on the internet-based video conference call platform decision line when protective action decisions were discussed. Once concurrence had been reached regarding Emergency Alert System messages and sirens activation times, staff from Charlotte-Mecklenburg County activated sirens and the Emergency Alert System and National Weather System alert radios were activated by state personnel.

During the exercise, staff working with the Catawba County public information officer drafted and released several press releases that provided county information consistent with the protective action decisions. The subject of these press releases included: activation of the emergency operations center; notification of a state of emergency declaration for Catawba County; an advisory notice about a serious vehicle crash requiring the diversion of traffic; and an advisory notice alerting the access and functional needs population with a telephone number to call should they require evacuation or transportation assistance. Messaging was crafted in clear, concise, and accessible language, and was approved by the command staff prior to being released. Several press briefings were conducted, and no rumor trends were noted during the exercise.

For this core capability the following radiological emergency preparedness capability targets were met: 3.2, 3.3.

**On-Scene Security, Protection, and Law Enforcement (Traffic Control Points) Capability Summary:**

Catawba County Sheriff's Office deputies demonstrated the capability to select, establish, and staff traffic and access control points and to remove impediments to the flow of evacuation traffic. The deputies understood that the purpose of establishing traffic control points and security roadblocks at 25 pre-designated locations within the county was to ensure unimpeded traffic flow to the extent possible and to guide evacuees to the reception and congregate care center at Mill Creek Middle

School. The deputies stated that if they needed assistance to staff the control points, they would call upon resources via mutual aid agreements with other law enforcement agencies. Arrangements were in place with local towing companies to remove traffic impediments. When asked about re-entry of individuals to an evacuated area, they stated that unless a very compelling reason was offered such as evacuation of a relative or friend who had no transportation, they would do their best to prevent re-entry.

Deputies were issued simulated permanent record dosimeters, simulated potassium iodide packets, and a 0-20R direct reading dosimeter. They were knowledgeable of the call-in limit of 1 rem, the turnback limit of 2.5 rem, and the need to notify their supervisor when either limit was exceeded. The deputies understood that the purpose of taking potassium iodide (only when authorized by their supervisor to do so) was to protect the thyroid gland from excessive radioactive iodine exposure. They also understood that at the conclusion of their work assignment, they would report for to the Sherrills Ford Fire and Rescue Station #2 for monitoring and decontamination, and to turn in their dosimetry.

For this core capability the following radiological emergency preparedness capability targets were met: 5.4.

### 3.5.3 Gaston County

**Operational Coordination Capability Summary:**

Personnel from Gaston County emergency management and other agencies staffing the emergency operations center demonstrated the ability to direct and coordinate the response to a radiological incident at the McGuire Nuclear Station.

The emergency management director and deputy director provided overall direction and control in a timely manner throughout the exercise. Following the Alert declaration, emergency management leaders and staff closely followed the situation, obtaining information from Duke Energy and the state. As conditions later started to deteriorate, key personnel from other agencies were informed of the situation. Following the Site Area Emergency declaration, the director ordered the activation of the emergency operations center. Personnel assigned to the emergency operations center were alerted and notified to respond via an automated mass notification system.

Once activated, the deputy director assumed the role of emergency operations center manager while the director continued to provide overall guidance, keeping everyone focused on what their response would be to an actual incident at the McGuire Nuclear Station given the situation at hand. The critical thinking of the director and staff applied a healthy dose of realism to the demonstration and fostered critical conversations among staff members. Emergency management leadership participated in all internet-based video conference call decision line meetings and made sound decisions regarding the health and safety of the public and emergency workers.

Recent renovations to the emergency operations center allowed information from several sources to be displayed for all staff to see and enabled easy collaboration among the representatives from all participating agencies. Multiple communications systems were available and worked without failure. Equipment and supplies were sufficient to support the emergency response.

While no precautionary or protective actions for schools were necessary since they were not in session, extensive discussions were held regarding when schools would be notified, the time necessary to implement any relocations, and the consequences of an early dismissal. Staff were also prepared to assist members of the public with disabilities or access/functional needs if it later became necessary. A representative from Gaston County Schools discussed the capability to implement protective actions and provide transportation for the public schools located within the 10-mile emergency planning zone. Sufficient buses and drivers would be available to provide transportation for students and staff in the event relocation would be necessary, and primary and backup communications systems would be readily available. Notification to parents and guardians of any relocation would be conducted using a mass notification system

Agency representative were knowledgeable regarding their agencies' roles in the response and described their procedures for traffic control, waterway warning, reception and congregate care center activation, and other response activities. Emergency management leadership and agency representatives were familiar with emergency worker administrative dose limits, use of dosimetry and potassium iodide, and the procedure for authorizing doses exceeding administrative limits. There were sufficient procedures, dosimeters, and potassium iodide supplies to manage radiological exposure to emergency workers.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 3.1, 5.4.

**Public Information and Warning Capability Summary:**

Gaston County personnel successfully provided accurate emergency information and instructions to the public and the media in a timely manner. The primary means of alerting the public was the fixed siren system, and the primary means of notifying the public was the Emergency Alert System. For each Emergency Alert System message broadcast, a similar message was also disseminated by the National Weather Service.

Charlotte-Mecklenburg County held the primary responsibility to activate all the sirens in the emergency planning zone. When requested by Charlotte-Mecklenburg following a failure to sound sirens, Gaston County staff sounded all sirens from the console in their communications center. When results showed a siren in Gaston County failed to sound, backup route alerting was implemented (simulated).

The decision to activate sirens along with associated messaging was a joint effort involving decision makers from the affected counties and the state. The state held the responsibility to send the Emergency Alert System messages and coordinate messaging with the National Weather Service.

The joint information system was activated using a video conferencing software product that allowed representatives from the counties, state, and Duke Energy to participate in press conferences in a virtual manner. A public information conference call bridge line was also established for use by state and county public information officers to allow continuous contact with each other. There were seven press releases generated and distributed to the media and there were three press conferences using a public information officer internet-based video conference call platform. A call-in feature was accomplished in an effective and efficient manner that allowed the media to ask question in real time during the press conference.

Public inquiry and social media positions were staffed by Gaston County personnel. By interview, rumors would be conveyed to the joint information system and be addressed accordingly in media briefings.

For this core capability the following radiological emergency preparedness capability targets were met: 3.2, 3.3.

**On-Scene Security, Protection, and Law Enforcement (Traffic Control Points) Capability Summary:**

The Gaston County Police Department demonstrated law enforcement protective operations for people and communities located within the affected areas, through a traffic control point interview. Gaston County was responsible for 16 traffic control points if an incident at McGuire Nuclear Station resulted in an evacuation. premade emergency worker kits for each traffic control point included dosimetry, potassium iodide, equipment lists, instructions, and records. Dependent upon the intersection or roadway, security roadblock equipment would be available in the response vehicle or would be delivered to the officers.

The officer was knowledgeable of the use of dosimetry, exposure limits, potassium iodide authorization, and the monitoring and decontamination location. Multiple communication systems were available for contact with the emergency operations center, who would provide release data, plant status updates, impediment information, and potassium iodide authorization. The Gaston County Police Department officer successfully demonstrated the ability to safely establish, staff, and maintain traffic control points in support of a radiological emergency while maintaining personal safety from radiation hazards.

For this core capability the following radiological emergency preparedness capability targets were met: 5.4.

### 3.5.4 Iredell County

**Operational Coordination Capability Summary:**

Iredell County emergency management agency personnel and staff from county agencies demonstrated the ability to establish and maintain a unified and coordinated operational structure and process that appropriately integrated all critical stakeholders. The emergency management director, operations chief, and the emergency operations center staff established and maintained communications and coordination with the other counties and the state and made protective action decisions to protect county residents. County staff were prepositioned in accordance with the extent of play that allowed them to be in position at the emergency operations center. The emergency management director integrated emergency information received from Duke Energy, state of North Carolina, and risk and host counties before recommending any decisions that needed to go to the county chairman. Briefings were provided to the emergency operations center staff at frequent intervals, ensuring they were kept involved and up to date throughout the exercise.

The director and the operations chief maintained direction and control throughout the exercise. They ensured county agencies were kept informed of changes in plant status and took proactive actions to protect the residents. The county commissioner actively participated in the decision-making process throughout the exercise. When the protective action decision was made to the evacuation zone A in Iredell County, the operations section chief ensured that traffic control points were in place and the director confirmed that potassium iodide was not necessary for the residents. They coordinated with county public health personnel to ensure potassium iodide would be available at

the reception centers for evacuees. The director and operations chief coordinated with emergency medical services personnel, school officials, and transportation officials concerning the movement of residents with access and/or functional needs. Schools were not in session for this exercise however, school protective actions were discussed with the response staff. They also coordinated waterway warning with law enforcement. The operations chief was present on all decision calls and concurred with the leadership group on protective action decisions; siren activations; Emergency Alert System messages; evacuation of zones in the 10-mile emergency planning zone; and potassium iodide to ingest by emergency workers. They also maintained situational awareness throughout the event with frequent briefings and feedback from the staff. The director also kept staff inform through situational status reports after changes at the plant.

The radiological officer demonstrated control of radiological exposure for emergency workers within the emergency planning zone. If any emergency worker were to exceed the established dose limits, they would brief their supervisor or the radiological officer to obtain permission to exceed those doses, if need be. If any emergency workers were dispatched to staff traffic control points, they would be briefed on actions to take if an emergency worker or member of the public needed to re-enter the emergency planning zone. Also, all emergency workers or members of the public requiring re-entry would be briefed at the staging area regarding entering and exiting the 10-mile emergency planning zone, as well as the requirement to wear the proper dosimetry. Potassium iodide for emergency workers was stored at the emergency operations center and would have been dispensed along with the dosimetry upon dispatch of emergency workers.

