# After Action Report

V.C. Summer Nuclear Station

Radiological Emergency Preparedness Exercise

Exercise Date: March 7-8, 2023

Final

FEMA

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# Executive Summary

On March 7, 2023, the offsite response organizations of the V.C. Summer Nuclear Station 10-mile emergency planning zone participated in a plume exposure pathway exercise. The exercise continued on March 8, 2023, to include the offsite response organizations of the 50-mile emergency planning zone for a post-plume ingestion exposure pathway exercise. This report outlines the evaluation of the entire Exercise by FEMA Region 4 Radiological Emergency Preparedness Program staff.

The exercise aimed to assess the level of state and local preparedness in responding to an incident at the V.C. Summer 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 qualifying emergency preparedness exercise was conducted on November 13, 1981, and the qualifying emergency preparedness exercise was conducted on November 13, 1981. The last biennial exercise was conducted on March 2, 2021.

All jurisdictions met their Radiological Emergency Preparedness Program objectives and successfully demonstrated the corresponding core capabilities identified in Section 2.2 of this report. Officials and representatives from participating agencies and organizations demonstrated knowledge of their emergency response plans and procedures and successfully implemented them during the exercises.

FEMA staff did not identify any level 1 or level 2 findings during this exercise. However, a Plan Issue was identified and is further detail in section 3.3.1.2, Dose Assessment.

FEMA wishes to acknowledge the efforts of the many individuals who participated in the exercise and made it successful. Developing, designing, and training for a plume and post-plume ingestion phase exercise requires detailed coordination and collaboration with various agencies and departments. It was apparent that a high level of coordination and collaboration occurred to ensure all offsite response organizations successfully demonstrated their ability to protect the health and safety of the public. In addition, they provided the necessary support and resources to respond to an incident at the V.C. Summer Nuclear Station. The professionalism and teamwork of the participants were evident throughout all phases of the exercise.

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# Section 1: Exercise Overview

| | | |
|---|---|---|
| Exercise Name | 2023 V.C. Summer Nuclear Station Radiological Emergency Preparedness Exercise | |
| Type of Exercise | Full Scale Plume and Post Plume Ingestion Pathway Exercise | |
| Exercise Date | March 7 and 8, 2023 | |
| Program | Radiological Emergency Preparedness Program | |
| Mission Area | Response | |
| Scenario Type | Plume and Post Plume Ingestions Phase Radiological Emergency Preparedness Exercise | |
| Participating Organizations | See Appendix C for the list of participating organizations | |
| Locations | See Appendix D for the extent of play agreement and exercise locations | |
| Points of Contact | Kevin Wells<br>Regional Assistance Coordinator<br>FEMA Region 4<br>3005 Chamblee-Tucker Road<br>Atlanta, GA 30341 | Robert Spence<br>South Section Chief<br>FEMA Region 4<br>3005 Chamblee-Tucker Road<br>Atlanta, GA 30341 |
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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, 351, 352, 353 and 354. 44 CFR Pt. 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 Pt. 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, 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 South 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 using 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 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.

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

- **Objective 1:** Emergency Operations Management – Demonstrate the ability to alert, notify, and mobilize response personnel and facilities; provide direction and control; make precautionary and protective action decisions; and implement those decisions.
- **Objective 2:** Exposure Control – Demonstrate the ability to manage radiological exposure and dose to emergency workers.
- **Objective 3:** Alert and Notification – Demonstrate the ability to activate the prompt alert and notification system and provide accurate emergency information and instructions to the public and news media in a timely manner. Provide and maintain reliable communication with emergency personnel.
- **Objective 4:** Detect, Measure, Sample, Analyze, and Assess – Demonstrate the ability to perform plume and post plume phase analysis and dose assessment; conduct and manage field team measurements to support protective action recommendation(s) and assessment of the ingestion exposure pathway, reentry, relocation, and return decisions.
- **Objective 5:** Operate – Demonstrate the ability to establish appropriate traffic and access controls; provide monitoring, decontamination, sheltering, and registration of evacuees; provide monitoring and decontamination of emergency workers, equipment, and vehicles; provide transportation and treatment of contaminated, injured individuals.

## 2.3 Exercise Scenario

The following is a summary of the scenario developed by Dominion Energy to drive exercise play.

After the reactor loses parts and area monitor's alarm, a reactor coolant sample indicates that the threshold for dose equivalent I-131 is exceeded, meeting the threshold for an Alert Emergency Classification Level. A loss of coolant accident occurs inside containment, reactor building radiation monitors increase, and there is a loss of reactor building spray, meeting the threshold for a Site Area Emergency classification level. After a service water booster pump failure, containment pressure rises meeting the criteria for a General Emergency classification level. The protective action recommendation is to evacuate two miles around and five miles downwind and shelter out to 10 miles downwind. After a reactor building pressure drop and visible steam coming from the equipment hatch, a radiological release is in progress. Dose assessments indicate that no additional PARs are required.

A timeline was included in the scenario package. Highlights of this timeline are listed below. All times are approximate and dependent upon simulator actions. Times for emergency classification level Emergency Classification Level declarations are listed for the times the threshold is met and declared. V.C. Summer Nuclear Station has 15 minutes to declare the Emergency Classification Level after the threshold is met and 15 minutes after that time to notify the offsite response organizations.

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# Section 3: Analysis of Capabilities

## 3.1 Exercise Evaluation and Results

This section contains the results and findings of the evaluation of all jurisdictions that played in the March 7, 2023, plume exposure pathway exercise, and March 8, 2023, post plume ingestion pathway exercise.

Each jurisdiction was 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. Each jurisdiction's standalone capability summaries are provided below.

**Operational Coordination:** Key leadership personnel established and maintained a unified and coordinated operational structure, which provided effective and responsive direction and control. Critical stakeholders were appropriately integrated in the overall decision-making process, which enabled protective action recommendations to be evaluated in a sensible and timely manner. This process included input from both relevant critical stakeholders and support personnel and considered the safety and well-being of the general public. From

there, protective action decisions were made without undue delay. Overall, officials at the county level played critical roles in decision making throughout the exercise.

**Situational Assessment:** South Carolina Department of Health and Environmental Control personnel accomplished some of its mission in making recommendations to protect the public in accordance with their plans and procedures. However, the South Carolina plans did not specify to whom a KI decision would be made, i.e., South Carolina emergency management leadership, county leadership, or emergency support function 8, and it had no clear KI scheme for the general public. Decision makers were provided with relevant information regarding assessed radiological and plant conditions. This information allowed decision makers to understand the extent of the hazards, and cascading effects and to make the appropriate protective action decisions based on the available guidance in the plan.

**Public Information and Warning:** The jurisdictions demonstrated the ability to deliver coordinated, prompt, reliable, and actionable information to the whole community. Alert and notification of the public and media were completed in a timely manner utilizing Integrated Public Alert and Warning test messages. During the ingestion phase, public information personnel coordinated and created two additional news messages regarding reentry and return. All messages were reviewed by each county's emergency management director and released through the state emergency operations center's joint information system. Public information was consistent with protective action decisions and contained applicable and specific instructions relative to those decisions.

**Environmental Response/Health and Safety:** The availability of guidance and resources to address hazardous materials was integral in support of the responder operations. Emergency workers were issued the appropriate dosimetry, potassium iodide, and procedures, and properly managed their radiological exposure during out-of-sequence activities. The counties also discussed the ability to monitor and decontaminate evacuees, emergency workers, and their vehicles.

The South Carolina Department of Health and Environmental Control deployed radiological monitoring field teams to characterize the radioactive plume. The field team members effectively carried out their mission.

**On-Scene Security and Protection:** State and local law enforcement agencies discussed the capability to ensure a safe and secure environment through law enforcement and related security and protection operations for people traveling within the emergency planning zone. The implementation of traffic and access control points was discussed during exercise play at the state emergency operations center and by risk county emergency operations center representatives who described the process by which traffic and access control points could be established in a timely manner.

South Carolina Department of Natural Resources officers demonstrated the capability to conduct waterway warning and lake clearance on Lake Monticello. They had plans and procedures in place to launch boats and notify the public. The officers were familiar with radiological exposure control.

**Critical Transportation:** Representatives from the Fairfield County School District and the Newberry County School District effectively discussed implementation of protective actions for affected local schools. The sheltering and evacuation of students and staff, reunification center locations and activities, staff duties and responsibilities, security, equipment and

communications, and transportation, were successfully discussed during out-of-sequence activities.

## 3.3 Jurisdictional Summary Results of Exercise Evaluation

### 3.3.1 State Jurisdiction

#### 3.3.1.1 State of South Carolina Emergency Operations Center

Operational Coordination Capability Summary:

Staff at the South Carolina Emergency Management Division State Emergency Operations Center located at 2779 Fish Hatchery Road, West Columbia, South Carolina 29172, successfully demonstrated the ability to alert, notify, and mobilize key personnel in response to a simulated event at V.C. Summer Nuclear Station. They efficiently demonstrated and explained their use of a mass notification system that notifies key staff to report for facility activation via phone, email, and text. This occurred in the South Carolina Emergency Management Division State Warning Point after receipt of an Unusual Event Emergency Classification Level from utility-initiated commercial telephone calls and email transmissions using a mass notification system called Everbridge, the primary Dominion Energy Emergency Notification System. The backup system was available but not needed. Changes in V.C. Summer emergency classification levels and follow-up notifications were communicated in the same manner. The warning point supervisor explained they retrieved electronic copies of the emergency notification forms from the utility. Early in the exercise, the utility version of their crisis information system, WebEOC, was not allowing the warning point supervisor to log in due to a password issue. Subsequently, "Annex P" directing WebEOC login was abandoned and replaced with email retrieval from the utility's newest mass notification system, Everbridge. The warning point supervisor and an additional operator quickly and efficiently worked through the unexpected situation and relayed information to other decision-makers. No further authentication methods were used to validate the authenticity of utility messages received in the warning point through commercial telephone and email until utility liaisons arrived in the emergency operations center after activation. Once available, they were able to provide additional authenticity, specifically with the South Carolina Department of Environmental Control and Public Information. One emergency notification form indicated message one at the Alert classification, which was message two subsequent to the Unusual Event. This created some confusion with warning point staff, but it was quickly resolved again.

Furthermore, a follow-up utility notification of the General Emergency needed an attachment different from all the others received prior. Again, this was quickly resolved by warning point operators that used alternative copy-paste means to relay the information to key staff. The Chief of Operations successfully activated facilities in a timely manner by directing notification of State Emergency Response Team staff and declaring the facility operational shortly thereafter in an initial In-Brief. The South Carolina Emergency Management Division demonstrated activation of their facility for immediate use by mobilizing trained personnel with Emergency Support Function staff upon arrival. At no time did staff in the facility mention they had yet to be trained for their role. When terms such as Potassium Iodide were not immediately understood, the group collaborated to explain the meaning. The following emergency support functions were activated and notated by number in parenthesis if designated: South Carolina Emergency Management Division staff including Chief of Operations, Technical Officer, Chief of Preparedness, Logistics Chief with support staff,

Situation Unit Leader with support staff, Transportation (1), Mass Care (6) including American Red Cross and Department of Social Services, Health and Medical Services (8), South Carolina Department of Health and Environmental Control (10), Energy (12), Law Enforcement (13) including staff from the South Carolina Law Enforcement Division and Department of Natural Resources, Recovery and Mitigation (14), and Public Information (15), Emergency Traffic Management (16) including staff from South Carolina Department of Public Safety, Agriculture and Animals (17) including staff from Clemson University Livestock Poultry Health and South Carolina Department of Agriculture, National Guard (19), Food Service (11), and Business and Industry (24). The ability to maintain 24-hour staffing was established to include a completed sign-in / sign-out electronic badging process of participants managed by the South Carolina Criminal Justice Academy designated for physical access security. Physical security was adequately maintained.

The ability to identify, request, and track additional resources was successfully demonstrated via participation in an event decision line call with other offsite response organizations. Additionally, emergency support function partners in the South Carolina Emergency Management Division State Emergency Operations Center tracked significant events, resource requests, and position logs via the common operating picture system as part of their common operating picture. The Palmetto information was observed visually on large electronic screens in the front of the facility and on individual emergency support function position computers.

The South Carolina Emergency Management Division Director successfully demonstrated direction and control and supported county protective action decision-making, conducted frequent briefings with the emergency operations center staff and county personnel, maintained situational awareness, coordinated the state and county responses with other organizations, fulfilled county resource requests, and maintained adequate facilities and equipment to support the emergency response. Once plant safety systems began to degrade (simulated) at the site area emergency classification level, the state emergency operations center quickly implemented the state dosimetry distribution plan which bolstered survey and monitoring equipment in the county reception centers in receiving and monitoring evacuees.

The South Carolina Emergency Management Division selected and tracked precautionary actions most appropriate for the simulated emergency and coordinated protective action recommendations among the four risk counties in a timely manner. The precautionary actions recommended and implemented by the state were a stay tuned message, agricultural advisory, hunting/fishing advisory, waterway clearance, and rail/flight restrictions. All of which were coordinated with the four risk counties.

The command staff and four risk counties coordinated and made protective action decisions for the general public, those with access and functional needs, students at schools, made alternate protective action decisions, and coordinated the authorization for the administration and ingestion of potassium iodide for emergency workers and institutionalized persons. The protective action decisions coordinated by the state with the four risk counties were evacuation of zones: A0, E1, E2, F1, F2 and an authorization for emergency workers and institutionalized persons to ingest potassium iodide. The decision to evacuate was lengthy due to a quick escalation from site area emergency to general emergency, Newberry counties desired to evacuate zones E2 and F2 instead of sheltering in place as initially recommended and having to update the integrated public alert & warning system message from site area emergency verbiage to general emergency verbiage. During the additional time, the command staff was actively engaged in protective action discussions and updates

to ensure a concise and accurate message was provided to the public as soon as possible under rapidly escalating conditions.

The Chief of Operations informed key emergency support function staff in the state emergency operations center that a State of Emergency had been previously declared by the Governor of South Carolina and was now being implemented.