There were enough dosimetry kits and survey meters stored at the Iredell County emergency operations center to supply all emergency workers. The kits included potassium iodide tablets. All radiological equipment was previously evaluated in a staff assistance visit earlier this year. The radiological officer provided a thorough radiological safety briefing to the emergency workers dispatched to a simulated staging area. It covered all the needed points, to include exposure rates and dose amounts, and how to respond to them. The radiological officer stated that any emergency worker requiring re-entry to the 10-mile emergency planning zone would be allowed to do so if their mission required it and permission was obtained.

The Duke Emergency Management Network notification line was used for initial notifications, and an internet-based video conference call platform was used for status and decision discussions with the state emergency operations center, the Western Branch Office, other counties, and Duke Energy. Commercial telephone and a mobile radio system served as backup with other agencies. All means of communication used during the exercise functioned with no failures noted. Amateur Radio Emergency Services radio operators were in the emergency operations center and maintained communication as well.

During the exercise the Iredell-Statesville School Safety and Compliance Officers demonstrated through interview that they were extremely knowledgeable of the district's plans and procedures if the event required conducting critical transportation activities. The district's personnel discussed the coordination efforts, resource requirements, and logistical and operational requirements needed to implement a school relocation or evacuation. The Iredell-Statesville School District would have its own buses to move students and could use resources from outside the district if needed. The school representative discussed that following the movement of students, teachers, and staff, the buses could be used to assist in the evacuation of individuals within the affected zone. This request would be sent through the emergency operations center to the school liaison to coordinate with the school transportation department on the number of resources and routes required for the evacuation of persons in the identified zones.

It was noted during the interview that the Iredell-Statesville School District develops and posts status information on a communication system which allows the district to provide notification to all households within the school's database of evacuations, school closures, or events specific to that school. The information release would also be shared with the Iredell County public information officer for posting to the state's electronic incident management system.

The Iredell County Sheriff's Office deputy in the emergency operations center was interviewed regarding the traffic and access control during this exercise. He explained traffic control points would be established to support evacuation of the 10-mile emergency planning zone. The county had adequate personnel, equipment, dosimetry, and vehicles to be dispatched to the pre-designated traffic control points that would have been activated. Traffic control points were not required to be established in Iredell County. If personnel had been dispatched, they would have received a briefing and dosimetry at the staging area. The Iredell County Sheriff's Office deputies simulated actions to clear waterways in their jurisdiction and within the 10-mile emergency planning zone after being notified. If an impediment occurred at any traffic control point, the law enforcement representative stated the officers on scene would handle any minor impediments but call for assistance from their supervisor for larger problems, who would work with the county on this matter.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 3.1, 5.4.

**Public Information and Warning Capability Summary:**

The Iredell County public information officer and staff successfully demonstrated their ability to conduct emergency public information and warning in response to a radiological emergency at McGuire Nuclear Station. All information was consistent with protective action decisions and provided in a timely manner to the public.

Upon notification of an Alert level at McGuire Nuclear Station, the public information officer was notified through the agency-dedicated cell phone and reported to the public information workroom within the emergency operations center. A test of the phone system, computers, and monitors confirmed all the systems were operable. By being in the emergency operations center the public information officer was able to provide more timely input to the joint information system, after approval by the emergency management director. Within the public information workroom, a staff of four managed and monitored the public information conference call bridge line, posted information to the state online preparedness and resource tracking application, press conferences input, and the public inquiry/rumor control line.

During the emergency event at McGuire Nuclear Station, two separate press briefings were conducted from the briefing room at Duke Energy and monitored within the Iredell County public information room. The two briefings allowed local county public information officers to gather any updates and provide input on behalf of the county as needed. Although the public inquiry/rumor control line was active and staffed within the public information workroom, no calls or trends were noted.

For this core capability the following radiological emergency preparedness capability targets were met: 3.2, 3.3.

**On-Scene Security, Protection, and Law Enforcement (Traffic Control Points) Capability Summary:**

Iredell County Sheriff's Office deputies successfully demonstrated their knowledge and ability to set up and maintain traffic control points for the evacuation of portions of Iredell County around the McGuire Nuclear Station. The two deputies interviewed were aware of how all deputies in various parts of the county were notified to set up the traffic control points, the time it would take, and how to obtain additional resources, if needed. Communications equipment, dosimetry, and potassium iodide were available for deputies, and they were knowledgeable on how and when to take potassium iodide, read their dosimeters, and record the readings.

Traffic cones were carried in each vehicle, and the deputies described how the control points would be normally be set up. They knew to advise the Iredell County emergency operations center of any traffic impediments for re-routing of traffic, and who to contact for the removal of vehicles, downed electrical wires, trees, and debris.

For this core capability the following radiological emergency preparedness capability target was met: 5.4.

### 3.5.5 Lincoln County

**Operational Coordination Capability Summary:**

Lincoln County leadership and emergency management staff successfully demonstrated the ability to respond to a radiological emergency at the McGuire Nuclear Station and ensure the safety of the general population and county emergency workers. A modified emergency operations center staffing plan was implemented to provide additional measures of health and safety during the current COVID-19 public health emergency. The plan reduced the number of staff participating in person and leveraged a variety of computer technologies to allow other staff members to participate virtually, which was projected on a large video screen visible to all. A second shift, 24-hour schedule was created and discussed.

The emergency operations center was sufficient to support emergency response operations for an extended length of time. The secure facility had adequate space, office furnishings, lighting, ventilation, and restrooms available.

Procedures to alert and notify personnel were successfully demonstrated. Many exercise participants were pre-positioned in the area in accordance with the extent of play agreement and reported to duty stations upon receipt of an automated notification system message. The Lincoln County communications coordinator demonstrated how the mass notification system was pre-loaded to ensure timely notifications to notify and activate the emergency operations center staff by providing messages to their home and work phones, cell phones, text, and email addresses. As a result, all essential positions were rapidly filled.

The initial notification of an Alert declaration at the McGuire Nuclear Station was received at the Lincoln County warning point via the Duke Energy Emergency Network notification line. The emergency notification form was completed by the warning point operator, with a duplicate of the form received simultaneously in the emergency operations center via email to the emergency management coordinator. Since the dedicated Duke Energy line is a secure system, no further authentication was required.

Most of the emergency operations center staff representatives served as decision makers for the agencies they represented or as a liaison to their agency's leaders. In some instances, particularly with respect to the public information staff, they were recruited from other agencies of county government, but had been cross trained to serve the public information officer function.

Given the compact size of the emergency operations center space, and operating under pandemic restrictions, some staff operated from remote locations. All were well integrated into emergency operations via a video and audio link displayed, as needed, on a large screen in the emergency operations center.

Emergency management command staff worked effectively together to gather emergency information after each notification of increase in emergency conditions at the plant. Information was analyzed and presented to the staff during the periodic emergency operations center briefings. Briefings kept the staff informed of emergency conditions and station status and included updates from the agencies of their current priorities, activities, and any unmet resource needs.

The emergency operations center had redundant communication systems, to include the Duke Emergency Management Network, which provided initial emergency notifications; computer internet access; email; commercial land lines; cell phones; and other handheld electronic devices. Backup communications also included facsimile machines, 800 megahertz radios, numerous handheld radios, Amateur Civil Emergency Services radio support and an internet hotspot booster. Subsequent notifications were received directly to a communications section within the emergency operations center. All systems worked without interruption.

A variety of maps, large graphic displays, and monitors were used to support operations in the emergency operations center and adjoining workrooms. The county electronic incident management system was used to document and share Lincoln County-specific information via online electronic message boards created and used by all participating agencies.

The Lincoln County emergency management coordinator successfully accomplished direction and control and made timely decisions. Upon receipt of each emergency notification message, a staff briefing was conducted followed by a summary status update by the McGuire Nuclear Station liaison and all participants. The coordinator ensured all response activities were coordinated among appropriate agencies as authorized in a timely manner, with a constant public safety emphasis. Throughout the exercise, the director, coordinator, and commissioner participated in all decision line conference calls and discussed decisions with appropriate staff. Based on available information from the McGuire Nuclear Station liaison and recommended state radiological data, the director provided Lincoln County concurrence for all protective recommendations and media messaging authorized by the commissioner. Overall, the staff demonstrated they were very knowledgeable of their roles/responsibilities and subject matter expertise, which enabled the entire Lincoln County team to demonstrate their experienced leadership throughout the exercise.

Potassium iodide was stored at the Lincoln County Department of Health and would have been transported by the county sheriff's office. The emergency management fire and rescue officer described methods for equipping emergency workers with appropriate potassium iodide, and dosimetry equipment. Agency representatives were knowledgeable of appropriate dosimetry, potassium iodide, and radiological protection procedures. A representative from the Lincoln County Health Department explained how potassium iodide would be available to the general public residing within the 10-mile emergency planning zone at the reception centers. Additional inventory is maintained at the health department in a climate-controlled area.

Emergency operations center staff effectively demonstrated their ability to provide transportation and implement protective actions for people with disabilities and those with access and functional needs, including schools within their area of the 10-mile emergency planning zone. A current list of access and functional needs population was available for review by the evaluator.

The Lincoln County school's coordinator discussed school relocation and methods for parent notification. It was explained that a precautionary early dismissal of students would have been implemented at site area emergency. The Lincoln County School District transportation director successfully demonstrated the districts capability to protect and transport students and school staff in the event of a radiological emergency at the McGuire Nuclear Station. The transportation director discussed the logic behind early dismissal and the timing of such efforts considering the requirements and circumstances at each school. There were sufficient buses available for all activities.

Through interview with a Lincoln County Sheriff's deputy the capability to establish effective traffic and access control, and to respond appropriately and safely to impediments on evacuation routes within their jurisdiction, was demonstrated. Staff members were knowledgeable of traffic control point procedures and could ensure the safety of both the general public and emergency workers during traffic and access control activities.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 3.1, 5.4.