The South Carolina Emergency Management Division State Emergency Operations Center staff successfully implemented protective action decisions, ensuring communication and coordination with all appropriate jurisdictions.

Implementation to evacuate the ten-mile emergency planning zones of A0, E1, E2, F1, F2 was actioned after significant coordination and discussion of recommendations from the utility, county, and state decision makers after receiving notice of a General Emergency. Initial recommendations were to evacuate A0, E1, E1 and shelter E2, F2 but challenges from Newberry County to evacuate all zones were met with decisions to implement an evacuation of all listed zones. Initially the first report of a general emergency from the utility emergency notification form included a notation that a release was not in progress, but that offsite response organizations should consider use of potassium iodide in accordance with plans and procedures. Health and Medical Services (8), South Carolina Department of Health and Environmental Control did not implement ingestion of this radioprotective drug for emergency workers and institutionalized persons but did subsequently implement later after a follow-up utility notification was received that did indicate a release was in-progress.

Implementation of sheltering the public through reception center congregate care largely occurred locally, however Mass Care (6) including American Red Cross and Department of Social Services were able to track and trend status through a common operating picture system as discussed through interview with Department of Social Services Lead in their breakout room.

Coordinated implementation of a traffic stoppage on Interstate-26 between mile markers 72 and 90 was handled by the South Carolina Department of Transportation emergency support function (1) Transportation at the request of Newberry County after the General Emergency and subsequent implementation of evacuation zones.

Requests for traffic control were made from Newberry County and Lexington County to the state emergency support function (16) Emergency Traffic Management group. Subsequent assignments of 20 troopers to Lexington County were implemented with the assistance of South Carolina Law Enforcement Division.

The South Carolina Emergency Management Division State Emergency Operations Center staff successfully demonstrated the ability to control emergency workers' exposure and dose, including offsite workers performing duties onsite. Specially, the South Carolina Department of Public Safety Emergency Manager explained through interview that the South Carolina highway patrol has ample electronically readable dosimeters assigned to their troops, numerous marked or assigned vehicles, receive radiological fundamental training each year, dosimeters are calibrated each year, access to additional dosimeters as part of the state dosimeter re-distribution plan, emergency worker dose limit cards, knowledge of exposure limits and state limits, and routinely perform operational checks as part of their normal tour of duty assignments.

The South Carolina Emergency Management Division State Emergency Operations Center and State Warning Point staff successfully demonstrated the availability to use, without delay, fully functional, continuously available, and redundant communications systems in response to a simulated event at V.C. Summer Nuclear Station. The systems were commercial wireline and wireless telephones with voice and texting, email, and a voice conference call platform. Satellite phones were available but not needed. Personnel was familiar with these methods. As mentioned above, the primary communications pathway for emergency notifications from the utility to the South Carolina Emergency Management Division State Warning Point. It was successfully used as a communications pathway with commercially available telephones. A dedicated communications closed system was also available as a separate backup. Content received via communications methods was continuously vetted and shared among emergency support function partners, other offsite response organizations, and a Dominion Energy liaison present in the facility. Equipment at the state was sufficient to support continuous operations. Job aids, maps of the emergency planning zones, and the utility emergency action level wallboards were available for reference.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, and 3.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues**

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

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

**Public Information and Warning Capability Summary**:

State, county, and utility public information officers and spokespersons successfully demonstrated the public information and warning core capability in response to a simulated radiological incident at the V.C. Summer Nuclear Station.

Following notification of an Alert the state public information officer received notification via a mass communications system from the state warning point to report to the state emergency operations center. The state public information officer and team, which included the news release writer, joint information center manager, and Integrated Public Alert and Warning System coordinator were pre-positioned in the joint information center in accordance with the extent of play agreement. Additionally, a public information officer representing the Newberry County Sherriff's Office was pre-positioned with the state public information team. Upon receipt of the notification to report for duty, the joint information system public information coordination line was set-up. This line allowed utility and county public information officers and spokespersons not in the joint information center to call in and share information with one another for the duration of the exercise. The joint information center was declared operational shortly thereafter.

The joint information center itself provided the state public information officer and public information team adequate space, ample communications systems, and necessary supplies and equipment. All communications systems were operable and sufficient to support

response operations. The primary means of communication within the joint information system was a public information officer coordination line. While information was exchanged between state, county, and utility public information officers, little to no information was coordinated. Each entity functioned within its respective organization and information was shared as it was occurring or had occurred, and not in anticipation so it could be coordinated among all partners.

The state public information officer attended and participated in county coordination calls while the remainder of the team stayed in the joint information center and listened to the calls over a conference telephone. This allowed them to hear firsthand the decisions being made and concurred upon by county and state officials. Hearing this conservation allowed the team to edit pre-scripted news releases quickly and accurately. As each call was finishing a tailored news release was available within minutes for review, approval, and signature. The state public information officer was responsible for overseeing the state news release development, review, and approval process and disseminating approved news releases on behalf of the state. This process included a public information news release writer drafting each release and the division director, chief of staff, chief of plans, radiological emergency preparedness program manager, and/or state public information officer reviewing and approving each news release. Once approved, the public information news release writer emailed the approved news release to an exercise-specific media distribution list.

The Integrated Public Alert and Warning System coordinator was responsible for drafting and obtaining review, approval, and signature through the same process used for news releases. Once approved, the coordinator worked with the state warning point supervisor to ensure the Integrated Public Alert and Warning System process was followed and messages were disseminated via the Emergency Alert System and Wireless Emergency Alert systems. In total, four state news releases were notionally disseminated, and two Emergency Alert System and Wireless Emergency Alert messages were sent via the Integrated Public Alert and Warning System. One of the approved Emergency Alert System and Wireless Emergency Alert messages was sent to a test laboratory to ensure various parts of the message met content guidelines and word count restrictions.

Two virtual media telebriefings were conducted via a video conferencing platform. Prior to each media telebriefing the state public information officer summarized critical information and key decisions and recommended a speaking order based on this information. Both the information and order were concurred upon by the spokespersons. The state public information officer and spokesperson facilitated the media telebriefings and spokespersons representing the utility, Fairfield, Richland, Lexington, and Newberry counties notionally shared utility or county-specific information with the public and media. Once each spokesperson had spoken, the mock media was given an opportunity to ask questions; no questions were asked following both media telebriefings.

The JIC manager, news release writer, and Integrated Public Alert and Warning System coordinator all received and responded to rumor control/media inquiries. They were asked if there was a release and were able to confirm via previously disseminated messaging that a release was in progress. They received other calls and questions related to potassium iodide, siren activation, etc., They were unable to answer these questions on their own and consulted the state public information officer on what their response should be.
For this capability the following radiological emergency preparedness capability targets were met: 1.1, 3.1, 3.2, 3.3.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues**

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

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

#### 3.3.1.2 Dose Assessment

**Situational Assessment Capability Summary**:

South Carolina Department of Health and Environmental Control personnel demonstrated the ability to assess plant conditions and field data and provide protective action recommendations to decision makers in response to a radiological incident at the V.C. Summer Nuclear Station.

When notified of an incident at V.C. Summer Nuclear Station, dose assessment personnel responded to the state emergency operations center in West Columbia, South Carolina. The dose assessment group was led by the state emergency response coordinator. The emergency response coordinator had the overall responsibility for dose assessment and protective action recommendations for the state and risk counties. The emergency response coordinator was assisted by a team lead, a utility liaison, a communicator, and a dose assessment coordinator. The emergency response coordinator, in consultation with the designated public health physician, was responsible for authorizing the use of potassium iodide by emergency workers, institutionalized individuals, and the general public.

The dose assessment team monitored various plant parameters, meteorological data, and field monitoring information. The licensee liaison and the state liaison at the emergency operations facility provided real time plant status and followed trends for numerous plant equipment. Using available information, the dose assessment team used computer models to perform calculations of projected radiation dose at varied downwind distances. Dose projections were compared to protective action guidelines.

Following the Site Area Emergency declaration, the emergency response coordinator made recommendations to clear Lake Monticello and issue a hunting/fishing advisory and agricultural advisory within the 10-mile emergency planning zone. The coordinator also worked with transportation representatives on recommendations related to clearing the airspace above the plant. Protective action recommendations were documented on a protective action recommendations chart.

When a General Emergency was initially declared, the state emergency response coordinator reviewed a procedure with preplanned protective action recommendations and compared the recommendations with those of the utility. Initial protective action recommendations were made based on both the emergency classification level and meteorological information. The emergency response coordinator presented the South Carolina Department of Health and Environmental Control protective action recommendation to the state and county decision makers, indicating agreement with the utility protective action recommendations to evacuate a two-mile radius, five miles downwind, and shelter-in-place from five to 10 miles

downwind. Protective action decisions were made by the risk counties and state of South Carolina to evacuate all downwind sectors out to 10 miles.

As the scenario continued with an unmonitored radiological release, the emergency response coordinator worked with the designated physician to evaluate the need to recommend potassium iodide. The emergency response coordinator recommended ingestion of potassium iodide by emergency workers and institutionalized individuals based on plant status and a release in progress before receipt of dose calculations. The designated public health physician concurred with the emergency response coordinator's potassium iodide recommendation, and it was presented in the decision-making coordination call. Subsequent dose projection calculations supported that recommendation. The dose assessment coordinator did not recommend potassium iodide for the general public once a dose projection was completed, which indicated that child thyroid dose was above protective action guidelines out to two miles. The rationale behind this decision was that a public evacuation was already in progress before receipt of the child thyroid dose projection calculations and the public would have limited exposure during evacuation. In addition, the team stated that they did not want the general public to return home or to go to a health department location for potassium iodide instead of evacuating the area.

Because this was an unmonitored release path, dose projections had to be developed based on field team survey data. The utility provided supplemental information that included dose projections based on utility field team measurements. Utility dose calculations resulted in exceeding protective action guidelines beyond two miles for total effective dose and around five miles for child thyroid dose.

A dose projection was completed by the state dose assessment coordinator shortly after receipt of the utility's field team survey-based dose projection. This dose projection was performed using calculated release rates from the utility's dose projection. The dose assessment coordinator compared the state dose projection to the utility dose projection, noting that the state results were lower, but were within a factor of four. The state's dose projection did not exceed protective action guidelines for total dose beyond two miles but exceeded child thyroid dose to approximately three miles. The emergency response coordinator used the state's dose projection to validate protective action decisions that were being implemented.

The emergency response coordinator and dose assessment coordinator worked together to perform a back calculation of thyroid dose using a field team iodine air sample taken at approximately three miles from the plant. The field sample-based dose projection was consistent with the state's computer modeled dose projection. The state did not have a process in place to quickly perform the back calculation from field team survey and air sample results. The back calculation was completed over an hour after the receipt of field team data and after the computer modeled dose projection was performed.
The emergency response coordinator explained that the state used a default correction factor of five to account for subsequent calculation of total effective dose. The state would not typically calculate an incident specific dosimeter correction factor but was aware of how to use the computer modeling software to perform that calculation.

For this capability the following radiological emergency preparedness capability targets were met: 1.3, and 4.5.

a. **Level 1 Finding:** None

b **Level 2 Finding:** None

c. **Plan Issue: 61-23-1.4-P-01**

**Capability Target: 1.4:** The capability to utilize appropriate factors and necessary coordination in the decision-making process used to make protective action decisions for the public.

**Condition:** The Emergency Response Coordinator and the designated Public Health Physician with the South Carolina Department of Health and Environmental Control did not provide a recommendation for the public consumption of potassium iodide to the emergency management decision makers. While potassium iodide ingestion was authorized for emergency workers and institutionalized populations, ingestion for the general public was not authorized. The South Carolina threshold for potassium iodide ingestion was 5 rem child thyroid committed effective dose. From the state dose projections, the child thyroid committed effective dose was 37 rem at the site boundary and 21 rem at 2 miles, exceeding this threshold value.

**Possible Cause:** There were numerous activities occurring during this time at the South Carolina State Emergency Operations Center. Protective action decisions were being made based on the plant status. The Department of Health and Environmental Control personnel were understaffed with several activities going on at the same time. The Emergency Response Coordinator stated that the rationale for not recommending potassium iodide ingestion to the general public was that the decision for evacuating the public out to 10 miles downwind had already been made prior to the characterization of the radiological release. The state was informed of the radiological release at 11:19 a.m. It would be unlikely that the public within approximately 3 miles of the plant would have been fully evacuated between the time of the evacuation decision at 11:45 a.m. and the dose assessment results available at 12:15 p.m.

When speaking with South Carolina Emergency Management Division, it was determined that the referenced plan needs clarity in several areas. Paragraph III states that the Dose Assessment Coordinator or designee will make the recommendation but does not specify whether it was to the South Carolina Emergency Management Division, the risk counties, or emergency support function 8. Additionally, the reference's decision/logic tree on pages 2 and 3 did not recommend the KI scheme.

**References:**

1. South Carolina Standard Technical Operating Procedures (SCSTROP), Standard Technical Radiological Operating Procedure 5.1, Protective Action Recommendations Plume Pathway 10-mile Emergency Planning Zone (EPZ), January 2023.
2. Radiological Emergency Preparedness Program Manual, December 2019, Part III, Capability Target 1.4 - Protective Action Decisions for the Plume Phase.
3. Radiological Emergency Preparedness Program Manual, December 2019, Part II, Evaluation Criteria J.6 and J.11.b.

**Effect:** Members of the public in the designated downwind Emergency Planning Zone areas of A-0, E.1, and F-1 could have received unnecessary thyroid dose as they were not informed that they needed to ingest potassium iodide. According to the evacuation time estimate, members of the public from zone A-0 (population 204), E-1 (population 536), and F-1 (population 202) would have taken approximately 140 minutes to evacuate the

area. Therefore, it is unlikely that these residents would have been fully evacuated prior to 12:15 p.m. when the results of the dose assessment were known.