**Public Information and Warning Capability Summary:**

Lincoln County public information officers demonstrated the ability to effectively coordinate reliable public alerts and warnings. They provided prompt, action-oriented information to the public throughout the exercise with a variety of systems, including sirens and a mass-notification phone/text/email system. Frequent communication between the public information officer and counterparts in the joint information system using a continuously monitored public information officer conference call bridge line ensured all participating agencies were updated on both anticipated and approved public information. The open bridge line aided in the timely flow of public information development and messaging.

As key members of the joint information system, Lincoln County public information officers supported disseminating emergency information to the public. Messages specific to Lincoln County were drafted using pre-scripted templates, adapted to the specific situation, and approved prior to release by the county commissioner and the emergency management coordinator. All press releases were approved by the commissioner before being posted to state online preparedness and resource tracking application and the county's website. With a substantial non-English-speaking population, Lincoln County demonstrated the capability to notify the public in Spanish. They also maintained a language line providing interpreters for those non-English speaking individuals requiring some type of assistance during an emergency.

Lincoln County relies on a series of installed sirens as its primary means of alerting the public of an event at the McGuire Nuclear Station, followed by a message broadcast over the emergency alert system. While the county's emergency operations center has input into the decisions to activate the sirens and the content of Emergency Alert System messages, county delegates implementation of the alert and notification process to the lead response agency, Charlotte-Mecklenburg County.

While not demonstrated during the exercise, Lincoln County could implement additional notification procedures including route alerting, personal notifications, telecommunications devices for the hearing impaired, a reverse call system, social media platforms, and telephone calls. Through interview with a representative of the Lincoln County Sheriff's Office, it was explained how backup notifications would be accomplished in areas where a siren failed. Planning for notifications in the area was discussed and would be accomplished within a reasonable time following failure of any or all parts of primary alert and notification systems.

No rumor calls were received, although the public information officers had the capacity to respond to phone calls and via social media.

For this core capability the following radiological emergency preparedness capability targets were met: 3.2, 3.3.

**On-Scene Security, Protection, and Law Enforcement (Traffic Control Points) Capability Summary:**

Lincoln County Sheriff's Office staff successfully demonstrated the ability to effectively establish and maintain traffic control points. The deputy interviewed was well versed in the law enforcement aspects related to traffic control point establishment and management. The deputy was well trained and exhibited sufficient knowledge of dosimetry, personal protective measures and pertinent aspects related to ingestion of potassium iodide. The deputy was equipped with information that would assist in responding to queries from evacuees regarding reception and congregate care centers.

The deputy stated impediments to the flow of traffic would be removed by whatever means necessary, and they would contact the shift supervisor and report the nature of the impediment. If it could not easily be delt with on site, the shift supervisor would obtain further resources and assistance.

For this core capability the following radiological emergency preparedness capability target was met: 5.4.

## 3.6 Support Jurisdictions

### 3.6.1 Cabarrus County

**Operational Coordination Capability Summary:**

The Cabarrus County emergency operations center staff successfully notified and mobilized resources, providing effective direction and control for a county-wide response effort. Protective action decisions were made in coordination with the risk counties and the state. The unified and coordinated operational structure effectively integrated all partners to ensure decisions protected the public's health and safety. Their response to a simulated radiological incident at the McGuire Nuclear Station was fully in accordance with the *Cabarrus County Emergency Response Plan McGuire Nuclear Station (dated June 2021) and Cabarrus County Emergency Operations Center Standard Operating Guidelines (dated July 2009)*.

Staff at the emergency operations center had multiple communications systems, sufficient equipment, and supplies available to support operations. The Cabarrus County emergency management director provided effective direction and control of the county's response for emergency workers, the public, and groups of persons with disabilities and access or functional

needs. The decision-making process considered all relevant factors, impacts on the public, and appropriate coordination.

The emergency operations center staff was alerted, notified, and mobilized in a timely manner. Cabarrus County's primary and backup communication systems were available, with no communication system failures observed during the exercise. Two primary communication systems were used throughout the exercise. Duke Energy made Initial notifications on the Duke Emergency Management Network notification line. Status and decision calls were made on an internet-based video conference call platform. These ensured dedicated communication links between the McGuire Nuclear Station, state of North Carolina, and the risk counties. Backup communications consisted of telephones, 800 megahertz radios, cell phones, email, facsimile machines, and the state online preparedness and resource tracking application. There was sufficient equipment, supplies, backup power, and maps on hand to support the management of response efforts.

A Cabarrus County Sheriff's Office deputy demonstrated the capability to establish effective traffic and access control, and to respond appropriately to impediments to evacuation on roads within the county. Staff members were knowledgeable of regional standard operating guidelines, plans, and resources available to effectively deploy and support the operation of the six traffic control points in the county. The interviewed deputy described the plans for the removal of any impediments to traffic flow, ensuring effective traffic and access control activities. Impediments to evacuation would be communicated to and coordinated with the Cabarrus County emergency operations center, and adjustments to the traffic control points and staffing made appropriately.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 3.1, 5.4.

**Public Information and Warning Capability Summary:**

The Cabarrus County emergency management director and his staff successfully demonstrated the ability to alert and notify the public and provide accurate information in a timely manner. As part of a regional unified command structure, Cabarrus County coordinated with the risk counties virtually through an internet-based video conference call platform for each siren and Emergency Alert System activation. The Emergency Alert System and National Weather Service messages were disseminated after each siren activation by the designated risk county. This action was supplemented through the distribution of three Cabarrus County specific press releases which provided additional information to the public and media.

The Cabarrus County public information staff operated from the emergency operations center while participating in the joint information system. Staff demonstrated the capability to provide accurate, prompt, and actionable emergency information and instructions to the public and media in a timely manner. Emergency information provided was clear and accurate, and instructions were consistent with the coordinated protective action decisions.

For this core capability the following radiological emergency preparedness capability targets were met: 3.2, 3.3.

### On-Scene Security, Protection, and Law Enforcement (Traffic Control Points) Capability Summary:

Cabarrus County Sheriff's Office deputies and Kannapolis Police Department officers were able to successfully demonstrate their ability to establish, staff, and maintain traffic control points in support of a radiological emergency at McGuire Nuclear Station while maintaining their personal safety from possible radiation hazards. The two deputies and two officers interviewed were knowledgeable of the emergency situations and how that they would be alerted/mobilized during an emergency. Sufficient communications equipment, dosimetry, potassium iodide and 'just in time' training would be made available to support the need for emergency traffic control within the host county. Equipment necessary for traffic and access control points would be coordinated through the nearest department. Any impediments to evacuation would be communicated to and coordinated with the Cabarrus County emergency operations center, and adjustments to the traffic control points and staffing would be made appropriately to support evacuation and access control in response to the radiological emergency status.

For this core capability the following radiological emergency preparedness capability target was met: 5.4.

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# Section 4: Conclusion

FEMA assesses offsite response organization preparedness on an ongoing basis which meets the intent of the 44 CFR 350 planning standards and, through the assessment of selected core capabilities, the National Preparedness Goal. This report is used to document biennial demonstration-based assessment activities.

The Analysis of Capabilities (Section 3) described the state of North Carolina and McGuire Nuclear Station offsite response capabilities. Overall, the exercise was a success. The demonstration-based assessment activities evaluated by core capabilities, objectives, and capability targets were successfully demonstrated, and no Level 1 or Level 2 findings were identified. All offsite response organizations demonstrated knowledge of their emergency response plans and procedures, and successfully demonstrated the ability to protect the health and safety of the public in the event of an incident involving the McGuire Nuclear Station.

In addition, the state of North Carolina and McGuire Nuclear Station offsite response organizations were among the first in the nation to complete an exercise during the SARS-CoV-2/COVID-19 pandemic. The state and counties innovatively and successfully implemented and used technology to ensure sufficient support and response, while also protecting their workforces. The integration of virtual audio and video teleconferencing allowed all players to participate and enhanced the operational communication capability within the state. The lessons learned and best practices gained through the implementation and use of new technology should be documented in emergency response plans and procedures.

Based on the results of this exercise and FEMA's review of the 2020 Annual Letter of Certification submitted by North Carolina, the offsite radiological emergency response plans and preparedness of the state of North Carolina and the affected local jurisdictions site-specific to the McGuire 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 an emergency at the site. The Title 44 CFR, Part 350 approval of the offsite radiological emergency response plans and preparedness site-specific to the McGuire Nuclear Station granted on June 4, 1981, will remain in effect.

Despite the current pandemic and other ongoing real-world response efforts, the professionalism and teamwork of the participants was evident throughout all phases of the exercise. FEMA wishes to acknowledge the efforts of the many individuals who participated and made this exercise a success.