**Recommendation:**

1. Provide decision makers with relevant dose calculations to verify licensee protective action recommendations for use of potassium iodide.
2. Instruct public ingestion of potassium iodide when dose calculations exceed the recommend threshold for child thyroid of 5 rem in accordance with state procedures.
3. Develop and update procedures that align Department of Health and Environmental Control processes with Emergency Management Division decision making check list.

d. **Not Demonstrated:** None

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

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

#### 3.3.1.3 Mobile Laboratory

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

During the V. C. Summer Nuclear Station exercise, the South Carolina Department of Health and Environmental Control mobile radiological laboratory personnel demonstrated effective and efficient sample receipt, preparation, and analysis of field samples. Department of Health and Environmental Control provided seven personnel and staffed all required functions at the mobile laboratory. The mobile laboratory, related equipment, and personnel were prepositioned in accordance with the extent of play agreement. Alert, notification, and mobilization were evaluated by interview, and in accordance with related procedures.

The mobile laboratory was adequately equipped for the assigned functions to receive, prepare, and analyze plume and post-plume field samples. The setup included exclusion zone, sample receipt, sample preparation for analysis, and the mobile laboratory to conduct gamma spectral analyses of prepared samples. In accordance with the extent of play agreement, prepared samples were pre-staged at the mobile laboratory which included soil, water, vegetation, and particulate and cartridge air sample media. These samples were processed through the exclusion zone, sample receipt, sample preparation, and sample analysis. Chain of custody paperwork for each sample was effectively used throughout the process. Equipment included contamination monitoring and dose rate devices, and a gamma spectrometry system. All equipment was within current calibration dates and was operationally checked. There were contamination monitors and dose rate devices available as backup equipment, as needed. Contamination control practices were used during all phases of sample processing to minimize the spread of radioactive contamination or cross-contamination of samples.

The mobile operations center safety officer used a procedural checklist to provide a comprehensive briefing for mobile laboratory staff and field monitoring team members. The briefing included safety considerations and general safety precautions, radiation exposure control and associated limits, contamination control measures, personal protective equipment, potassium iodide usage, communications systems, courier transport of field samples, emergency worker monitoring and decontamination.

Communications checks with primary and backup systems were successfully conducted with the mobile operations center. Since the mobile radiological laboratory was co-located with the mobile operations center, most communications were through direct discussions. Communications were consistently clear with the mobile operations center staff, as well as among mobile radiological laboratory staff, throughout the exercise. Cellular telephones and 800 megahertz radios were available as backup communications, as needed.

The safety officer routinely checked exposure levels for the mobile radiological laboratory staff every 20 minutes. Potassium iodide was not required since the laboratory location was outside the 10-mile emergency planning zone.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 3.1, and 4.4.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues**

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

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

#### 3.3.1.4 Mobile Operations Center/Field Team Management

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

The South Carolina Department of Health and Environmental Control field team director successfully demonstrated the ability to provide direction and control for field team oversight. The field team director effectively provided exposure control decision-making processes and managed field team radiation exposure ensuring appropriate measures were taken to protect the health and safety of the emergency workers. The field team director managed field teams to ensure appropriate radiation survey data was collected for use by dose projection personnel. There were three field teams deployed for this exercise: two state evaluated teams (Bravo and Charlie) and one non-evaluated federal team from the U.S. Department of Energy, Radiological Assistant Program Region 3.

The mobile operations center consisted of the operations officer, safety officer, and the field team director. Field team members were notified of the alert notifications via cellular phones and redundant notifications were received via text and email. The utility alert notification form was emailed to the operations officer. The operations officer initiated the call roster for mobilization. The operations officer explained how they were capable of 24-hour staffing using civil support teams and support for neighboring states. The field team director directed and controlled the field team members, while the safety officer requested readings of all personnel assigned dosimeters every 20 minutes.

The mobile operations center was equipped with supplies, computers, 800 megahertz hand-held radios, satellite radio/phones, cellular telephones, landline telephones, and a printer/facsimile machine. Communication between the field team director and field teams was constant. Redundant communication methods were used to ensure accurate transfer of information. There were no communication system failures that impacted emergency

operations. They also had maps, charts, procedure books, and use of two incident management software programs for monitoring the field teams' radiation survey and air sample information. The field team director assigned a team to areas downwind where environmental dosimeters were located for continuous area monitoring. Each team exchanged the environmental dosimeters with new ones in anticipation of the radiation release for accurate monitoring of this specific incident.

Prior to the deployment of the field teams to their survey staging areas, the safety officer and field team director issued dosimetry/survey instrumentation, and provided a safety briefing, exposure control briefing, and established radio communication with the field teams. The field team director used meteorological data characterizing the plume direction, edge, and centerline to determine the appropriate areas to deploy the field teams. Field teams were deployed to locations approximately four and five miles downwind; with teams at the projected plume centerline and both edges. Prior to the notification of the General Emergency with release, the teams were already in proximity based on controller's inject for meteorological data identified. Therefore, the field team director decided not to have the field team's transverse the plume.

Radiation surveys were taken at assigned locations and the field team director requested radioiodine air samples at locations that showed greater than two times a normal background radiation level. Vegetative and soil sample collection were demonstrated. When surveys and air samples were completed, the field team director instructed teams to go to low background locations, purge iodine air sample media, provide the samples to the field team sample relay for transfer to the mobile radiological laboratory for analysis. Ambient radiation measurements were input into the incident management software program that could be viewed by designated personnel. Additionally, a picture of the written results was texted and emailed to the dose assessment team. The field team director used a paper map primarily for communicating team assignments.

The field team director immediately informed the dose assessment team, located at the state emergency operations center of field survey measurements. Field survey data was provided to the dose assessment analysis via incident management software programs and a picture of the results in a text or email.

The safety officer requested field teams to track their radiation exposure and ensured that the field teams were within administrative radiation exposure limits. The operations officer explained the process for approving an emergency worker to exceed their administrative radiation exposure limit. When notified of the radiation release, the field team director directed field teams to ingest potassium iodine in accordance with the simulated signed letter provided by the medical officer.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 2.1, 2.2, 3.1, 4.1, 4.2, and 4.3.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

### 3.3.1.5 Field Monitoring Teams

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

South Carolina Department of Health and Environmental Control staff demonstrated the capability to perform field radiation measurements and collect air, water, vegetation, and soil samples that were used to calculate projected radiation doses and make protective action recommendations associated with an incident at the VC Summer Nuclear Station. Two field monitoring teams (Bravo and Charlie) were deployed for the evaluation. A Radiological Assistance Program Team from the Savannah River Site participated as Team Delta to share their expertise and answer any questions from the participants.

Emergency workers were prepositioned in accordance with the extent of play agreement. Once assembled, the field monitoring teams inventoried their equipment and supplies, and performed preoperational checks of the radiation survey instruments to ensure that instruments were within their calibration dates and responded to the check source within the acceptable range of readings. Field teams were issued dosimetry and potassium iodide, radios and satellite phones, and a copy of the standard operating procedure. Teams were provided with a vehicle that was appropriate for field monitoring. A copy of the instrument and equipment information log and the instrument operational check was provided to the field team director prior to deployment. An operability check of the air sampler was performed. Background readings were made and recorded for each survey instrument.

Redundant communication systems were in place to communicate and transmit data. The field teams used radios as the primary means of communication with state-issued cellular telephones, and satellite telephones as backup communication systems. Radio checks were conducted to ensure operability and cell phone numbers were recorded as part of the pre-deployment checks. In addition, the teams used a software tool on the cellular phone to log and transmit radiation monitoring data when connectivity allowed them to transmit the data. Field monitoring teams routinely checked electronic dosimeters and ingested potassium iodide when directed by the field team monitoring director.

The field monitoring teams were briefed by the site safety officer and the field monitoring team director prior to deployment. The briefing provided general safety precautions, radiation exposure limits, communications, personal protective equipment, and initial monitoring assignments. The emergency classification level was at Alert, and meteorological data were not yet available. A decision was made to deploy field monitoring teams into the emergency planning zone to stage them close-in to the plant, then move them when meteorological data became available.

When meteorological data was available, the field team director directed Team Charlie to a location approximately three miles away from the plant, and centerline of the projected plume pathway. Team Bravo was deployed to a preselected location.

When the plume was detected, the teams radioed the elevated readings to the field team director who instructed the team to take an air sample at their location. The teams made, recorded, and reported measurements of ambient radiation, including surveys of open window and closed window at ground level and four feet above ground, to the field team director to verify that they were in the plume. The field team director did not direct either team to perform a plume traverse in order to identify the plume edges and centerline. Both

teams successfully collected a radioiodine and particulate air sample and performed a gross count of the filter and cartridge at a background location. Contamination control techniques were used to ensure the integrity of the samples. Samples were packaged, labeled, sealed, along with a chain of custody form in accordance with their procedure, then placed in a cooler for transfer of samples to the relay sample runner.

After the completion of the plume phase air samples, the field monitoring teams each collected environmental samples for laboratory analysis as part of the ingestion phase of the exercise. Team Bravo collected a water sample, and Team Charlie collected a soil and vegetation sample. The teams followed their procedures to collect and package the samples for transfer and signoff to the sample relay runner for transport to the mobile laboratory. Both teams took measures to minimize cross-contamination.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 2.2, 3.1, 4.2, and 4.3.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

### 3.3.2 Joint Operations

#### 3.3.2.1 Emergency Operations Facility

**Situational Assessment Capability Summary:**

State of South Carolina liaisons to the Dominion Energy emergency operations facility demonstrated the ability to enhance the coordinated response to an emergency at the V.C. Summer Nuclear Station. State liaisons were from the South Carolina Emergency Management Division and South Carolina Department of Health and Environmental Control. The liaisons worked well with the utility emergency operations facility staff and communications were frequent and thorough. The liaison had adequate working space within the facility. Equipment and communications capabilities to support the liaisons and their emergency response efforts were adequate. Virtual platforms were used successfully to communicate and exchange information with various responders at the state emergency operations center.

The emergency management division liaison was an integral part of the offsite response organization conference calls, relaying information between the utility, state, and county decision makers to ensure accurate situational awareness. The Department of Health and Environmental Control liaison described the process for dose assessment and field monitoring team information exchange. Utility dose projections and field team data were expeditiously provided to state dose assessors.

For this capability the following radiological emergency preparedness capability targets were met: 1.2 and 1.3.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.2.2 Joint Information System/Center

**Public Information and Warning Capability Summary:**

State, county, and utility public information officers and spokespersons successfully demonstrated the public information and warning core capability in response to a simulated radiological incident at the V.C. Summer Nuclear Station.

Following notification of an Alert, the state public information officer received notification via a mass communications system from the state warning point to report to the state emergency operations center. The state public information officer and team, which included the news release writer, joint information center manager, and Integrated Public Alert and Warning System coordinator were pre-positioned in the joint information center in accordance with the extent of play agreement. Additionally, a public information officer representing the Newberry County Sherriff's Office was pre-positioned with the state public information team. Upon receipt of the notification to report for duty, the joint information system public information coordination line was set-up. This line allowed utility and county public information officers and spokespersons not in the joint information center to call in and share information with one another for the duration of the exercise. The joint information center was declared operational shortly thereafter.

The joint information center itself provided the state public information officer and public information team adequate space, ample communications systems, and necessary supplies and equipment. All communications systems were operable and sufficient to support response operations. The primary means of communication within the joint information system was a public information officer coordination line. While information was exchanged between state, county, and utility public information officers, little to no information was coordinated. Each entity functioned within its respective organization and information was shared as it was occurring or had occurred, and not in anticipation so it could be coordinated among all partners.

The state public information officer attended and participated in county coordination calls while the remainder of the team stayed in the joint information center and listened to the calls over a conference telephone. This allowed them to hear firsthand the decisions being made and concurred upon by county and state officials. Hearing this conversation allowed the team to edit pre-scripted news releases quickly and accurately. As each call was finished a tailored news release was available within minutes for review, approval, and signature. The state public information officer was responsible for overseeing the state news release development, review, and approval process and disseminating approved news releases on behalf of the state. This process included a public information news release writer drafting each release and the division director, chief of staff, chief of plans, radiological emergency

preparedness program manager, and/or state public information officer reviewing and approving each news release. Once approved, the public information news release writer emailed the approved news release to an exercise-specific media distribution list.

The Integrated Public Alert and Warning System coordinator was responsible of drafting and obtaining review, approval, and signature through the same process used for news releases. Once approved, the coordinator worked with the state warning point supervisor to ensure the Integrated Public Alert and Warning System process was followed and messages were disseminated via the Emergency Alert System and Wireless Emergency Alert systems. In total, four state news releases were notionally disseminated, and two Emergency Alert System and Wireless Emergency Alert messages were sent via the Integrated Public Alert and Warning System. One of the approved Emergency Alert System and Wireless Emergency Alert messages was sent to a test laboratory to ensure various parts of the message met content guidelines and word count restrictions.

Two virtual media telebriefings were conducted via a video conferencing platform. Prior to each media telebriefing the state public information officer summarized critical information and key decisions and recommended a speaking order based on this information. Both the information and order were concurred upon by the spokespersons. The state public information officer and spokesperson facilitated the media telebriefings and spokespersons representing the utility, Fairfield, Richland, Lexington, and Newberry counties notionally shared utility or county-specific information with the public and media. Once each spokesperson had spoken, the mock media was given an opportunity to ask questions; no questions were asked following both media telebriefings.

The JIC manager, news release writer, and Integrated Public Alert and Warning System coordinator all received and responded to rumor control/media inquiries. They were asked if there was a release and were able to confirm via previously disseminated messaging that a release was in progress. They received other calls and questions related to potassium iodide, siren activation, etc., They were unable to answer these questions on their own and consulted the state public information officer on what their response should be to these questions.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 3.1, 3.2, and 3.3.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

### 3.3.3 Risk Jurisdictions

#### 3.3.3.1 Fairfield County Emergency Operations Center

**Operational Coordination Capability Summary:**

The Fairfield County Emergency Operations Center staff successfully demonstrated critical tasks associated with operational coordination in response to an incident at the V.C. Summer Nuclear Station. Participating agencies and personnel demonstrated knowledge of radiological emergency plans and procedures and made informed decisions to protect the health and safety of the public.