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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 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | SERT/ SEOC | Western Branch Office | Charlotte-Mecklenburg County | Catawba County | Gaston County | Iredell County | Lincoln County | Cabarrus County | Joint Information System* |
| Unusual Event | - | - | - | - | - | - | - | - | - | - |
| Alert | 8:14 a.m. | 8:21 a.m. | 8:21 a.m. | 8:21 a.m. | 8:21 a.m. | 8:21 a.m. | 8:21 a.m. | 8:21 a.m. | 8:21 a.m. | 9:40 a.m. |
| Site Area Emergency | 10:38 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 11:25 a.m. |
| General Emergency | 11:40 a.m. | 11:48 a.m. | 11:48 a.m. | 11:48 a.m. | 11:48 a.m. | 11:48 a.m. | 11:48 a.m. | 11:48 a.m. | 11:48 a.m. | 12:30 a.m. |
| Simulated Rad. Release Started | 10:24 am. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | 10:45 a.m. | - |
| Simulated Rad. Release Ended | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing |
| Facility Declared Operational | 8:50 a.m. | 8:40 a.m. | 8:40 a.m. | 8:55 a.m. | 8:25 a.m. | 10:49 a.m. | 8:29 a.m. | 8:25 a.m. | 9:20 a.m. | 9:01 a.m. |
| End Exercise | 1:45 p.m. | 1:25 p.m. | 1:15 p.m. | 1:13 p.m. | 1:20 p.m. | 1:20 p.m. | 1:19 p.m. | 1:45 p.m. | 1:33 p.m. | 1:19 p.m. |
| State of Emergency Declared | State | 11:44 a.m. | 11:44 a.m. | - | - | - | - | - | - | 11:44 a.m. |
| | Local | - | - | 10:30 a.m. | 9:45 a.m. | - | 10:00 a.m. | 10:48 a.m. | 11:05 a.m. | - |
| Protective Action Decision 1: Public notification of Incident | | 10:56 a.m. | 10:56 a.m. | 10:56 a.m. | 10:56 a.m. | 10:56 a.m. | 10:56 a.m. | 10:56 a.m. | 10:56 a.m. | 11:29 a.m. |
| 1st Siren Activation | | 11:10 a.m. | 11:10 a.m. | 11:10 a.m. | 11:10 a.m. | 11:10 a.m./ 11:37 a.m. | 11:10 a.m. | 11:10 a.m. | 11:10 a.m. | 11:25 a.m. |
| 1st EAS Message | | 11:15 a.m. | 11:15 a.m. | 11:15 a.m. | 11:15 a.m. | 11:15 a.m. | 11:15 a.m. | 11:15 a.m. | 11:15 a.m. | - |
| 1st NWS Message | | 11:25 a.m. | 11:25 a.m. | 11:25 a.m. | 11:25 a.m. | 11:25 a.m. | 11:25 a.m. | 11:25 a.m. | 11:25 a.m. | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Protective Action Decision 2:** Evacuate Zones: A, B, C, D, L, M | 12:01 p.m. | 12:01 p.m. | 12:01 p.m. | 12:01 p.m. | 12:01 p.m. | 12:01 p.m. | 12:01 p.m. | 12:01 p.m. | 12:30 p.m. |
| **2nd Siren Activation** | 12:16 p.m. | 12:16 p.m. | 12:16 p.m. | 12:16 p.m. | 12:16 p.m. | 12:16 p.m. | 12:16 p.m. | 12:16 p.m. | 12:30 p.m. |
| **2nd EAS Message** | 12:21 p.m. | 12:21 p.m. | 12:21 p.m. | 12:21 p.m. | 12:21 p.m. | 12:21 p.m. | 12:21 p.m. | 12:21 p.m. | - |
| **2nd NWS Message** | 12:31 p.m. | 12:31 p.m. | 12:31 p.m. | 12:31 p.m. | 12:31 p.m. | 12:31 p.m. | 12:31 p.m. | 12:31 p.m. | - |
| **KI Ingestion Decision:** EW only in EPZ | 11:27 a.m. | 11:27 a.m. | 11:27 a.m. | 11:27 a.m. | 11:27 a.m. | 11:27 a.m. | 11:27 a.m. | 11:27 a.m. | - |

*Denotes the time in which a decision was messaged from the joint information center.

# Appendix B: Evaluator Assignments

Out of Sequence Week – July 19-22, 2021:

| Location/Venue | Evaluation Team | Core Capability |
|---|---|---|
| State of North Carolina | | |
| Waterway Warning – Lake Norman/Mountain Island Lake | Michael Dolder<br>Rosemary Samsel<br>John "J.T." Ackermann<br>Farrah Stewart<br>Jill Leatherman<br>Randi Hendrix<br>Marcy Campbell<br>Tom Essig<br>Cheryl Weaver<br>Marynette Herndon<br>Ron Bonner<br>Roy Smith | On-Scene Security, Protection, and Law Enforcement |
| Traffic Control Points | Roy Smith | On-Scene Security, Protection, and Law Enforcement |
| Charlotte-Mecklenburg County | | |
| Reception and Congregate Care Center | Marcy Campbell<br>Cheryl Weaver<br>Jill Leatherman<br>Rosemary Samsel | Environmental Response/Health and Safety<br>Mass Care |
| Medical Services Drill | Erica Houghton<br>Ron Bonner<br>Tom Essig<br>Marynette Herndon | Public Health, Healthcare, and Emergency Medical Services |
| Reception and Congregate Care Center | Jill Leatherman<br>Marcy Campbell<br>Cheryl Weaver<br>Tom Essig<br>Rosemary Samsel | Environmental Response/Health and Safety<br>Mass Care |
| Traffic Control Points | J.T. Ackermann<br>Randi Hendrix<br>Cheryl Weaver<br>Ron Bonner<br>Marcy Campbell | On-Scene Security, Protection, and Law Enforcement |
| Reception and Congregate Care Center | Tom Essig<br>Marcy Campbell<br>Ron Bonner<br>Cheryl Weaver<br>Rosemary Samsel | Environmental Response/Health and Safety<br>Mass Care |
| Catawba County | | |
| Traffic Control Points | Tom Essig | On-Scene Security, Protection, and Law Enforcement |

| Location/Venue | Evaluation Team | Core Capability |
|---|---|---|
| **Gaston County** | | |
| Traffic Control Points | Jill Leatherman | On-Scene Security, Protection, and Law Enforcement |
| **Iredell County** | | |
| Traffic Control Points | Marynette Herndon | On-Scene Security, Protection, and Law Enforcement |
| **Lincoln County** | | |
| Traffic Control Points | Jill Leatherman | On-Scene Security, Protection, and Law Enforcement |
| **Cabarrus County** | | |
| Traffic Control Points | Roy Smith | On-Scene Security, Protection, and Law Enforcement |

Exercise Week – August 2-6, 2021:

| Location/Venue | Evaluation Team | Core Capability |
|---|---|---|
| State Emergency Operations Center | Matthew Bradley<br>Gene Taylor<br>Paul "P.J." Nied | Operational Coordination<br>Public Information and Warning |
| Joint Information System | Glenda Bryson | Public Information and Warning |
| Western Branch Office | Roger Winkelmann | Operational Coordination |
| Dose Assessment | Marcy Campbell | Situational Assessment |
| FMT Management | Tom Essig | Environmental Response/Health and Safety |
| FMT Operations | Ron Bonner<br>Cheryl Weaver | Environmental Response/Health and Safety |
| Mobile Laboratory | Marynette Herndon | Environmental Response/Health and Safety |
| EOF | Jill Leatherman | Operational Coordination |
| Mecklenburg County Emergency Operations Center | Erica Houghton<br>Farrah Stewart<br>John Wiecjorek<br>Peter Judge | Operational Coordination<br>Public Information and Warning<br>Critical Transportation |
| Catawba County Emergency Operations Center | James Greer<br>Rosemary Samsel<br>William McDougal | Operational Coordination<br>Public Information and Warning |
| Gaston County Emergency Operations Center | John Fill<br>Gary Goldberg<br>Margaret Swearingen | Operational Coordination<br>Public Information and Warning<br>Critical Transportation |
| Iredell County Emergency Operations Center | Robert Nash<br>Daniel Loomis<br>Brenda Rembert | Operational Coordination<br>Public Information and Warning<br>Critical Transportation |
| Lincoln County Emergency Operations Center | Roy Smith<br>Terry Blackmon<br>Mike Meshenberg | Operational Coordination<br>Public Information and Warning<br>Critical Transportation |
| Cabarrus County Emergency Operations Center | Michael Dolder<br>Steve Watts | Operational Coordination<br>Public Information and Warning |

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# Appendix C: Exercise Participants

| Participating Organizations |
|---|
| **State of North Carolina** |
| Department of Public Safety, Division of Emergency Management |
| Department of Public Safety, Public Affairs Office |
| Department of Public Safety, North Carolina State Highway Patrol |
| Department of Health and Human Services, Division of Public Health, Office of Public Health |
| Department of Health and Human Services, Division of Facility Services |
| Department of Public Health, Division of Health Service Regulation, Radiation Protection Section |
| Department of Agriculture and Consumer Services, Emergency Programs Division |
| Wildlife Resources Commission, Division of Enforcement |
| **Charlotte-Mecklenburg County** |
| Emergency Management Office |
| Charlotte Fire Department |
| Charlotte-Mecklenburg Police Department |
| Charlotte-Mecklenburg Schools |
| Emergency Medical Services/MEDIC |
| Department of Social Services |
| Health Department |
| County Fire Marshal |
| Huntersville Police Department |
| Cornelius Police Department |
| Davidson Police Department |
| Sheriff's Office |
| **Catawba County** |
| Emergency Services |
| County Schools |
| Sheriff's Office |

| Participating Organizations |
| --- |
| Social Services |
| Public Health |
| **Gaston County** |
| Office of Emergency Management |
| Department of Social Services |
| Emergency Medical Service |
| County Fire Marshal |
| Gaston County Schools |
| Gaston County Police Department |
| Sheriff's Office |
| Health Department |
| Gastonia Fire Department |
| **Iredell County** |
| Emergency Management |
| Department of Social Services |
| Emergency Medical Service |
| County Fire Marshal |
| Sheriff's Office |
| Health Department |
| County Schools |
| **Lincoln County** |
| Emergency Management |
| Department of Social Services |
| Emergency Medical Service |
| Fire Marshal |
| Sheriff's Office |
| Health Department |
| Lincoln County Schools |

| Participating Organizations |
| --- |
| Alexis Fire Department |
| Pumpkin Center Fire Department |
| **Cabarrus County** |
| Emergency Management |
| Department of Social Services |
| Emergency Medical Service |
| Health Alliance/Health Department |
| Cabarrus County Schools |
| Sheriff's Office |
| Kannapolis Fire Department |
| Kannapolis Police Department |
| Concord Police Department |
| **Private Sector** |
| American Red Cross |
| Amateur Radio Emergency Services |
| Atrium Health University Hospital |
| Duke Energy |
| **Federal** |
| United States Department of Homeland Security, FEMA Region 4 |
| United States Nuclear Regulatory Commission, Region 2 |

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# Appendix D: Extent of Play Agreement

## Signatures

The following agree to support this McGuire Nuclear Station Out of Sequence Activities and Exercise as described herein:

### State Emergency Operations Center/State Emergency Response Team

### Core Capability: Operational Coordination

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.

Objective 1: Emergency Operations Management Capability Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.3, A.4, A.5, C.1, C.2, C.2.a, C.2.b, C.3, E.1, E.1.a, E.3, F.1.c, H.6, and 0.1).

| Assessment | Extent of Play |
|---|---|
| Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner. | Prepositioning of exercise players is allowed. Some players will be remote; interviews with remote personnel will be coordinated through the controller. |
| Receive and verify notifications. | No Exception |
| Identify and request additional resources, as needed. | No Exception |
| Determine a facility is operational. | No Exception |

### Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2, C.2.a, C.2.b, C.3, D.4, E.1, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Support protective action decision-making. | No Exception |
| Conduct briefings in a timely manner. | No Exception |
| Maintain situational awareness. | No Exception |
| Coordinate response activities with other organizations. | No Exception |
| Obtain resources to support emergency operations. | No Exception |
| Provide and maintain adequate facilities and equipment to support the emergency response. | No Exception |

### Capability Target 1.4: Protective Action Decisions for the Plume Phase

Intent: The capability to utilize appropriate factors and necessary coordination in the decision-making process used to make protective action decisions for the public.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (D.1.b, D.4, J.6, J.7, J.8, J.8.b, J.10, J.10.a, J.10.b, J.11.c-g, and O.1.)

| Assessment | Extent of Play |
|---|---|
| Coordinate and make protective action decisions for members of the general public. | No Exception |
| Coordinate and make protective action decisions for those with access and functional needs. | No Exception |
| Coordinate and make protective action decisions for students at schools. | No Exception |
| Coordinate and make subsequent or alternate protective action decisions. | No Exception |

| | |
|---|---|
| Coordinate and make decisions on the administration of potassium iodide (where applicable) for the public and institutionalized members of the population. | No Exception |

### Capability Target 1.5: Protective Action Decision Implementation for the Plume Phase

Intent: The capability to implement precautionary protective action and/or protective action decisions, including evacuation and/or sheltering, for all populations within the plume and ingestion exposure pathway emergency planning zones. The populations include those with access and functional needs, students, and institutionalized individuals.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.4, C.2.a, G.1, J.11, J.11.a, J.11.b, J.11.c, J.11.e, J.11.g, and O.1).

| Assessment | Extent of Play |
|---|---|
| Implement protective action decisions, ensuring communication and coordination with all appropriate jurisdictions. | No Exception |
| Assist those with access and functional needs during the implementation of protective action decisions. | No Exception |
| Communicate, coordinate, and implement protective actions for schools. | No Exception |
| Communicate with transportation officials. | No Exception |
| Identify evacuation routes for the general public. | No Exception |
| Make potassium iodide available to both institutionalized persons and the general public, in accordance with plans and procedures. | No Exception |

## Objective 2: Exposure Control

### Capability Target 2.1: Emergency Worker Exposure Control Decision-Making Process

Intent: The capability to assess and control the radiation exposure and dose received by emergency workers and utilize a decision-making chain to authorize emergency worker exposure limits to be exceeded for specific missions.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, K.2, K.2.b, K.3, K.3.a, M.1.b, M.8, and O.1).

| Assessment | Extent of Play |
|---|---|
| Control emergency workers' exposure and dose, including offsite workers performing duties onsite. | Permanent record dosimeters will be simulated. |
| Maintain record of dose as a result of exposure. | No Exception |
| Authorize exposures and dose in excess of identified limits. | No Exception |
| Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits. | No Exception |
| Determine a correction factor for direct reading dosimeter-based isotopic release mixture. | No Exception |
| Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas. | No Exception |
| Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established protective action guides. | No Exception |
| Adequately protect members of the public from radiological exposure and control dose for those who are authorized to temporarily reenter a restricted area. | No Exception |

### Capability Target 2.2: Emergency Worker Exposure Control Management

Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs), and identify procedures to monitor their exposure and dose, including following procedures to obtain authorization to receive emergency exposures in excess of the protective action guides.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, H.11.b, K.2.b, K.3, K.3.a, M.1.b, and O.1).

| Assessment | Extent of Play |
|---|---|
| Maintain an appropriate inventory of direct-reading dosimeters that are leak-tested or current in calibration. | No Exception |
| Maintain an appropriate inventory of permanent record dosimeters. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Retain an adequate supply of radioprotective drugs. | No Exception |
| Adequately distribute appropriate direct-reading dosimeters and permanent record dosimeters. | Permanent record dosimeters will be simulated. |
| Adequately distribute radioprotective drugs to emergency workers. | All potassium iodide distribution will be simulated. |
| Record and report exposures in the field. | No Exception |
| Implement decisions to administer radioprotective drugs. | No Exception |
| Report to individual responsible for managing exposure and dose when limits are reached. | No Exception |
| Implement exposure control decisions to members of the public from radiological exposure and control dose for those who are authorized to temporarily reenter a restricted area. | No Exception |

### Objective 3: Alert and Notification Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Utilize communication systems that are fully functional, continuously available, and redundant. | No Exception |
| Maintain periodic test results and corrective actions on a real time basis. | No Exception |
| Access at least one communication system that is independent of the commercial telephone system. | No Exception |
| Manage the communication systems and ensure that all message traffic is handled | No Exception |

| Assessment | Extent of Play |
|---|---|
| without delays that might disrupt emergency operations. | |
| Identify and address any failures of the systems. | No Exception |
| Transmit, receive, and understand messages (i.e., “content check”). | No Exception |

### Objective 5: Operate

### Capability Target 5.4: Traffic and Access Control

Intent: The capability to select, establish, and staff traffic and access control points and removing impediments to the flow of evacuation traffic.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.12, J.8, J.8.b, J.10, J.10.a, J.11.c, J.11.e, J.11.f, J.14.d, J.14.e, M.1.b, and O.1).

| Assessment | Extent of Play |
|---|---|
| Select, establish, and staff appropriate traffic and access control points, consistent with current conditions and protective action decisions (e.g., evacuating, sheltering, and relocation), in a timely manner. | No Exception |

| | |
|---|---|
| Provide instructions to traffic and access control staff on actions to take, including when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled. | No Exception |
| Contact the state or federal agencies that have the authority for the different transportation modes (e.g., rail, water, and air traffic). | No Exception |
| Identify and take appropriate actions concerning impediments that affect the evacuation and evacuation routes. | No Exception |
| Make the decision to re-route traffic and coordinate with key decision-makers and the joint information center to ensure the alternate route information is appropriately communicated to evacuees. | No Exception |
| Establish procedures to control access to and monitor people and vehicles from the evacuated and restricted areas. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Authorize reentry of individuals into the restricted areas. | No Exception |
| Establish exit procedures. | No Exception |

### Core Capability: Public Information and Warning

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, as well as the actions being taken and the assistance being made available, as appropriate.

#### Objective 3: Alert and Notification

#### Capability Target 3.2: Alert and Notification of the Public

Intent: The capability to provide instructions to the public.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.2, E.4, E.5, F.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Sequentially provide an alert signal followed by an initial instructional message to populated areas. | Alert signals will be demonstrated via a silent test of the siren system. Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Alert and notify the general public. | Alert signals will be demonstrated via a silent test of the siren system. |
| Identify and address any failures of the system(s) or portion of a system(s). | No Exception |
| Identify the process to activate the Emergency Alert System. | Activation of the Emergency Alert System will be simulated. |
| Ensure that updated emergency information is disseminated in a timely manner. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Ensure that current emergency information is repeated at pre-established intervals. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Identify the process to activate the Emergency Alert System, to include the process to receive and then broadcast updated information/messages and verification of the message, if applicable. | Activation of the Emergency Alert System will be simulated. |

| Assessment | Extent of Play |
|---|---|
| Complete route alerting, whether because of failure for system/portion of a system or for exception areas, as needed to demonstrate all routes are capable of being run in allotted time. Emphasis on the most challenging routes and demonstration of these routes will be varied from assessment activity to assessment activity. Challenging routes are defined as those that may be difficult to accomplish, such as those that are lengthy or with conditions (physical or otherwise) that may affect the speed and accuracy with which the route can be completed (e.g., traffic patterns and/or capacity, road conditions, etc.). | |

### Capability Target 3.3: Emergency Information and Instructions for the Public and News Media

Intent: The capability to disseminate emergency information and instructions to the public during all phases of an incident.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.2, E.4, E.5, G.1, G.2, G.3, G.3.a, G.4, G.5, and O.1).

| Assessment | Extent of Play |
|---|---|
| Deliver coordinated, prompt, reliable, and actionable information in a timely manner. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Provide clear, concise, accessible messaging using plain language. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Messaging addresses appropriate cultural and linguistic considerations. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Ensure subsequent messaging is consistent with protective actions. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Update information as the incident progresses, to include validating previously identified protective areas and clearly identifying any new protective action areas, any information that is no longer valid, and any changes to previously provided information (e.g., rerouting of evacuation routes due to impediments, etc.). | Emergency information will be written and posted in WebEOC but not released to the public or media. |

| Assessment | Extent of Play |
|---|---|
| Respond to media and public inquiries. | No Exception |

Regional Coordination Center – West

### Core Capability: Operational Coordination

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.