In accordance with the extent-of-play agreement, responders were pre-staged in the vicinity of the emergency operations center. Select emergency management staff prepared the emergency operations center and the director declared it operational prior to mobilizing support staff. Upon receipt of the "Alert" notification via the utility's dedicated mass notification system, the director instructed communications officers to notify designated staff to respond the emergency operations center. Staff were pre-identified in the county's mass notification system for rapid notification via phone, email, and text. Emergency management staff explained the 24-hour staffing capabilities and regular maintenance of activation rosters. Supporting agency personnel responded and staffed the emergency operations center in timely manner.

Staff utilized the limited space of the emergency operations center effectively and leveraged modern technology to maintain situation awareness. Staff used an array of digital displays, white boards, and mapping products strategically placed throughout the emergency operations center. The emergency operations center manager routinely provided injects to prompt action or discussion and followed up with the appropriate agencies to ensure resolution. Staff utilized computers to update and manage their activities in the web-enabled crisis information management system.

Communications for emergency operations center staff and other response agencies was accomplished primarily using landline telephones, with backup communication methods being available through cellular phones, the county's electronic messaging system, the incident management software system, and various emergency services 800-megahertz and 400-megahertz radio frequencies used by the county's public safety agencies. Additional backup satellite radio communications capabilities were available in the county's 911 communications center if needed. There were no communication failures noted during the exercise.

The Fairfield County Council Vice Chairman was the decision-making authority, while the Fairfield County Emergency Management Director coordinated the county response. Fairfield leadership and select staff participated in regular decision line calls to coordinate precautionary actions and protective action decisions with the state and neighboring risk counties. After each decision line call, the director briefed the entire staff and encouraged supporting agencies to provide updates for overall situational awareness. Emergency operations staff worked effectively to gather, analyze, and present emergency information to help facilitate and support critical decision- making throughout the emergency.

The councilman, director, public information officer, and state and utility liaisons participated in regular decision-line conference calls with other impacted offsite response organizations. The state facilitated these calls, but the counties provided concurrence on all precautionary and protective action decisions. The first decision line call occurred after receiving the Alert notification. Fairfield County concurred on the issuance of a "Stay Tuned" Integrated Public Alert and Warning System message to alert and notify the public. After receiving the Site Area Emergency notification, Fairfield County leadership convened with other decision makers on the conference line to enact the following precautionary actions: issuance of potassium iodide to emergency workers and institutionalized persons, agricultural advisory, hunting and fishing advisory, waterway clearance, rail and flight restrictions, and early release or relocation for Fairfield and Newberry schools. The General Emergency notification included protective action recommendations by the utility to evacuate three zones (A-0, E-1, F-1) and shelter-in-place two zones (E-2, F-2). One of the recommended evacuation zones, A-0, was in Fairfield County. Fairfield County decision makers discussed the recommendations with the state and other risk counties on the decision line. Ultimately, the counties concurred on the protective action decision to evacuate all five zones (A-0, E-1, F-1, E-2, F-2), including the activation of Integrated Public Alert and Warning System and subsequent public messaging. Fairfield County leadership and the other offsite response organization convened a final decision line call to discuss potassium iodide ingestion based on field monitoring data and dose assessments. The counties concurred with the South Carolina Department of Health and Environmental Control's recommendation for emergency workers and institutionalized individuals to ingest potassium iodide.

The director discussed decision-making for students and those with access functional needs. In the absence of the school district representative, the director and county councilman decided to implement an early release for district schools after receiving the notification of a Site Area Emergency from the utility. Fairfield County has two elementary schools in the 10-mile emergency planning zone and a magnate school utilized as a community reception center and congregate care facility. The schools would be notified by district officials or emergency management personnel. Additionally, emergency management staff maintain a list of transportation-dependent citizens and those with access and functional needs. These lists are reviewed and updated regularly and made available to emergency operations center personnel via the crisis information management system. There were no additional special populations identified in Fairfield County.

The county's radiation safety officer managed exposure control for emergency workers supporting Fairfield County. At the Site Area Emergency classification, the county department of health representative discussed the recommendation to distribute potassium iodide to emergency workers and institutionalized persons. They explained that the county was provided adequate potassium iodide quantities for distribution to emergency workers. Potassium iodide for the general public was stockpiled at the county health department and delivered to reception centers for emergency distribution. Potassium iodide inventories were verified during a staff assistance visit on February 7, 2023. After the county concurred on the recommendation for emergency workers and institutionalized individuals to ingest potassium iodide, the director informed the county's radiation safety officer.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, and 3.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

**Public Information and Warning Capability Summary**:

The emergency management director explained that the integrated alert and warning system was the primary public alert and notification system for an event at the V.C. Summer Nuclear Station. That information advising the public of protective actions would be sent via the Integrated Public Alert and Warning System by the state emergency operations center. The state emergency operations center was responsible for activating the Emergency Alert System. The emergency management director said that upon notification of a failure of the integrated alert and warning system, backup route alert warning teams would proceed immediately to pre-assigned areas utilizing mobile sirens, loudspeakers, and horns to notify the public and provide instructions.

Back-up route alerting was discussed during the exercise and would have been accomplished by designated teams of local law enforcement and fire department personnel. The county emergency operations center had readily accessible information showing specific team rally points and their corresponding routes. During the exercise, the state emergency operations center notified the county of successful, simulated integrated alert and warning system activations after each system use.

The county public information officer at the emergency operations center provided informational messages to the public. The public information officer presented two news releases to the emergency management director for review and approval before releasing the information to the joint information center. The information provided to the joint information center was uniform, timely, and accurate.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

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

Fairfield County Law Enforcement personnel successfully demonstrated the ability to establish and staff traffic and access control points in response to an incident at the V.C. Summer Nuclear Station. Personnel were knowledgeable of county plans and agency responsibilities.

A law enforcement representative in the emergency operations center explained that the personnel were mobilized by supervisors, emergency operations center staff, or the 911 communications center. Following the notification of a Site Area Emergency and in anticipation of activating traffic control points, the county's radiological safety officer conducted an emergency worker exposure control briefing for sheriff's deputies assigned to traffic and access control activities.

During the briefing, the radiological safety officer distributed personal radiological detection equipment, as well as potassium iodide, and briefed the deputies regarding radiological exposure limits, personal exposure monitoring equipment, reporting, record keeping, equipment turn-in, and potential decontamination procedures at the completion of their assignments. The radiological officer also provided potassium iodide information along with instructions for ingesting the potassium iodide.

Through interviews, the sheriff deputies described the roles and responsibilities of traffic control point officers. The deputies described how traffic control point officers would provide written instructions directing evacuees to the reception or congregate care center for assistance. Communications for traffic control activities would be personal cell phones or two-way radios mounted in vehicles. The deputies participated throughout the exercise, proactively planning for changes in plant conditions and county response capabilities. Personnel identified any shortfalls noted would be supplied by agencies in the county emergency operations center.

When a simulated impediment occurred along an evacuation route, appropriate staff in the emergency operations center promptly met to develop a strategy to re-route traffic and remove the obstruction. The law enforcement representative described how traffic would have been redirected, and new traffic control points would be established to manage the new traffic flow until the impediment was cleared. The law enforcement representative developed plans to redirect traffic for three traffic impediments. The emergency management director instructed the public information officer to prepare a news release for the impediment that impacted the route to the reception center.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.3.2 Lexington County Emergency Operations Center

**Operational Coordination Capability Summary:**

The Lexington County Emergency Management Division staff successfully demonstrated operational coordination during the V.C. Summer Nuclear Station radiological emergency preparedness exercise. The Lexington County Emergency Management Director's effective coordination with response organization counterparts led to successful response operations.

The warning point supervisor received the initial Notification of an Unusual Event from V.C. Summer Nuclear Station via a dedicated cell phone at the command desk located in the Lexington County warning point. The warning point is a secured room in the same building adjacent to the emergency operations center. Redundant internal and external communications systems provided continuous communication and situational awareness within the emergency operations center. Emergency alert notifications received on cellphones and telephones were the primary systems used for notification.

Parties were requested to confirm receipt to validate message contents were received. Staff was mobilized to report to the emergency operations center after receipt of the Site Area Emergency notification. The emergency operations center had trained staff and could provide staffing rosters to support 24-hour operations. In addition, staff had computer workstations, and the facility contained adequate equipment and displays to support the response.

The South Carolina Emergency Management Division also facilitated conference bridge calls to share utility, state, and county incident statuses and updates. A web-based incident management system was used to track significant events and documentation. Several communication challenges occurred but were resolved during exercise play. These challenges included internet connectivity, audio disruptions, and wi-fi outages. All challenges were quickly resolved with no impact to response operations.

The Lexington County Emergency Management director conducted status updates for staff members in the emergency operations center after receiving new information, usually via the emergency notification form messages and following the county conference calls. The director also requested that the Dominion Energy liaison assist in briefing the plant's status as the situation evolved. In addition, Lexington County participated in the conference bridge calls facilitated by the South Carolina Emergency Management Division. The calls included a discussion of the current plant status, any recommendations, precautionary actions, decision-making concurrence, and operations updates for South Carolina, Dominion Energy, Fairfield, Lexington, Newberry, and Richland counties.

Two protective action decisions were made, as well as two precautionary actions. The first decision was activating the Integrated Public Alert and Warning System to provide the public with a stay-tuned message to monitor local media. Next, agricultural, hunting, and fishing advisories, waterway clearing activities, and rail and flight restrictions were issued. Lexington County also completed the precautionary action of relocating schools to ensure the safety of students in the emergency protective zone area and freeing up potential reception and congregate care centers that would be located at some of the schools. After a radioactive release was identified, the decision was made to evacuate zones A0, E1, E2, F1, and F2. While none of these zones were in Lexington County, the county did assist in the evacuation by halting inbound traffic to the affected zones while ensuring the evacuation routes remained open and clear of impediments. The second Integrated Public Alert and Warning System message was released, advising residents of those zones to proceed with

evacuation. The final decision was for emergency workers and institutionalized individuals to ingest potassium iodide based on the South Carolina Department of Health and Environmental Control recommendation.

The director coordinated with emergency services functions to ensure the implementation of precautionary protective actions and decisions. For example, before the first protective action recommendation, the director coordinated with the deputy county administrator to relocate students to the paired schools. Additionally, the director worked with the Sheriff's Department to ensure they had resources available for traffic control. When the decision to ingest potassium iodine was made, the director coordinated with the South Carolina regional coordinator to ensure they had adequate supplies.

The Lexington County Fire Services and Lexington County Sheriff's Department representatives explained the emergency worker staffing process through interviews. Emergency worker kits would be requested from South Carolina. Staff members assigned to emergency worker roles would retrieve equipment and receive briefings from the Crossroads Fire Department. When the potassium iodine ingestion decision was made, the representative described how they would use department communications systems to ensure all assigned emergency workers were notified to ingest potassium iodine.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, and 3.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

**Public Information and Warning Capability Summary**:

The Lexington County Public Information Officers successfully demonstrated public information and warning during the V.C. Summer Nuclear Generating Station radiological emergency preparedness exercise. The public information officers demonstrated the ability to work with the joint information center to distribute information to the public in a timely manner.

South Carolina utilized the Integrated Public Alert and Warning System for alert and warning. The South Carolina Emergency Management Division initiated the Integrated Public Alert and Warning System for Lexington County. The Integrated Public Alert and Warning System used the emergency alert system, wireless emergency alert, and National Oceanic and Atmospheric Administration to dispatch messages. Each Integrated Public Alert and Warning System message was available in English and Spanish. Should the system experience any failures, the emergency management director explained that Lexington County would have initiated the county-specific alert messaging system and would have initiated backup route alerting procedures. The Lexington County Fire Services Chief accurately explained the plan to utilize the Crossroads Fire Department to initiate and complete the backup route alerting procedures, as outlined in Lexington County's plan. The Integrated Public Alert and Warning

System messages were received by Lexington County Emergency Management Division staff in a timely manner after the South Carolina Emergency Management Division released the messages.

The public information officers attended all joint information center conference line calls, which occurred when new information was received, or decisions had been made. The Lexington County public information officer provided the status of Lexington County for press conferences. The Lexington County public information officers coordinated the development of one press release and sought approval from the emergency management director and the county's deputy administrator before being released.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

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

The Lexington County Sheriff's Department representative successfully demonstrated management of traffic and access control points and emergency workers during the V.C. Summer Nuclear Station radiological emergency preparedness exercise. The Sheriff's Department representative accurately explained mobilization procedures, emergency worker management, communications systems, and implementation of traffic control points.

During the exercise, a portion of the I-26 highway was closed to prevent entering the emergency protective zones likely to be affected by a plume based on the meteorological conditions. In Lexington County, inbound traffic (heading towards the emergency protective zone) was halted on I-26, and outbound traffic remained open to assist the evacuation processes. The Lexington County Sheriff's Department representative explained that they would report back to the Sheriff's Department to begin the mobilization process for staffing of the traffic control points. Following the completion of their shifts, the Sheriff's Department staff would report to the emergency worker decontamination point to be monitored and for equipment return.

It was explained that emergency worker dosimetry and potassium iodine would be obtained through coordination with South Carolina Emergency Management Division. Other equipment, such as signage and cones, were already available to Sheriff' Department staff. If more equipment were needed, the Sheriff's Department explained that request for additional supplies would be passed to the Lexington County emergency operations center. The Sheriff's Department representative also described the communications systems that would support traffic control points. The emergency operations centers liaisons would communicate with counterparts via cellphone, handheld or vehicle radios.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.3.3 Newberry County Emergency Operations Center

**Operational Coordination Capability Summary**:

Newberry County Emergency Services established and maintained a unified and coordinated operational structure and process that appropriately integrated all critical stakeholders and supported the execution of core capabilities successfully during the V.C. Summer Nuclear Station exercise.

Emergency operations center staff were prepositioned in accordance with the extent of play agreement. Additional staff was alerted and mobilized by the Emergency Services Director successfully using a secure notification system. The Emergency Services Director demonstrated proficiency in facilitating the activation of the emergency operations center. Twenty-four-hour shift rosters were maintained by each agency for continuous operations. The Emergency Services Director managed both in-person staff and established a virtual platform to communicate with other counties and state representatives.