### Objective 1: Emergency Operations Management Capability Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.3, A.4, A.5, C.1, C.2, C.2.a, C.2.b, C.3, E.1, E.1.a, E.3, F.1.c, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner. | Prepositioning of exercise players is allowed. Some players will be remote; interviews with remote personnel will be coordinated through the controller. |
| Receive and verify notifications. | No Exception |
| Identify and request additional resources, as needed. | No Exception |
| Determine a facility is operational. | No Exception |

### Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2, C.2.a, C.2.b, C.3, D.4, E.1, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Support protective action decision-making. | No Exception |
| Conduct briefings in a timely manner. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Maintain situational awareness. | No Exception |
| Coordinate response activities with other organizations. | No Exception |
| Obtain resources to support emergency operations. | No Exception |
| Provide and maintain adequate facilities and equipment to support the emergency response. | No Exception |

### Objective 3: Alert and Notification Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Utilize communication systems that are fully functional, continuously available, and redundant. | No Exception |
| Maintain periodic test results and corrective actions on a real time basis. | No Exception |
| Access at least one communication system that is independent of the commercial telephone system. | No Exception |
| Manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations. | No Exception |
| Identify and address any failures of the systems. | No Exception |
| Transmit, receive, and understand messages (i.e., “content check”). | No Exception |

Dose Assessment

## Core Capability: Operational Coordination

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.

### Objective 1: Emergency Operations Management

### Capability Target 1.4: Protective Action Decisions for the Plume Phase

Intent: The capability to utilize appropriate factors and necessary coordination in the decision-making process used to make protective action decisions for the public.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (D.1.b, D.4, J.6, J.7, J.8, J.8.b, J.10, J.10.a, J.10.b, J.11.c-g, and O.1).

| Assessment | Extent of Play |
|---|---|
| Support protective action decision-making. | No Exception |
| Support protective action decision making for those with access and functional needs. | No Exception |
| Support protective action decision making for students at schools. | No Exception |
| Support protective action decision making for subsequent or alternate protective action decisions. | No Exception |
| Support protective action decision making on the administration of potassium iodide (where applicable) for the public and institutionalized members of the population. | No Exception |

### Objective 2: Exposure Control

#### Capability Target 2.1: Emergency Worker Exposure Control Decision-Making Process

Intent: The capability to assess and control the radiation exposure and dose received by emergency workers and utilize a decision-making chain to authorize emergency worker exposure limits to be exceeded for specific missions.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, K.2, K.2.b, K.3, K.3.a, M.1.b, M.8, and O.1).

| Assessment | Extent of Play |
|---|---|
| Control emergency workers' exposure and dose, including offsite workers performing duties onsite. | No Exception |
| Maintain record of dose as a result of exposure. | No Exception |
| Authorize exposures and dose in excess of identified limits. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits. | No Exception |
| Determine a correction factor for direct reading dosimeter-based isotopic release mixture. | No Exception |
| Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas. | No Exception |
| Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established protective action guides. | No Exception |
| Adequately protect members of the public from radiological exposure and control dose for those who are authorized to temporarily reenter a restricted area. | No Exception |

### Objective 4: Detect, Measure, Sample, Analyze, and Assess Capability Target 4.5: Plume Phase Analysis and Dose Assessment

Intent: The capability to collect data, project doses to members of the public and emergency workers, and analyze and communicate the results.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.3, H.13, I.6, I.8, I.10, K.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Obtain adequate data to make dose projections. | No Exception |
| Use software and/or other methods (e.g., manual calculations) to make dose projections for members of the public (both TED and thyroid dose) based on plant data. | No Exception |
| Compare dose projections to members of the public to Environmental Protection Agency Protective Action Guides. | No Exception |

| | |
|---|---|
| Compare dose projections to the public with those of the licensee and discuss differences greater than a factor of ten with the licensee and explain reasons for the difference. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Make initial protection action recommendations based on recommendations of the licensee, release data, meteorological data, and other pertinent information. | No Exception |
| Promptly communicate protection action recommendations to decision-makers. | No Exception |
| Receive ambient exposure rates from field monitoring teams and compare to model projections. | No Exception |
| Calculate iodine and particulate concentrations from field monitoring team air samples. | No Exception |
| Calculate plume ratios of noble gas, iodines, and particulates, and compare to model projections. | No Exception |
| Adjust protection action recommendations, as necessary, based on analysis of field data. | No Exception |
| Calculate an incident-specific correction factor for emergency workers inside the plume exposure pathway emergency planning zone. | No Exception |

Field Monitoring Team Management and Operations

### Core Capability: Environmental Response/Health and Safety

Definition: Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities.

### Objective 1: Emergency Operations

### Management Capability Target 1.1:

### Mobilization

Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.3, A.4, A.5, C.1, C.2, C.2.a, C.2.b, C.3, E.1, E.1.a, E.3, F.1.c, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner. | Prepositioning of exercise players is allowed. Some players will be remote; interviews with remote personnel will be coordinated through the controller. |

| Assessment | Extent of Play |
|---|---|
| | All Field Team Management and Operations evaluations are courtesy only for training. |
| Receive and verify notifications. | No Exception |
| Identify and request additional resources, as needed. | No Exception |
| Determine a facility is operational. | No Exception |

### Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2, C.2.a, C.2.b, C.3, D.4, E.1, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Support protective action decision-making. | All Field Team Management and Operations evaluations are courtesy only for training. |
| Conduct briefings in a timely manner. | No Exception |
| Maintain situational awareness. | No Exception |
| Coordinate response activities with other organizations. | No Exception |
| Obtain resources to support emergency operations. | No Exception |

| | |
|---|---|
| Provide and maintain adequate facilities and equipment to support the emergency response. | No Exception |

## Objective 2: Exposure Control

### Capability Target 2.1: Emergency Worker Exposure Control Decision-Making Process

Intent: The capability to assess and control the radiation exposure and dose received by emergency workers and utilize a decision-making chain to authorize emergency worker exposure limits to be exceeded for specific missions.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, K.2, K.2.b, K.3, K.3.a, M.1.b, M.8, and O.1).

| Assessment | Extent of Play |
|---|---|
| Control emergency workers' exposure and dose, including offsite workers performing duties onsite. | All Field Team Management and Operations evaluations are courtesy only for training. |
| Maintain record of dose as a result of exposure. | No Exception |
| Authorize exposures and dose in excess of identified limits. | No Exception |
| Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits. | No Exception |
| Determine a correction factor for direct reading dosimeter-based isotopic release mixture. | No Exception |
| Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas. | No Exception |
| Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established protective action guides. | No Exception |
| Adequately protect members of the public from radiological exposure and control dose for those who are authorized to temporarily reenter a restricted area. | No Exception |

### Capability Target 2.2: Emergency Worker Exposure Control Management

Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs), and identify procedures to monitor their exposure and dose, including following procedures to obtain authorization to receive emergency exposures in excess of the protective action guides.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, H.11.b, K.2.b, K.3, K.3.a, M.1.b, and O.1).

| Assessment | Extent of Play |
|---|---|
| Maintain an appropriate inventory of direct-reading dosimeters that are leak-tested or current in calibration. | All Field Team Management and Operations evaluations are courtesy only for training. |
| Maintain an appropriate inventory of permanent record dosimeters. | No Exception |
| Retain an adequate supply of radioprotective drugs. | No Exception |
| Adequately distribute appropriate direct-reading dosimeters and permanent record dosimeters. | Permanent record dosimeters will be simulated. |
| Adequately distribute radioprotective drugs to emergency workers. | All potassium iodide distribution will be simulated. |
| Record and report exposures in the field. | No Exception |
| Implement decisions to administer radioprotective drugs. | No Exception |
| Report to individual responsible for managing exposure and dose when limits are reached. | No Exception |
| Implement exposure control decisions to members of the public from radiological exposure and control dose for those who are authorized to temporarily reenter a restricted area. | No Exception |

### Objective 3: Alert and Notification Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Utilize communication systems that are fully functional, continuously available, and redundant. | All Field Team Management and Operations evaluations are courtesy only for training. |
| Maintain periodic test results and corrective actions on a real time basis. | No Exception |
| Access at least one communication system that is independent of the commercial telephone system. | No Exception |
| Manage the communication systems and ensure that all message traffic is handled | No Exception |

| Assessment | Extent of Play |
|---|---|
| without delays that might disrupt emergency operations. | |
| Identify and address any failures of the systems. | No Exception |
| Transmit, receive, and understand messages (i.e., “content check”). | No Exception |

### Objective 4: Detect, Measure, Sample, Analyze, and Assess Capability Target 4.1: Field Monitoring Teams Management

Intent: The capability to provide overall management of field monitoring teams to direct movements and measurements to characterize the plume and its impacts.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.11, H.13, I.5, I.6, I.9, I.10, M.7, M.8, and O.1).

| Assessment | Extent of Play |
|---|---|
| Brief field monitoring teams on predicted plume location and direction, plume travel speed, equipment operational checks, background measurement, and exposure control procedures before deployment. | All Field Team Management and Operations evaluations are courtesy only for training. |

| | |
|---|---|
| Direct the field monitoring teams to monitoring locations, predesignated points or otherwise, at times and locations sufficient to characterize the plume. | No Exception |
| Obtain peak plume measurements from field monitoring teams. | No Exception |
| Direct field monitoring teams to collect air samples at locations and times sufficient to characterize the plume. | No Exception |
| Keep incident command informed of field monitoring teams activities and location(s) during a hostile action based incident or other instances when an incident command post or other may be in use. | No Exception |
| Coordinate and share information amongst all field monitoring teams (licensee, federal, state, and local). | No Exception |

| Assessment | Extent of Play |
|---|---|
| Coordinate sample analysis from field to those responsible for assessing radiological data. | No Exception |
| Coordinate transfer of sample media to locations and organizations responsible for assessing radiological data. | No Exception |
| Assist with development and modification of sampling plans, as appropriate. | No Exception |