Primary communications with V.C. Summer Nuclear Station were via the dedicated emergency notification network. Commercial landline telephone served as an alternate method of notification. Computers, cellular phones, and automated notification systems were also utilized. Landline telephones provided primary communications in the operations center. The coordination conference calls were over a dedicated conference bridge line which was led by the state operations center command staff to provide situational awareness and coordination between the state and risk counties. Cellular telephones and computers were also utilized. There were four monitors and displays in the operations center that kept staff informed of current plant emergency status, emergency planning maps with wind direction, significant events, and the local news. The emergency operations center was well-equipped to support extended operations.

The Emergency Services Director provided direction and control to the emergency operations staff. The director held update briefings with the emergency operations staff and the nuclear station liaison for situational awareness amongst the group after each emergency notification form was received from the nuclear station. The director participated in all State coordination conference calls with the other risk county and the state of South Carolina to review the nuclear station conditions and emergency classification levels. Before each county conference call, the director reviewed all information the emergency operations center staff provided to ensure that the county was prepared. Precautionary actions and protective action decisions were discussed on State coordination conference call.

Precautionary actions included instructing residents to stay tuned to television and radio, waterway closure, issuance of potassium iodide to emergency workers and institutionalized individuals, relocation of school children, a hunting and fishing advisory, an agriculture advisory, and flight restrictions. Following the General Emergency declaration, a protective action decision was made to evacuate zones A0, E1, E2, F1 and F2. That decision differed from the utility's protective action recommendation for zones E-2 and F-2 to shelter in place. Factors contributing to the decision to evacuate those zones included population numbers, evacuation time estimates, clarity of messaging, and conservative decision-making. When asked, those factors were justified on the decision line by the Emergency Services Director. During the discussions regarding protective actions following the General Emergency, another message was received from the utility indicating that a release was in progress. While this information did not ultimately affect the decision, it prolonged the decision-making process. Given the circumstances, the decisions were made without undue delay.

Protective measures for citizens with access and functional needs were coordinated by the Newberry County Emergency Services Director and the Newberry County Board of Rescue representative. Newberry County had confirmed 49 access and functional needs persons within the county, with 31 needing assistance. The personal information regarding location and type of needs was kept within a database that the Newberry County Board of Rescue maintains. Upon request for transportation of those with access and functional needs, the Newberry County Board of Rescue representative coordinated transportation resources, including county school buses and ambulances, to pick up those personnel. It was discussed that if the county school buses were still in use by the schools, other modes of transportation would be used.

Decisions for managing the radiological exposure of emergency workers were a coordinated effort between the Emergency Services Director and the emergency operations center representatives responsible for workers in the field. No specific decisions were warranted during this exercise; however, the Emergency Services Director was prepared to coordinate with the Department of Health and Environmental Control representatives to make informed decisions if needed. The radiological officer was prepared to issue radiological exposure control equipment to couriers for distribution to county responders. All emergency workers were trained in its use, and the couriers could provide just-in-time training to workers when delivering the kits.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, and 3.1.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

**Public Information and Warning Capability Summary**:

Public information staff from Newberry County delivered coordinated, prompt, reliable, and actionable information for the whole community. Emergency information and instructions were messaged to the public and the media while operating within a virtual joint information system.

Public information staff used computers, cellular phones, landline conferencing telephones, email, conference bridge lines, and a video conference platform to communicate and collaborate in support of emergency operations. A public information coordination bridge line for exclusive use by joint information system staff was established following notification of Alert. The coordination line was used to establish and maintain communication among public information officers for joint information system coordination. A video conference platform was used to conduct media briefings, with a video streaming link available for remote viewing. No communication failures were observed. Sufficient equipment, maps, displays, supplies, and administrative resources were available to support emergency operations.

The decision to activate the alert and notification system was coordinated by command staff on their discussion line following declaration of Site Area Emergency and again following the protective action decision to evacuate zones A-0, E-1, F-1, E-2, and F-2. All stakeholders reviewed and concurred upon the modified pre-scripted messages prior to their release. Following concurrence, wireless emergency alerts and Emergency Alert System messages were broadcast from the state emergency operations center via the Integrated Public Alert and Warning System. Newberry County public information staff also activated reverse calling software to notify registered residents with the same information.

Public information staff demonstrated the preparation and delivery of coordinated, prompt, reliable, and actionable information to the public in news releases and press conferences. Newberry County issued one individual county news release prior to activation of the joint information system. The director used a modified pre-scripted message template, which was reviewed by the emergency management director prior to release to the public and media. Once the joint information system was activated, subsequent messages were released using language developed in the joint information system. Any county specific information could be added if needed. Pre-scripted message templates were modified to include accurate precautionary and protective action decisions made by command staff on the discussion line. Draft messages were shared in the joint information system email group for coordination, review, and editing by public information staff prior to approval. The release of approved messages to the media and public was simulated by email to a mock media distribution list. A total of four news releases, were developed by Newberry County. News releases included accurate emergency information and instructions consistent with the protective action decision.

Two press conferences were conducted to further discuss the incident and to reiterate the precautionary and protective actions. The Newberry County Public Information Officer served as a spokesperson during the second press conference and provided accurate information and instructions consistent with the precautionary and protective action decisions as applicable to Newberry County.

Newberry County public information staff received and appropriately addressed questions from citizens via controller inject. The public inquiry representative used the utility's emergency preparedness brochure and current news releases as references when

addressing questions from the public. She coordinated closely with other public information staff and would have shared rumors or trends if any had been identified during the exercise.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

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

The South Carolina Highway Patrol, Newberry County Sherriff's Office, and the Newberry City Police Department were mobilized and prepared to respond to the simulated events impacting the area around the VC Summer Nuclear Plant. They demonstrated the capability to identify and request additional resources as needed via the web-based electronic incident management system.

Officers in the Newberry County Emergency Operations Center received several exercises injects for traffic impediments impacting evacuation routes in the emergency planning zone. They coordinated well within the emergency operations center and externally to have the impediments quickly resolved.

A South Carolina Highway Patrol officer who would be assigned to a traffic control point explained his duties and was well prepared to execute the mission. Prior to establishing a predesignated traffic control point, the officer would be issued radiological exposure control equipment by a courier who is qualified to provide just-in-time training. The officer was familiar with the exposure control equipment, administrative dose values, and appropriate record keeping. The officer had appropriate equipment to establish and staff a traffic control point. Assistance with barricades was requested and provided by Newberry County Emergency Services. The South Carolina Department of Transportation could also assist with additional resources. Redundant communications capabilities are maintained by the officer, and he could easily communicate with his supporting staff or rapidly receive instructions from county decision makers. A traffic control point binder provided detailed instructions for traffic control point locations, traffic flow, and the locations for the appropriate reception and congregate care center.

Through the actions of the responding agencies, traffic impediments were removed, and traffic control was maintained, likely resulting in an orderly evacuation.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.3.4 Richland County Emergency Operations Center

**Operational Coordination Capability Summary:**

The Richland County Emergency Operations Center staff successfully demonstrated emergency operations management to an incident at the V.C. Summer Nuclear Station.

Key staff received notification from the utility at the Notice of Unusual Event emergency and demonstrated mobilization of the Richland County Emergency Operations Center. The Richland County Emergency planner contacted key staff at Alert to notify them of the emergency and prepare to convene to the emergency operations center. The emergency operations center was activated in short order with key positions in place to begin managing the emergency.

Direction and control ultimately rested with the Emergency Services Director for Richland County. The director was advised by the emergency manager and the emergency planner who continuously updated the director and consulted him on protective actions. The emergency manager briefed Richland County's protective actions on the state's coordination conference call.

Richland County successfully demonstrated pre-planned protective actions following Richland County Plans and standard operating procedures. Several pre-planned protective actions were demonstrated including preparing potassium iodide for distribution, air and rail traffic exclusion, a hunting and fishing advisory, park closures, waterway clearance, and highway closure for evacuation planning. The county also triggered the state Dosimetry Redistribution Plan which reallocates statewide radiological equipment to counties effected by an emergency. The public services director of Richland County made the final decision on protective actions for Richland County.

Appropriate and timely protective action decisions were made as a group within the unified command using state field team data, the utility plant offsite sensing radiological data, and meteorological data. The emergency planner provided frequent in person briefings to emergency operations staff to keep them informed of emergency information and protective actions. The briefings were followed by round table discussions with emergency support functions to identify actions they were taking and to encourage proactive planning. Access and functional needs residents would be transported by emergency medical services, and there were no institutionalized or hospital facilities in the county emergency planning zone. Schools were kept on notice but were not affected by the emergency. At the General Emergency, the risk counties had lengthy discussions regarding the evaluation of area E2 and F2 rather than sheltering in place and evacuation of residents on interstate highway 26.

Richland County Emergency Operations Center successfully demonstrated emergency worker exposure control decision making processes. Per interview with the Richland County Radiological Officer emergency workers in the field had kits with permanent record dosimetry and self-reading dosimetry with a range of 0-5 roentgen in each kit. Per interview the county

observed the South Carolina State Department of Health and Environmental Control report back, turn back, infrastructure, and life savings thresholds which are 1 roentgen equivalent man, 2 roentgen equivalent man and 5 roentgen equivalent man. The primary emergency worker decontamination is located at the same school used by the county for the reception center for the public.

The Richland County Emergency Operations Center successfully demonstrated the capability to manage radiological exposure and dose to emergency workers. All equipment used by Richland County responders was verified during a Site Area Visit by FEMA Site Specialist on February 6-7, 2023. During the exercise a preliminary protective order was made to move potassium iodide out of storge and stage it for responders but not to digest. The Potassium Iodide was then placed in the kits until responders were asked to ingest the pills. The state activated the Dosimetry Redistribution Plan which triggered risk counties throughout the state to redistribute radiological equipment to risk counties with emergency needs. The process for authorizing approval to exceed dose limits was also discussed.

The county had multiple communication systems available including very high frequency, ultra-high frequency, satellite, web-based emergency management application, statewide band repeaters, amateur short wave, state mass notification, emergency management web-based networking. No communications failures were observed during the exercise.

For this capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 3.1, 3.2, and 3.3.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

**Public Information and Warning Capability Summary**:

County public information officers, emergency operations center, and operations staff successfully demonstrated the public information and warning core capability in response to a simulated radiological incident at V.C. Summer Nuclear Station. Prepositioning of participants in the local area was permitted per the extent of play agreement. Public information officers from the Richland County Emergency Services Department and the Public Information Office demonstrated the ability to provide accurate emergency information and instructions for the public and media in a timely manner.

The public information staff operated for the first time in a separate room located adjacent to the entrances to the emergency operations center and the command group room. The change was driven due to the limited size of the operations center and the need for frequent verbal communication between public information officers and participants on the joint information system conference bridge line. This location change worked well for the public information team. During the early stages of the response, the public information team was unable to connect to the internet, requiring email, texting, and telephone communication

using cellular technology with no delays noted. The county spokesperson remained in the command room for most of the exercise to allow real-time information gathering.

The Richland County public information officers verbally and virtually participated in the joint information system from the emergency operations center. The primary means of communication was a conference and coordination bridge line. A separate interned-based video conferencing platform was used to conduct media briefings virtually. Talking points used by the county spokesperson during media briefings were coordinated between the command and operations staff for accuracy and timeliness, with a stay-tuned message presented both times. Media briefing #1 included a county state of emergency declaration, an established congregate care facility, and hunting/fishing/waterway restrictions. Media briefing #2 included no evacuation orders for Richland County residents, a shutdown of Interstate 26 Westbound, the name and location of the reception and congregate care center, a local state of emergency declaration, and potassium iodide information.

Properly formatted County news releases were developed from scratch by the public information team without templates. All were timely, accurate, approved, and procedurally distributed without delay. Joint information system participants used email to demonstrate press release distribution and for review purposes as needed. Two integrated public alert and warning system messages, available in both English and Spanish, were developed and effectively coordinated over the decision line by the state emergency operations center. Both included distribution through the emergency alerting system, wireless emergency alerts, and the National Oceanographic and Atmospheric Administration systems. The first, sent at 10:00 a.m., was a message to stay tuned to local media. The second described an evacuation order, a radioactive release, and a stay-tuned message. The first two drafts of message #2 did not include radioactive release information. Version 3 did, and the integrated public alert and warning system message was sent at 11:45 a.m.

Public inquiries were managed through the county communications team, professionally trained personnel, who deal with the public daily as a routine part of their jobs. Their presence and performance consistently provided accurate information to the public, in addition to the press releases from the PIOs in both the EOC and the JIC.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

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

The Richland County Sheriff's Department had approximately 900 deputies and 106 school resource officers available for mobilization and deployment as needed. Everbridge was available for the mobilization of deputies using 12-hour work shifts. The department had

internet access to the South Carolina Department of Transportation traffic camera system to monitor vehicle flow in real-time. The county law enforcement radio system utilized 800 MHz radios for communications, with mobile data terminals available in some department vehicles. The cellular telephone system was available for backup communication.

The emergency operations center law enforcement representative directed sheriff's department activities through the Region 4 area commander by radio. Nine pre-identified county traffic control points were listed. At 9:45 a.m., traffic units were selected and dispatched with deployment instructions, radiological protection briefings, and equipment issuance. Five traffic control points were selected based on current emergency information. Region 4 was notified to dispatch the units to the five Broad River Road points for standby and traffic monitoring. An additional four units were later dispatched to control points not listed in the plan needed to help with an evacuation of another county through Richland County.

Through an interview with the law enforcement representative, it was determined that traffic control point units were to read direct reading dosimetry every 15 minutes. Potassium iodide distribution and ingestion orders to the deployed units would occur by direction from the emergency operations center law enforcement representative to the area commander.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

### 3.3.4 Ingestion Tabletop Exercise

#### 3.3.4.1 State of South Carolina Emergency Operations Center

**Operational Coordination Capability Summary**:

In response to the post-plume phase protective action decisions concerning restricted areas, relocation, return, and re-entry, for South Carolina Emergency Management Division, Fairfield County, Newberry County, and specific emergency support function stakeholders previously activated during the plume phase successfully participated in an ingestion phase group discussion led by the South Carolina Emergency Management Division Radiological Emergency Preparedness Program Technical Officer (herewith referred to as the Technical Officer).

Discussions were advised by the Advisory Team which consisted of the United States Environmental Protection Agency, Food and Drug Administration, Federal Radiological Monitoring and Assessment Center, and United States Department of Energy Radiological Assistance Program.

Emergency support function stakeholders included Health and Medical Services (8), South Carolina Department of Health and Environmental Control (10), Emergency Traffic Management (16) including staff from South Carolina Department of Public Safety, Agriculture and Animals (17) including staff from Clemson University Livestock Poultry Health and South Carolina Department of Agriculture, National Guard (19), and Business and Industry (24).

Through discussion of a postulated post-plume map generated by the Federal Radiological Monitoring and Assessment Center, the means to identify and determine the boundaries of restricted areas based off current guidelines, plans, and procedures was successfully demonstrated at four days post incident. At each step group concurrence was posted and met with agreement. A map was displayed to the group using a geographical information system identifying previously evacuated zones inside of the ten-mile emergency planning zone along with a projected area of dose exceeding established guidelines marginally beyond the ten-mile boundary. This provided the framework from which the groups, defined earlier, could discuss an additional boundary of exclusion or buffer around the restricted area. Initially, zip codes were proposed as recognizable areas to describe boundaries, however the group ultimately decided road names were a better method for definition. Input from local county jurisdictions, led by the Technical Officer, ultimately defined a polygon of relocation around the post-plume map from which Newberry and Fairfield County could further define traffic and access control points. Emergency Traffic Management coordinated from the State Emergency Operations Center, would be provided for traffic control points along with options for support from the National Guard (19), or the Emergency Management Assistance Compact were discussed. Once the buffer exclusion boundary was defined, the geographical information system was used to generate population estimates that included data on households, persons with disabilities, elderly persons, and businesses among others. This provided the framework from which the group could discuss methods used for controlling access to and egress from restricted areas, including dosimetry and decontamination of individuals and equipment. The Technical Officer polled the county participants for concurrence of the relocation decision. Each agreed.

Fairfield and Newberry County staff used local knowledge and relevant geographic information system data to make timely decisions for relocation, reentry, reoccupation, and return. Using a restricted area map produced by the geographical information system, the impacted counties collaborated with state and federal partners to determine appropriate restricted areas and buffer zones. Roads, zip codes, and property parcels were considered and discussed as identifiable boundaries to identify the buffer zone. It was determined that roads would be used to initially define the boundaries. The counties identified locations for manned and unmanned access control points at all ingress points along the outer edge of the buffer zone, as well as monitoring and decontamination sites at or near the egress points. They also discussed options for, and the challenges associated with, controlling access along interstate highways and waterways bisected by the buffer zone. Local jurisdictions determined that they would have the primary responsibility for access control, monitoring, and decontamination; however, resources would be supplemented by state and federal assets, as requested.

The geographical information system was accessed to gather data related to the previously evacuated area and the newly identified relocation area beyond the 10-mile emergency planning zone which was termed the “cutoff area”. The population size was determined using the geographical information system data and further identified by household or business to

be relocated. The potential types of notification would be the integrated public alert and warning system, the emergency alert system, and news releases. The notifications would advise residents why to leave and what items to take for immediate continuance of life at a temporary shelter/housing. Geographical information system personnel listed buffer zone area demographics such as number of households, access and functional needs, businesses, and the population without transportation. The Technical Officer polled the county participants for concurrence of the relocation decision. Each agreed.

A re-entry discussion was posed, and discussion occurred as to the authority of the Governor during a State of Emergency to control re-entry. South Carolina being a home rule state, presented a point of discussion such that the local counties would be incorporated into any executive decisions at the state level. A system of on-demand credentialing was discussed with escorts for residents and non-escorts for others in business and industry. Levels of personal protective equipment and dosimetry were discussed, but ultimately it was agreed a case-by-case approach would be taken. During a protracted period (at the thirty-day mark), it was discussed the National Guard (19), or the Emergency Management Assistance Compact would be invoked to support continued operations along with Recovery and Mitigation (14) for management of assistance from American Nuclear Insurers, and Stafford Act provisions of Individual Assistance.

The group discussed who would develop the re-entry criteria. Being a home rule state and with monitoring data from the South Carolina Department of Health & Environmental Control, the decision would be coordinated between the affected counties and the Governor. There could also be state legislative implications due to legalities in state laws pertaining to similar incidents involving reentry. The group devised that escorts, dosimetry, and ingress and egress training would be needed. Criteria for re-entry were one entry location, dosimetry (to include group), training, escorts (unless multiple hours are required within the zone), documentation, and residents requesting entry would be prioritized. The level of priorities would be determined later. Documentation may include information such as who, why, where, post dosimeter reading, placarded buses and/or vehicles. Monitoring requirements and data tracking of dose records may be maintained by the employer and employee. The radiation call back/turn back limits would remain as stated in South Carolina Department of Health & Environmental Control procedures. It was advised to consult the Environmental Protection Agency Protective Action Guide manual, page 50, for additional adjustments to the restricted area as the radiation levels decreased. The group agreed that everyone and their belongings leaving the affected area would be monitored and decontaminated based on monitoring results. Lastly, the group stated that select traffic control point locations could be designated as emergency worker decontamination stations and/or reception center locations to support restricted area egress. The Technical Officer polled the county participants for concurrence of the relocation decision. Each agreed.

Fairfield and Newberry County agreed that re-entry would be a collaborative effort, likely requiring the creation of a multi-agency working group to determine priority and manage the process. Participating agencies discussed and concurred that re-entry priority should begin with life safety and restoration of critical community lifelines. During re-entry discussions, the counties described their limited authority to impose or enforce mandatory evacuations or the relocation of citizens. They agreed to utilize the state's authority to mandate evacuations or relocation during a declared or public health emergency. The counties agreed on the issuance of dosimetry to individuals or groups re-entering the restricted zone for critical activities. The state and counties determined each agency would be responsible for maintaining their employees' exposure records, but no agency took responsibility for the

public exposure records. The state recommended using the current emergency worker dose limits as a starting point for re-entry but would utilize appropriate protective action guidance and federal resources to analyze and adjust dose limits as appropriate for current conditions. The counties decided escorts would be used on a case-by-case basis; however, everyone would be monitored upon exiting, and decontaminated as necessary. They also discussed defining limitations on what is removed from the restricted zone and provisions for utilizing public transportation, if available, to limit the number of contaminated vehicles.

The return group discussion began with ideas to encourage evacuees to return and resume the new normal post incident. Ultimately, it was determined that the South Carolina Department of Health & Environmental Control would do additional area monitoring, from a high visibility standpoint, to assure the public that the area was safe for return to homes and businesses. Other assurances were transparency, education, community involvement, the utility's presence, and time. The counties agreed with the measures and added that seeing these actions within the community would add confidence for a return to normal life. The group discussed the acceptable levels that would deem return and give families options for decisions. It was determined there would not be a need for additional security but there would be an increase in law enforcement due to expected community requests for assurances in life safety. The group determined that services such as government, fire services, law enforcement, school services, grocery, and day cares would need to be restored initially. It was theorized that individual homeowners may abandon homes leaving them for banks to manage. They agreed that transparent and consistent messaging would be the best approach for public relations to encourage residents to return and assume homeowner responsibilities. The Technical Officer polled the county participants for concurrence of the relocation decision. Each agreed.

Thought provoking discussion continued such that the ability of decision makers to redefine the relocation boundary based on continued scientific analysis, public perception, and levels of risk was managed in a decreasing order of severity over time. Given the post-plume map was discussed as a very conservative model, stakeholders worked out notionally how they might go about allowing residents, businesses, critical infrastructure personnel to return without restriction. It was discussed continued monitoring through already established methods, very important person visits to regain trust, transparency and consistent public messaging, and guidance on citizen science would be steps they could take to establish a framework for relaxing protective actions thus allowing for return to restricted areas, ensuring the restoration of access to vital services and facilities and utilizing Federal guidelines. Agriculture food stuffs, gardens, lawn mowing, grocery, abandoned or derelict homes, doctors' offices, schools, universities, daycares, hospice, volunteer fire departments, law enforcement routine calls for service were just some of the points of discussion about how to manage condensing the relocation boundary for both re-entry, reoccupation, and return. The town of Prosperity was identified as having a significant stake in population and critical infrastructure. Interstate-26 was identified as an area of concern inside of the relocation boundary, although most of the focus was on residents, industry, and commerce versus transient commuters. Transient commuters were discussed, however, on demand levels of risk would need to be considered and messaged for the motoring public.

The Clemson agricultural subject matter expert used maps for the predicted areas of concern for mature produce and the predicted areas of concern for milk products maps to determine which products were in the impacted areas. She recommended agricultural protective actions such as embargos, quarantine, and public messaging be based on the type of livestock and seasonal products in and around the affected areas. Radiological sampling and

monitoring should be conducted frequently to assess radiation risk levels to guide protective action decision making. A particular area of concern is misinformation which should be specifically addressed by each instance for transparent and concise public messages.

Protective action decisions were developed and concurred by state and county decision makers before being referred to the Governor of South Carolina for authorization. Multiple protective action decisions were discussed and notionally provided to the governor throughout the duration of the tabletop exercise including waterway closure, relocation, return, re-occupancy, and re-entry. No protective action decisions were referred to the governor for agribusiness stakeholders, food, and animal feed stakeholders; however, an agriculture representative discussed the issuance of embargo and quarantine orders to limit the potential spread of radiologically contaminated food outside of the ingestion pathway zone. It was explained by state and county decision makers that the implementation of protective action decisions would require coordination with multi-agency working groups and emergency support functions. If additional resources were needed to implement protective action decisions at the county level, then resource requests would be submitted by the county to the state emergency operations center for fulfilment through mutual aid, activation of the state redistribution plan, and the emergency management assistance pact.

For this capability the following radiological emergency preparedness capability targets were met: 1.6 and 1.7.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

f. **Prior Level 2 Findings – Unresolved:** None

**Public Information and Warning Capability Summary:**

The South Carolina Emergency Management Division Public Information Officer was responsible for providing accurate and timely information to the public related to a post-plume phase event at V.C. Summer Nuclear Station. Through discussion with state and county decision makers, it was explained that public alerts and notifications would be accomplished through the Integrated Public Alert and Warning System, and the federal Emergency Alert System. Additionally, South Carolina Emergency Management Division would issue and disseminate press releases via an email distribution list. Public information would also be shared on the South Carolina Emergency Management Division website and emergency preparedness mobile device application, informational pamphlets, flyers, factsheets, social media, and broadcasted over local radio and television networks. Public information would also be provided to residents who had been monitored and registered at their county reception center. Public messaging would include information pertaining to restricted zones based on geographical boundaries and transportation routes, relocation of residents within the restricted zone, return of residents to zones previously evacuated, temporary re-entry of residents to restricted zones for essential purposes, and items residents should take with them when instructed to leave their residences.

Impacted counties used updated mapping products identifying the restricted area along with sampling data, local knowledge, and census data to identify priority areas for return, reoccupancy, and relocation. Participating agencies concurred on the importance of using various forms of public messaging to calm and inform the public. The integrated public alert and warning system, news releases, and all forms of social media were mentioned to disseminate instructions and important emergency information to the public, including available assistance. The state and counties agreed that the Governor, county administrators, agency heads, or other leaders would engage the public via press briefings, town hall meetings, workshops, or other various media platforms. They discussed the importance of providing clear and transparent messaging in a unified voice. Temporary housing options, federal support, and insurance options were also addressed for the relocation of residents.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.4.2 South Carolina Department of Agriculture

**Operational Coordination Capability Summary:**

The agricultural staff representatives (Emergency Support Function 17) at the South Carolina Emergency Operations Center successfully demonstrated timely decision-making process for agricultural products after radiological deposition from an incident at V.C. Summer Nuclear Station. The team coordinated with colleagues and assessed the radiological consequences for the ingestion exposure pathway as related to the appropriate protective action guidelines. The agricultural representatives also demonstrated the capability to implement and coordinate the decisions to mitigate exposure via food consumption and address long-term radiological consequences on agricultural products.

Members from the South Carolina Department of Agriculture and Clemson University Livestock and Poultry Health staffed Emergency Support Function 17 within the state emergency operations center. The lead representative indicated that a radiological release from V.C. Summer Nuclear Station would prompt an agricultural advisory which would be issued statewide recommending a halt to all harvesting and agricultural product movements. Once deposition was determined from aerial monitoring results, a coordination meeting was conducted with Department of Health and Environmental Control to determine initial sampling needs of milk, crops ready for harvest, and emerging crops, in that order.

As part of the Day 2 tabletop ingestion exercise, Federal Radiological Monitoring and Assessment Center prediction maps were received by the state approximately 30 days (simulated) into the response. These maps indicated predicted areas where mature produce

and milk would exceed federal guidance levels for consumption. The agricultural staff indicated these maps would be used to determine initial embargo areas for specific commodities. The boundary of the embargo area would be coordinated with each county for local knowledge of roads that could be used to determine the borders of the area. Mass notifications would be made using multiple methods, including press releases, direct communication with producers, social media, mass messaging, and website communications. The federal prediction maps were used to aid in requesting state and federal sampling teams to focus on specific producers located inside the embargo areas. Certain commodities or areas would be released from the embargos if results were below federal guidelines. The actual authority for placing the embargos lies with South Carolina Department of Agriculture for consumable commodities and with Clemson University Livestock and Poultry Health for farm animals. Staff also indicated legal advisors would be consulted on questions regarding authorities on non-consumable commodities or other issues if needed.

It was stated that sample results received from state and federal sample teams would be interpreted by the sampling agencies and results presented to the agricultural group. These results would be used to release embargos, shrink embargo areas, determine potential non-consumable use of the products, and determine sampling subsequent plans. State resources were used to determine locations of commercial livestock and food producers, including processing facilities. Information on small farm producers that fall outside of commercial definitions is challenging to determine without local input. The team advised contact could be made through local emergency contacts, but assistance from state extension agencies was needed.