### Objective 4: Detect, Measure, Sample, Analyze, and Assess Capability Target 4.2: Plume Phase Measurements and Sampling

Intent: The capability to make and report measurements of ambient radiation.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.9, H.11, H.11.a, H.11.b, H.12, H.13, I.2, I.5, I.6, I.7, I.8, I.9, I.10, and O.1).

| Assessment | Extent of Play |
|---|---|
| Maintain emergency equipment including calibration and operational checks according to manufacturer's specifications or per national standards. | All Field Team Management and Operations evaluations are courtesy only for training. |

| | |
|---|---|
| Maintain inventory for emergency kits. | No Exception |
| Operate and monitor radiation survey instruments to detect changes in radiation exposure rate while moving and in stationary positions. | No Exception |
| Use appropriate contamination control and personal protective equipment. | No Exception |
| Be in location(s) at the appropriate time(s) to detect and characterize the active release (plume). | No Exception |
| Obtain peak plume measurements either directly or from licensee field teams. | No Exception |
| Correctly interpret survey instrument readings to determine submersion in the active plume. | No Exception |
| Collect representative air samples in the active plume on particulate media (e.g., glass or | No Exception |

| Assessment | Extent of Play |
|---|---|
| paper filter) and iodine selective media (e.g., silver zeolite cartridge). | |
| Handle sample media and equipment to avoid sample cross-contamination, contamination of equipment and personnel contamination. | No Exception |
| Determine an appropriate low background location to count sample media. | No Exception |
| Count iodine and particulate media using appropriate and effective instrumentation and counting geometries or have samples analyzed by a supporting laboratory within four hours. | No Exception |
| Report to field monitoring team manager all survey and counting results in format and units suitable for use by the organization's dose assessor. | No Exception |
| Procedures, qualified collection and counting efficiencies, and calculations are capable of detecting airborne radioactive iodine concentrations as low as $10^{-7}$ µCi/cc. | No Exception |

| | |
|---|---|
| Preparation of packaging, sample identification, and chain-of-custody forms ensures integrity of samples throughout transportation and transfer. | No Exception |

Emergency Operations Facility

### Core Capability: Environmental Response/Health and Safety

Definition: Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities.

#### Objective 3: Alert and Notification

#### Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Utilize communication systems that are fully functional, continuously available, and redundant. | No Exception |
| Maintain periodic test results and corrective actions on a real time basis. | No Exception |
| Access at least one communication system that is independent of the commercial telephone system. | No Exception |
| Manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations. | No Exception |
| Identify and address any failures of the systems. | No Exception |
| Transmit, receive, and understand messages (i.e., “content check”). | No Exception |

Joint Information System/Center

### Core Capability: Public Information and Warning

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, as well as the actions being taken and the assistance being made available, as appropriate.

### Objective 1: Emergency Operations Management Capability Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.3, A.4, A.5, C.1, C.2, C.2.a, C.2.b, C.3, E.1, E.1.a, E.3, F.1.c, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner. | Prepositioning of exercise players is allowed. Some players will be remote; interviews with remote personnel will be coordinated through the controller. |
| Receive and verify notifications. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Identify and request additional resources, as needed. | No Exception |
| Determine a facility is operational. | No Exception |

### Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2, C.2.a, C.2.b, C.3, D.4, E.1, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Support protective action decision-making. | No Exception |
| Conduct briefings in a timely manner. | No Exception |
| Maintain situational awareness. | No Exception |

| | |
|---|---|
| Coordinate response activities with other organizations. | No Exception |
| Obtain resources to support emergency operations. | No Exception |
| Provide and maintain adequate facilities and equipment to support the emergency response. | No Exception |

### Objective 3: Alert and Notification Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Utilize communication systems that are fully functional, continuously available, and redundant. | No Exception |
| Maintain periodic test results and corrective actions on a real time basis. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Access at least one communication system that is independent of the commercial telephone system. | No Exception |
| Manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations. | No Exception |
| Identify and address any failures of the systems. | No Exception |
| Transmit, receive, and understand messages (i.e., “content check”). | No Exception |

### Capability Target 3.3: Emergency Information and Instructions for the Public and News Media

Intent: The capability to disseminate emergency information and instructions to the public during all phases of an incident.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.2, E.4, E.5, G.1, G.2, G.3, G.3.a, G.4, G.5, and O.1).

| Assessment | Extent of Play |
|---|---|
| Deliver coordinated, prompt, reliable, and actionable information in a timely manner. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Provide clear, concise, accessible messaging using plain language. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Messaging addresses appropriate cultural and linguistic considerations. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Ensure subsequent messaging is consistent with protective actions. | Emergency information will be written and posted in WebEOC but not released to the public or media. |
| Update information as the incident progresses, to include validating previously identified protective areas and clearly identifying any new protective action areas, any information that is no longer valid, and any changes to previously provided information (e.g., rerouting of evacuation routes due to impediments, etc.). | Emergency information will be written and posted in WebEOC but not released to the public or media. |

| Assessment | Extent of Play |
|---|---|
| Respond to media and public inquiries. | No Exception |

Waterway Warning

### Core Capability: On-Scene Security, Protection, and Law Enforcement

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 response personnel engaged in lifesaving and life-sustaining operations.

### Objective 1: Emergency Operations Management Capability Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.3, A.4, A.5, C.1, C.2, C.2.a, C.2.b, C.3, E.1, E.1.a, E.3, F.1.c, H.6, and O.1)

| Assessment | Extent of Play |
|---|---|
| Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner. | Prepositioning of exercise players is allowed. Some players will be remote; interviews with remote personnel will be coordinated through the controller. |
| Receive and verify notifications. | No Exception |
| Identify and request additional resources, as needed. | No Exception |
| Determine a facility is operational. | No Exception |

### Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2, C.2.a, C.2.b, C.3, D.4, E.1, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Support protective action decision-making. | No Exception |
| Conduct briefings in a timely manner. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Maintain situational awareness. | No Exception |
| Coordinate response activities with other organizations. | No Exception |
| Obtain resources to support emergency operations. | No Exception |
| Provide and maintain adequate facilities and equipment to support the emergency response. | No Exception |

## Objective 2: Exposure Control

### Capability Target 2.2: Emergency Worker Exposure Control Management

Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs), and identify procedures to monitor their exposure and dose, including following procedures to obtain authorization to receive emergency exposures in excess of the protective action guides.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, H.11.b, K.2.b, K.3, K.3.a, M.1.b, and O.1).

| Assessment | Extent of Play |
|---|---|
| Maintain an appropriate inventory of direct-reading dosimeters that are leak-tested or current in calibration. | No Exception |
| Maintain an appropriate inventory of permanent record dosimeters. | No Exception |
| Retain an adequate supply of radioprotective drugs. | No Exception |
| Adequately distribute appropriate direct- reading dosimeters and permanent record dosimeters. | Permanent record dosimeters will be simulated. |
| Adequately distribute radioprotective drugs to emergency workers. | All potassium iodide distribution will be simulated. |
| Record and report exposures in the field. | No Exception |
| Implement decisions to administer radioprotective drugs. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Report to individual responsible for managing exposure and dose when limits are reached. | No Exception |
| Implement exposure control decisions to members of the public from radiological exposure and control dose for those who are authorized to temporarily reenter a restricted area. | No Exception |

### Objective 3: Alert and Notification Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, and

O.1).

| Assessment | Extent of Play |
|---|---|
| Utilize communication systems that are fully functional, continuously available, and redundant. | No Exception |
| Maintain periodic test results and corrective actions on a real time basis. | No Exception |
| Access at least one communication system that is independent of the commercial telephone system. | No Exception |
| Manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations. | No Exception |
| Identify and address any failures of the systems. | No Exception |
| Transmit, receive, and understand messages (i.e., "content check"). | No Exception |

### Capability Target 3.2: Alert and Notification of the Public

Intent: The capability to provide instructions to the public.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.2, E.4, E.5, F.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Identify and address any failures of the system(s) or portion of a system(s). | No Exception |
| Actual testing of the mobile public address system will be conducted at an agreed-upon location. | The public address system on each boat will be tested and the pre-scripted message read aloud once while demonstrating waterway warning to ensure system operability. |
| Ensure that updated emergency information is disseminated in a timely manner. | This will be discussed via interview. |
| Ensure that current emergency information is repeated at pre-established intervals. | This will be discussed via interview. |

## Objective 5: Operate

### Capability Target 5.4: Traffic and Access Control

Intent: The capability to select, establish, and staff traffic and access control points and removing impediments to the flow of evacuation traffic.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.12, J.8, J.8.b, J.10, J.10.a, J.11.c, J.11.e, J.11.f, J.14.d, J.14.e, M.1.b, and O.1).

| Assessment | Extent of Play |
|---|---|
| Select, establish, and staff appropriate traffic and access control points, consistent with current conditions and protective action decisions (e.g., evacuating, sheltering, and relocation), in a timely manner. | This will be discussed via interview. |
| Provide instructions to traffic and access control staff on actions to take, including when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled. | This will be discussed via interview. |
| Contact the state or federal agencies that have the authority for the different transportation modes (e.g., rail, water, and air traffic). | The contacting of state or federal agencies that have authority for the different transportation modes will be simulated. |
| Identify and take appropriate actions concerning impediments that affect the evacuation and evacuation routes. | This will be discussed via interview. |
| Make the decision to re-route traffic and coordinate with key decision-makers and the joint information center to ensure the alternate | This will be discussed via interview. |
| route information is appropriately communicated to evacuees. | |

Traffic Control Points

### Core Capability: On-Scene Security, Protection, and Law Enforcement

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 response personnel engaged in lifesaving and life-sustaining operations.

### Objective 5: Operate

### Capability Target 5.4: Traffic and Access Control

Intent: The capability to select, establish, and staff traffic and access control points and removing impediments to the flow of evacuation traffic.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.12, J.8, J.8.b, J.10, J.10.a, J.11.c, J.11.e, J.11.f, J.14.d, J.14.e, M.1.b, and O.1).

| Assessment | Extent of Play |
|---|---|
| Select, establish, and staff appropriate traffic and access control points, consistent with current conditions and protective action decisions (e.g., evacuating, sheltering, and relocation), in a timely manner. | This will be discussed via interview. |
| Provide instructions to traffic and access control staff on actions to take, including when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled. | This will be discussed via interview. |
| Contact the state or federal agencies that have the authority for the different transportation modes (e.g., rail, water, and air traffic). | The contacting of state or federal agencies that have authority for the different transportation modes will be simulated. |
| Identify and take appropriate actions concerning impediments that affect the evacuation and evacuation routes. | This will be discussed via interview. |
| Make the decision to re-route traffic and coordinate with key decision-makers and the JIC to ensure the alternate route information is appropriately communicated to evacuees. | This will be discussed via interview. |

Backup Route Alerting

## Core Capability: Public Information and Warning

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, as well as the actions being taken and the assistance being made available, as appropriate.

### Objective 1: Emergency Operations Management Capability
### Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.3, A.4, A.5, C.1, C.2, C.2.a, C.2.b, C.3, E.1, E.1.a, E.3, F.1.c, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner. | Prepositioning of exercise players is allowed. Some players will be remote; interviews with remote personnel will be coordinated through the controller. |
| Receive and verify notifications. | No Exception |
| Identify and request additional resources, as needed. | No Exception |
| Determine a facility is operational. | No Exception |

### Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2, C.2.a, C.2.b, C.3, D.4, E.1, H.6, and O.1).

| Assessment | Extent of Play |
|---|---|
| Support protective action decision-making. | No Exception |
| Conduct briefings in a timely manner. | No Exception |
| Maintain situational awareness. | No Exception |
| Coordinate response activities with other organizations. | No Exception |
| Obtain resources to support emergency operations. | No Exception |
| Provide and maintain adequate facilities and equipment to support the emergency response. | No Exception |

## Objective 2: Exposure Control

### Capability Target 2.2: Emergency Worker Exposure Control Management

Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs), and identify procedures to monitor their exposure and dose,

including following procedures to obtain authorization to receive emergency exposures in excess of the protective action guides.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, H.11.b, K.2.b, K.3, K.3.a, M.1.b, and O.1).

| Assessment | Extent of Play |
|---|---|
| Maintain an appropriate inventory of direct-reading dosimeters that are leak-tested or current in calibration. | No Exception |
| Maintain an appropriate inventory of permanent record dosimeters. | No Exception |
| Retain an adequate supply of radioprotective drugs. | No Exception |
| Adequately distribute appropriate direct- reading dosimeters and permanent record dosimeters. | Permanent record dosimeters will be simulated. |
| Adequately distribute radioprotective drugs to emergency workers. | All potassium iodide distribution will be simulated. |
| Record and report exposures in the field. | No Exception |
| Implement decisions to administer radioprotective drugs. | No Exception |
| Report to individual responsible for managing exposure and dose when limits are reached. | No Exception |
| Implement exposure control decisions to members of the public from radiological | No Exception |
| exposure and control dose for those who are authorized to temporarily reenter a restricted area. | |

### Objective 3: Alert and Notification Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, and O.1).

| Assessment | Extent of Play |
|---|---|
| Utilize communication systems that are fully functional, continuously available, and redundant. | No Exception |
| Maintain periodic test results and corrective actions on a real time basis. | No Exception |
| Access at least one communication system that is independent of the commercial telephone system. | No Exception |
| Manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations. | No Exception |
| Identify and address any failures of the systems. | No Exception |
| Transmit, receive, and understand messages (i.e., "content check"). | No Exception |

Capability Target 3.2: Alert and Notification of the Public Intent: The capability to provide instructions to the public.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.2, E.4, E.5, F.3, and O.1)

| Assessment | Extent of Play |
|---|---|
| Sequentially provide an alert signal followed by an initial instructional message to populated areas. | The public address system will be tested and the pre-scripted message read aloud once while demonstrating backup route alerting to ensure system operability. |
| Alert and notify the general public. | The public address system will be tested and the pre-scripted message read aloud once while demonstrating backup route alerting to ensure system operability. |

| Assessment | Extent of Play |
|---|---|
| Identify and address any failures of the system(s) or portion of a system(s). | No Exception |
| Actual testing of the mobile public address system will be conducted at an agreed-upon location. | The public address system will be tested and the pre-scripted message read aloud once while demonstrating backup route alerting to ensure system operability. |
| Ensure that updated emergency information is disseminated in a timely manner. | This will be discussed via interview. |
| Ensure that current emergency information is repeated at pre-established intervals. | This will be discussed via interview. |
| Complete route alerting, whether because of failure for system/portion of a system or for exception areas, as needed to demonstrate all routes are capable of being run in allotted time. Emphasis on the most challenging routes and demonstration of these routes will be varied from assessment activity to assessment activity. Challenging routes are defined as those that may be difficult to accomplish, such as those that are lengthy or with conditions (physical or otherwise) that may affect the speed and accuracy with which the route can be completed (e.g., traffic patterns and/or capacity, road conditions, etc.). | No Exception |

Emergency Worker Decontamination

### Core Capability: Environmental Response/Health and Safety

Definition: Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities.

### Objective 5: Operate

### Capability Target 5.2: Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles

Intent: The capability to implement radiological monitoring and decontamination of emergency workers, equipment, and vehicles.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (K.4 and O.1)

| Assessment | Extent of Play |
|---|---|
| Set-up operations. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Operationally check instruments and equipment. | No Exception |
| Monitor emergency worker personnel and their equipment and vehicles for contamination. | No Exception |
| Decontaminate emergency worker personnel and their equipment and vehicles based on trigger/action levels. | The use of water us will be simulated for vehicle decontamination. For personnel decontamination water will be used with the exception of showers. |
| Control the spread of contamination. | No Exception |
| Create and maintain a record of monitoring and decontaminating workers upon completion of monitoring and decontamination activities. | No Exception |
| Process for prioritizing emergency workers and equipment before the public in facilities where the public and emergency workers are both processed for contamination. | No Exception |

Reception and Congregate Care Center

### Core Capability: Mass Care Services

Definition: Provide life-sustaining and human services to the affected population, to include hydration, feeding, sheltering, temporary housing, evacuee support, reunification, and distribution of emergency supplies.

### Objective 5: Operate

### Capability Target 5.1: Monitoring, Decontamination, Sheltering, and Registration of Evacuees

Intent: The capability to implement radiological monitoring and decontamination of evacuees, and to identify, register, temporarily shelter, and provide congregate care for evacuees at reception centers.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (J.11.d, J.13, K.4, and O.1)

| Assessment | Extent of Play |
|---|---|

| | |
|---|---|
| Set-up operations. | No Exception |
| Operationally check instruments and equipment. | No Exception |
| Attain and sustain the overall monitoring productivity rate per hour needed to monitor 20 percent of the plume exposure pathway | No Exception |

| Assessment | Extent of Play |
|---|---|
| emergency planning zone population, including transients, within a 12-hour period at each facility. The monitoring productivity rate per hour is the number of evacuees that can be monitored, per hour, per location, by the total complement of monitors using an appropriate procedure. | |
| Monitor evacuees, service animals, pets, vehicles, and possessions. | The monitoring of service animals and pets will be discussed via interview. |
| Utilize trigger/action levels for determining the need for decontamination. | No Exception |
| Decontaminate evacuees, and personal belongings, while limiting the spread of contamination. | Showering will be simulated |
| Follow-up with any evacuee(s) who cannot be appropriately decontaminated for assessment; ensure the capability to provide evacuee-referrals. | No Exception |
| Monitor and decontaminate vehicles. | The use of water us will be simulated for vehicle decontamination. |
| Provide adequate, separate space for both contaminated and non-contaminated vehicles. | No Exception |
| Monitor emergency worker personnel and their equipment and vehicles for contamination. | No Exception |
| Decontaminate evacuee vehicles based on trigger/action levels. | No Exception |
| Coordinate for incoming evacuees who have been monitored and, if necessary, decontaminated. | No Exception |

| | |
|---|---|
| Establish shelter operations. | No Exception |
| Congregate care centers and operations in host/support jurisdictions are sufficient to support the expected number of evacuees. | No Exception |
| Register evacuees. | No Exception |

| Assessment | Extent of Play |
|---|---|
| Ensure the registration area is clean and controlled. | No Exception |

Medical Services Drill

### Core Capability: Public Health, Healthcare, and Emergency Medical Services

Definition: Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical, and behavioral health support, and products to all affected populations.

### Objective 5: Operate

### Capability Target 5.3: Transportation and Treatment of Contaminated, Injured Individuals

Intent: The capability to provide medical transport and treatment services to contaminated, injured individuals.

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.d, F.2, H.11, H.12, J.2, K.3, K.4, L.1, L.3, L.4, and O.1).

| Assessment | Extent of Play |
|---|---|
| Transport contaminated, injured individuals to medical facilities. | No Exception |
| Maintain communications between the medical transportation provider and the receiving medical facility. | No Exception |
| Operationally check instruments and equipment. | No Exception |
| Set-up, activate, and operate a radiation emergency area. | No Exception |
| Monitor and decontaminate the individual, equipment, and other items. | The use of showers for decontamination will be simulated |