The staff members stated that enforcement of embargos is not considered a major security concern, but any problems would be relayed to law enforcement. The disposal of condemned agricultural products would be accomplished by following existing state plans and through consultation with Department of Health and Environmental Control.

The team consulted with a representative with United States Department of Agriculture on radiological impacts to the industry and to determine impacts of the incident on international trading. It was determined that a program would need to be developed on a federal level to ensure globally traded commodities from South Carolina were safe and acceptable. There is no current program for radiologically contaminated agricultural products, so an agreeable program would need to be established with trading partners.

For this capability the following radiological emergency preparedness capability targets were met: 1.6 and 1.7.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.4.3 Dose Assessment

**Situational Assessment Capability Summary:**

The South Carolina Department of Health and Environmental Control staff successfully demonstrated development of a 10-point soil sampling plan, ability to prioritize field samples, and performance of radiation dose calculations from laboratory sample results. The team developed a relocation area boundary map that was based on calculated derived response levels. This map was used in the Day 2 ingestion tabletop exercise by state and county decision makers in establishing a restricted area boundary for long term control of areas that exceeded protective action guidelines for radiation dose. Upon completion of the plume phase demonstration, the dose assessment team demonstrated how they would develop sampling plans. The team explained what samples would be obtained to determine relocation areas. The group was provided laboratory sample analysis results for various sample types.

The dose assessment team was provided an aerial flyover survey map noting measured radiation levels out to 30 miles. The team used the flyover map to develop a 10-point sampling plan for soil sampling. Soil sample laboratory data was provided for analysis. The dose assessment team used the isotopic sample results for input into the state's deposition dose calculation spreadsheets to calculate projected doses for the first year, and second year or subsequent years. The team used the spreadsheet to calculate a derived response level of 0.7 millirem/hour that could be used to establish a restricted area/relocation area boundary. The team explained that they would initially recommend establishing a restricted area based on limiting subsequent year derived response level, but that geographic area may be reduced in upcoming months by taking actions to reduce radiation dose to residents and taking credit for occupancy and building shielding. The flyover map was delineated with a recommended restricted area boundary, noting that relocation went beyond the 10-mile evacuated area, out to a distance 18 miles from the plant. This map was used as the starting point for the Day 2 ingestion pathway county and state tabletop demonstration.

The dose assessment group explained how they would work with the agriculture and public works representatives to develop sampling plans for determining locations for sampling of food and water products. The team used different spreadsheets to determine if water, milk, and vegetation exceeded environmental protection agency drinking water limits, and the food and drug administration's derived intervention levels for ingestion of milk and vegetation. The team validated the Federal Radiological Monitoring and Assessment Center deposition maps for mature produce and dairy products.

The Day 2 tabletop ingestion exercise was attended by applicable state of South Carolina, risk county, ingestion county, and federal organizations. The advisory team was comprised of federal partners from the Environmental Protection Agency, United States Department of Agriculture, Department of Energy Radiological Assistance Program, and the Federal Radiological Monitoring and Assessment Center. The advisory team provided guidance to the overall process, explained which federal assets would be available, and documents that could be used for more information. The advisory team was a valuable in-person asset to the exercise participants.

The first module of the ingestion tabletop exercise included a briefing from the Department of Health and Environmental Control on the sampling and spreadsheet results and the estimated relocation area. A four-day time jump was assumed. The state and county representatives used the estimated relocation area to determine an appropriate restricted

zone with a buffer area based on major roadways. The group discussed specific intersections that would require access control points with most of the boundary protected with barriers. A map was drawn designating the restricted zone boundaries and access control points. Federal partners explained the restricted area was based on worse case conditions such as no credit for sheltering, decontamination, etc. and recommended that the boundaries be drawn as close to the deposition areas as possible. The federal partners emphasized that the risk of radiation exposure had to be balanced with the stress of moving. The team discussed methods of messaging, signage, and staffing the access control points.

The restricted area discussion was followed by a module to relocate those individuals that were not initially evacuated (from 10 miles downwind to 18 miles downwind) that were now in the restricted area with a subsequent year dose of 0.5 rem. The team determined the number of households and businesses affected, methods of messaging, options for housing, and monitoring and decontamination at reception centers. The team discussed that this area could be downsized over time due to radioactive decay, weathering, soil removal, and decontamination.

The next module discussed was return of previously evacuated persons from portion of zones A0, E1, E2, F1, and F2 that were not in the restricted zone. The Department of Health and Environmental Control discussed the importance of surveys and samples to ensure that there were no “hot spots” of contamination in these areas. The federal partners explained that there would be federal assistance with long term sampling and surveys. The team emphasized that critical infrastructure and essential services must be prioritized before allowing individuals to return to their homes and businesses. County and state workshops for affected populations would be set up to reassure residents and businesses. The team determined the number of households and businesses affected and methods of messaging.

The next module discussed was reentry of individuals and businesses into the restricted area. A collaborative effort with a multiagency group led by the counties would be used to make determinations of re-entry requirements. Priorities would be given to lifesaving, protection of property, livestock feeding, and medication retrieval. Group dosimetry and escorts could be used initially until more dosimetry was available. The use of busses and dedicated vehicles was discussed to reduce monitoring and decontamination of vehicles. Monitoring requirements and dose recordkeeping would follow a similar system as used at reception centers. Additional monitoring and decontamination centers would need to be set up near the access control points. The Department of Health and Environmental Control suggested that emergency worker dose limits of 1 rem for all activities would be initially used for the general public reentry dose. The federal partners stated that 0.5 rem for the general public would be a more reasonable number.

The last module was a discussion on agricultural deposition with a 30-day time jump. Deposition maps for mature produce and dairy products were explained by the Federal Radiological Monitoring and Assessment Center. Agricultural representatives explained that dairies and farms would be prioritized based on crops in the ground ready for harvest with a quarantine and embargo on grains, produce, livestock, poultry, forages, and milk. Global concerns were discussed by the federal partners.

For this capability the following radiological emergency preparedness capability targets were met: 1.6 and 4.6.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.4.4 Joint Information Center/System

**Public Information and Warning Capability Summary:**

The state public information team, which included the state public information officer, news release writer, joint information center manager, and Integrated Public Alert and Warning System coordinator successfully demonstrated the public information and warning core capability in response to a simulated radiological incident at the V.C. Summer Nuclear Station.

The ingestion tabletop exercise began where the plume phase exercise ended the day before, with the only difference being the public information officers operated within the joint information center and not the joint information system. County and utility public information officers were not present during the tabletop exercise, so a joint information system was not necessary. Also, this portion of the exercise used an in-person discussion-based approach instead of a virtual county call to make and concur upon decisions. The state public information team listened and engaged in these in-person discussions, providing input on public information content and format. There was much discussion on what type of information should be provided and in which format it would best be communicated to the public and media.

Following the decision to lift the evacuation order a news release was developed advising residents in zone A0 in Fairfield County, and residents in zones E1, E2, F1, F2 in Newberry County they may return home if they lived in an area deemed accessible by local officials. Specific roadway boundaries were identified for both Fairfield County and Newberry County. Additional instructions were provided related to lengthy travel times, blocked roadways, etc., The news release writer drafted the news release; the news release was then reviewed and revised by the state public information officer. Once the edits were made and the draft revised, the news release was printed and physically handed to three different approvers for review, approval, and signature. Depending on availability, the approvers might change from news release to news release, but they would all be authorized to approve news releases. Those positions authorized to approve news releases included the: state public information officer, planning section chief, radiological emergency preparedness program manager, chief of staff, and division director.

The second news release outlined a controlled access plan to allow residents to check on their homes in the restricted area. The news release contained bulleted points with plan details. It also noted that access would be strictly controlled, and all necessary precautions

would be taken to protect residents from radiation exposure. The news release writer drafted the news release and the same review, approval, and signature process outlined above was used for the second news release.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.4.5 Risk County – Richland County Emergency Operations Center

**Operational Coordination Capability Summary**:

The Richland County Emergency Operations Center staff successfully demonstrated the capability to coordinate and implement protective action decisions to mitigate exposure and address long-term radiological consequences in response to an incident at the V.C. Summer Nuclear Station.

During the Ingestion Exercise Tabletop March 8, 2023, at the State of South Carolina Operations Center, Richland County Emergency Operations Center staff were provided a time advanced scenario simulating four days after a radiological release from the V.C. Summers Nuclear Plant with a wind direction from approximately 85 degrees. Based on the resulting Federal Radiological Monitoring and Assessment Center mapping, the release effected neighboring counties to the northwest, and no portion Richland County was directly impacted by the release. The exercise provided an opportunity through injects for Richland County to respond to plausible indirect impacts of the radiological release which would affect neighboring communities.

In the first scenario, Newberry County asked Richland County for assistance to provide temporarily/short term housing for 100 families or approximately 325 persons for approximately 3 weeks. The county was asked to locate longer term housing for those families and connect those families with transportation resources for work and attend schools. The inject further stipulated that Richland County discuss providing the assistance with full funding to reimburse the county for all costs and alternately discuss providing the assistance without any funding for reimbursement.

The Newberry County request would be presented to the County Radiological Officer who would provide the technical expertise and see applicable emergency plans to draft an operations plan. The County Radiological Officer would then present the plan to the County Policy Group representing the County Manager, County Counsel, County Legal, Emergency Manager, Deputy Emergency Services Director, and Emergency Services Director. The County Policy Group would need to approve the assistance.

The Richland County Emergency Operations Staff successfully discussed various sheltering plans from schools, university campus housing, and decided to use hotel housing by the Hotel Association of Greater Columbia to host the evacuees. The City of Columbia also had a metropolitan bus system, and it was suggested the evacuees be provided some charter busses for transportation with drivers. Richland Emergency Operations staff formulated several approaches to providing the assistance and discussed viable means of addressing financial barriers such as seeking American Nuclear Insurers reimbursement, seeking Federal Assistance for Hotels and Federal Rental Assistance. Discussions also included support from community organizations and the American Red Cross. Longer term housing options likely would require Federal Rental Assistance or American Nuclear Insurers financial backing.

Receiving the evacuees along with various personal item and potentially transporting evacuees to and from schools and work were areas of concern in the event individuals needed to cross restricted areas with potential contamination. To address security concerns there may be additional screening and secure zones established. Richland County has recently managed flooding events and it was evident they had several options for housing and maintaining security based on real world experience. Staff had solid communication plans to help coordinate transportation into and out of restricted areas and to communicate with responders statewide. The state activated the Dosimetry Redistribution Plan which frees up much radiological equipment and PPE statewide to support any screening if evacuees needed to traverse restricted areas. The county plans discourage temporary reentry into restricted areas by residents, until the areas are completely clear to reoccupy. The group preferred school and work be done remotely to avoid entry into restricted areas. South Carolina Department of Health and Environmental Control contamination and exposure controls would be followed.

In the second scenario, the Richland County was asked to establish a vehicle monitoring and decontamination operation to clean personal cars left behind in the area. The state would provide safe clean tow vehicle transport to the desired decontamination site. The state had approximately 1000-1500 cars to process and requested the task be completed within 60 days.

The request would be presented to the County Radiological Officer who would provide the technical expertise and see applicable emergency plans to draft an operations plan. The County Radiological Officer would then present the plan to the County Policy Group representing the County Manager, County Counsel, County Legal, Emergency Manager, Deputy Emergency Services Director, and Emergency Services Director. The County Policy Group would need to approve the assistance.

The County Policy Group would notify the state to confirm that the operation was feasible and may request any resources, such as personal protective equipment or monitoring equipment if any unmet needs were identified in planning the operation. Law enforcement could easily track registered owners using vehicle identification numbers to arrange pickup of clean cars and transportation logistics so the cars could be left to the owners or other shuttle means could be arranged.

The county would take advantage of the South Carolina State Dosimetry Redistribution Plan to ensure responders had sufficient radiological equipment and personal protective equipment for the decontamination operation. The group would purchase or lease a local carwash. Before any vehicles were loaded on towing vehicles, and survey teams would check

the cars for exterior and interior contamination where they reside. If a vehicle is found to have contamination in the interior, those vehicles would be towed directly to a secure field and parked and monitored by security. Vehicles with internal contamination would be impounded and set aside for contractor disposal as interior decontamination would not be cost effective. Vehicles which only had exterior contamination would be towed to a designated parking area and driven through the car wash and checked. Two-micron fiber filters are readily available in the county equipment inventory and would be used to filter the water runoff from the car wash to a separate contamination containment area. Cars would be run through the carwash and surveyed. South Carolina Department of Health and Environmental Control contamination and exposure controls would be followed. Security of the vehicles was a major concern for vehicles with interior contamination and those which were transported for decontamination, as officials were concerned owners would attempt to take possession of the vehicles before they had been fully processed for decontamination or disposed of if they had interior contamination. The group discussed plans for the handling and disposal of contaminated items until a private contractor could be secured for final disposal to a permanent containment site.

For this capability the following radiological emergency preparedness capability targets were met: 1.6 and 1.7.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.4.6 Risk County – Lexington County Emergency Operations Center

**Operational Coordination Capability Summary**:

The Lexington County senior staff demonstrated, through discussion in an ingestion pathway exercise, the capability to effectively manage and support Newberry County by activating personnel to establish and maintain a unified and coordinated response.

During the ingestion phase tabletop discussion, the Lexington County leadership provided insight for support of evacuees from Newberry County. In addition, they successfully provided strategies and objectives that would help evacuees transition into their county seamlessly. One of their successful actions was using a task force that would identify resources that support the evacuees. The leadership recognized the agency's community development, economic development, and emergency support functions 1,6.

In the first three modules, Lexington County leadership would have executed a plan that looked at the whole process for evacuee needs such as housing, transportation, access and functional needs, schooling, medical care, evacuee sheltering, and animal shelters. The leadership was knowledgeable in their use to provide support to Newberry County.

For this capability the following radiological emergency preparedness capability targets were met: 1.6 and 1.7.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

#### 3.3.4.7 Ingestion Counties

**Operational Coordination Capability Summary**:

During the V.C. Summer Nuclear Station 2023 Ingestion Pathway tabletop exercise on March 8, 2023, Saluda County participants successfully demonstrated the ability to make and implement protective action decisions for the post-plume phase in response to a radiological emergency at the VC Summer Nuclear Station.

Saluda County was not directly included in the predicted evacuation, sheltering, or relocation areas for the ingestion pathway scenario, thus there were no populations identified in Saluda County that needed relocation, return or re-entry. Saluda County did participate in group discussion and a group concurrence process for each action although they were not directly impacted by them.

The emergency management director participated in group discussions and agreement regarding restriction zone boundaries, including the potential use of zip codes, voting precincts, road boundaries, etc. The group recognized the dynamic features of this event, including traffic, weather, wind speed and direction that could affect the restriction zone boundaries. The director agreed with the group that the use of road boundaries was the most logical method in identifying restriction zones. The methods of public messaging in communicating restriction zone boundaries were also an agreed concern.

The Saluda County Emergency Management Director explained that agribusiness is a significant and large industry within the county. He described a variety of types of farms including several of the state's largest peach orchards, milk dairies, and several large poultry farms operated within the county and were included in the 50-mile ingestion scenario.

The loss of use threat to agribusiness within the county was a significant concern in the 50-mile ingestion scenario presented during the exercise, where the predicted areas of concern for mature produce and milk products included some portions of Saluda County.

The director explained that Saluda County would work closely with the state department of agriculture, Clemson University Agricultural Extension, the federal radiological monitoring and assessment center and others in coordinating and implementing protective action decisions and implementation strategies for agribusinesses located in the 50-mile ingestion area. The director explained that any decisions and strategies coordinated for the implementation of protective actions affecting agribusiness would be communicated with the agribusiness community by a variety of methods, including through contact lists maintained by the Saluda County Farm Bureau, press releases, and door-to-door methods.

As part of the exercise, Saluda County was delivered an exercise inject asking the county to assist in disposal of waste milk. The specific request was the need for farmers to volunteer to accept the waste milk which would be applied to farm fields for disposal.

The director explained that in response to this request, the county would work closely with local farmers and the South Carolina Department of Agriculture to identify local farms that would be willing to accept waste milk for farm field application. The director explained that the county has very good relationships with the local agribusiness community and would leverage those relationships to assist the state with this request with minimum challenge.

For this capability the following radiological emergency preparedness capability targets were met: 1.6 and 1.7.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

d. **Plan Issues:** None

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

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

# Section 4: Conclusion

Emergency management officials and representatives from the State of South Carolina; the risk counties of Fairfield, Lexington, Richland, and Newberry; the ingestion county of Saluda; Clemson Livestock Poultry Health; Dominion Energy; and numerous volunteers and other agencies participated in this exercise. The participants' cooperation, teamwork, and dedication to protecting the public during a radiological event were evident throughout all exercise phases.

The exercise highlighted the first use of the Integrated Public Alert and Warning in FEMA Region 4 during a Radiological Emergency Preparedness Program Exercise. South Carolina Emergency Management Division also successfully integrated agricultural decision-making into their plume and ingestion phase coordination and decision-making. Finally, the South Carolina Radiological Emergency Preparedness Coordination staff assisted in fully integrating the ingestion county of Saluda into the planning and coordination process during all phases. State, local, and federal agencies, along with utility stakeholders, maintained a high level of determination and dedication, allowing all stakeholders to navigate the rescheduling of events and staff changes. Players in each organization excelled in their responsibilities, enabling the successful demonstration of the capability targets leading to the fulfillment of the core capabilities. The demonstrated commitment to leadership in these organizations was reflected through their staff.

The Federal Emergency Management Agency wishes to acknowledge the efforts of the many individuals who participated in the exercise and made it a success. Protecting public health and safety is the full-time job of some exercise participants and additional assigned responsibility for others. Some have willingly sought this responsibility by volunteering to provide vital emergency services to their communities.

State and local emergency response organizations demonstrated knowledge of their emergency response plans and procedures and successfully implemented them.

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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 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | SEOC | Dose Assessment | Fairfield County | Lexington County | Newberry County | Richland County | Joint Information System* |
| Unusual Event | 8:22 a.m. | 8:28 a.m. | 8:33 a.m. | 8:30 a.m. | 8:28 a.m. | 8:28 a.m. | 8:28 a.m. | - |
| Alert | 8:49 a.m. | 8:57 a.m. | 9:04 a.m. | 8:56 a.m. | 8:56 a.m. | 8:58 a.m. | 8:56 a.m. | 9:37 a.m. |
| Site Area Emergency | 9:47 a.m. | 9:56 a.m. | 9:59 a.m. | 9:55 a.m. | 9:57 a.m. | 10:00 a.m. | 9:58 a.m. | 10:03 a.m. |
| General Emergency | 10:37 a.m. | 10:46 a.m. | 10:45 a.m. | 10:46 a.m. | 10:46 a.m. | 10:46 a.m. | 10:46 a.m. | 11:01 a.m. |
| Simulated Rad. Release Started | 11:14 a.m. | 11:29 a.m. | 11:19 a.m. | 11:17 a.m. | 11:29 a.m. | 11:28 a.m. | 11:27 a.m. | 11:46 a.m. |
| Simulated Rad. Release Ended | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing |
| Facility Declared Operational | 9:29 a.m. | 9:25 a.m. | 9:38 a.m. | 9:00 a.m. | 10:00 a.m. | 9:20 a.m. | 9:45 a.m. | 9:20 a.m. |
| State of Emergency Declared | State | 10:26 a.m. | - | 10:25 a.m. | 10:45 a.m. | 10:28 a.m. | 10:43 a.m. | 11:08 a.m. – Richland<br>11:11 a.m. – Newberry |
| | Local | 10:13 a.m. | 10:18 a.m. | 10:25 a.m. | 10:13 a.m. | 10:22 a.m. | 10:13 a.m. | 10:23 a.m. |
| End Exercise | 12:02 p.m. | 2:00 p.m. | 2:00 p.m. | 12:39 p.m. | 1246 p.m. | 12:44 p.m. | 12:45 p.m. | 12:46 p.m. |
| 1st Precautionary Action: Stay Tuned | | 9:55 a.m. | - | 9:55 a.m. | 9:55 a.m. | 9:55 a.m. | 9:55 a.m. | 10:03 a.m. |
| 1st ANS/WEA/EAS/IPAWS Decision/Activation | | 10:00 a.m./ 10:17 a.m. | - | 10:00 a.m./ 10:17 a.m. | 10:00 a.m./ 10:17 a.m. | 10:00 a.m./ 10:17 a.m. | 10:00 a.m./ 10:17 a.m. | 10:00 a.m./ 10:17 a.m. |

| Emergency Classification Level or Event | Time Utility Declared | Time That Notification Was Received or Action Was Taken | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | SEOC | Dose Assessment | Fairfield County | Lexington County | Newberry County | Richland County | Joint Information System* |
| **2nd Precautionary Actions:** Issue KI – Emergency Workers and institutionalized persons | | 10:37 a.m. | 10:37 a.m. | 10:37 a.m. | 10:37 a.m. | 10:37 a.m. | 10:37 a.m. | N/A |
| Agricultural Advisory | | | | | | | | 10:43 a.m. |
| Hunting/Fishing Advisory | | | | | | | | 10:43 a.m./ 11:04 a.m. |
| Waterway Clearance | | | | | | | | 10:43 a.m. |
| Rail/Flight Restrictions Fairfield Schools – Early Release Newberry Schools – Relocation | | | | | | | | N/A |
| Lexington Schools – Relocation | | | | | 11:00 a.m. | | | |
| **1st Protective Action Decision:** Evacuate Zones: A0, E1, E2, F1, F2 | | 11:29 a.m. | 11:29 a.m. | 11:29 a.m. | 11:29 a.m. | 11:29 a.m. | 11:29 a.m. | 11:45 a.m. |
| **2nd ANS/WEA/EAS/IPAWS Activation** | | 11:45 a.m. | - | 11:45 a.m. | 11:45 a.m. | 11:45 a.m. | 11:45 a.m. | 11:45 a.m. |
| **KI Ingestion Decision:** Emergency Workers and Institutionalized Persons: Ingest | | 12:17 p.m. | 12:17 p.m. | 12:17 p.m. | 12:17 p.m. | 12:17 p.m. | 12:17 p.m. | N/A |

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

# Appendix B: Evaluator Assignments

Plume Phase

| Location/Venue | Evaluation Team | Core Capability |
|---|---|---|
| SEOC | Gerald Mclemore<br>Matt Webb<br>Farrah Stewart | Operational Coordination<br>Public Information and Warning |
| EOF | James Young | Situational Assessment |
| Dose Assessment | Marcy Campbell | Situational Assessment |
| Mobile Lab | Brad McRee<br>Kevin Robinson | Environmental Response/Health and Safety |
| Mobile Operations Center | Debbie Cummings | Environmental Response/Health and Safety |
| Field Teams | Deb Blunt<br>John Wills<br>Lloyd Generette | Environmental Response/Health and Safety |
| Joint Information Center/System | Erica Houghton | Public Information and Warning |
| Fairfield County Emergency Operations Center | Nate Nienhius<br>Rosemary Samsel | Operational Coordination<br>Public Information and Warning<br>On-Scene Security, Protection, and Law Enforcement |
| Lexington County Emergency Operations Center | Robert Nash<br>Randi Hendrix | Operational Coordination<br>Public Information and Warning<br>On-Scene Security, Protection, and Law Enforcement |
| Newberry County Emergency Operations Center | Matthew Bradley<br>Deshun Lowery | Operational Coordination<br>Public Information and Warning<br>On-Scene Security, Protection, and Law Enforcement |
| Richland County Emergency Operations Center | Vince Kalson<br>PJ Nied | Operational Coordination<br>Public Information and Warning<br>On-Scene Security, Protection, and Law Enforcement |

Ingestion Phase

| Location/Venue | Evaluation Team | Core Capability |
|---|---|---|
| SEOC<br><br>(Includes Department of Agriculture) | Gerald Mclemore<br>Matt Webb<br>Irvin Gibson<br>Bart Ray | Operational Coordination<br>Public Information and Warning |
| Dose Assessment | Jill Leatherman | Situational Assessment |
| Field Team Management | Lloyd Generette | Environmental Response/Health and Safety |
| Joint Information Center/System | Erica Houghton<br>Farrah Stewart | Public Information and Warning |
| Rick County Emergency Operations Centers | Nate Nienhius<br>Robert Nash<br>Mathew Bradley<br>Vince Kalson | Operational Coordination |
| Ingestion County Emergency Operations Centers | Steve Watts | Operational Coordination |

# Appendix C: Exercise Participants

| Participating Organizations |
|---|
| **State of South Carolina** |
| Clemson University Livestock-Poultry Health |
| South Carolina Department of Agriculture |
| South Carolina Department of Clemson University Cooperative Extension Service Education |
| South Carolina Department of Commerce |
| South Carolina Department of Health and Environmental Control (DHEC) |
| South Carolina Department of Natural Resources |
| South Carolina Department of Public Safety |
| South Carolina Department of Social Services |
| South Carolina Department of Transportation |
| South Carolina Emergency Management Division |
| South Carolina Law Enforcement Division |
| South Carolina National Guard |
| South Carolina Office of Regulatory Staff |
| **Fairfield County** |
| Fairfield County Administration |
| Fairfield County Assessor |
| Fairfield County Communications/E-911 |
| Fairfield County Emergency Management Division |
| Fairfield County Emergency Medical Services |
| Fairfield County Fire |
| Fairfield County Public Works |
| Fairfield County Purchasing |

| Participating Organizations |
| --- |
| Fairfield County Sheriff's Office |
| Fairfield County Transit |
| **Lexington County** |
| Lexington County Emergency Management Division |
| Lexington County Emergency Medical Services |
| Lexington County Fire Services |
| Lexington County Sheriff's Department |
| Oconee County Emergency Services |
| **Newberry County** |
| Newberry County Board of Rescue |
| Newberry County Emergency Services |
| Newberry County Hazardous Material |
| Newberry County Sheriff's Department |
| Newberry Fire Department |
| Newberry Police Department |
| **Richland County** |
| Columbia Fire Department |
| Prisma Health |
| Richland County Department of Public Works |
| Richland County Department of Social Services |
| Richland County Emergency Services |
| Richland County Hazardous Material Division |
| Richland County Sheriff's Department |
| **Private Sector** |

| Participating Organizations |
| --- |
| American Red Cross |
| Dominion Energy |
| **Federal Agencies** |
| United States Department of Agriculture |
| United States Department of Energy |
| United States Department of Homeland Security, Federal Emergency Management Agency, Region 4 |
| United States Nuclear Regulatory Commission, Region II |

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# Appendix D: Extent of Play Agreement

V.C. Summer Nuclear Station 2023

Full Participation Ingestion Pathway Exercise

Unless otherwise noted, all activities will be fully demonstrated in accordance with respective plans and procedures, as they would be in an actual emergency. South Carolina Emergency Management Division (SCEMD) must provide these plans, guides, and procedures to Federal Emergency Management Agency (FEMA) NLT 60 days before the exercise. If an activity is not listed as an exception, it will be demonstrated as described in the plans, standard operating guides (SOGs) and/or standard operating procedures (SOPs). In some cases, a task may be listed as "demonstrate/discuss" to indicate that actions may be completed or discussed via interview as the scenario dictates. Any activity to be evaluated out-of-sequence (OOS), during staff assistance visits (SAVs), and/or by discussion will be clearly identified. Any issue or discrepancy arising during exercise play may be re-demonstrated, if allowed by the Regional Assistance Committee (RAC) Chair or as listed herein. This allowance may be granted if it is not disruptive to exercise play and is mutually agreed to by the Offsite Response Organization (ORO) Controller and FEMA Evaluator.

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DAY 1

STATE OF SOUTH CAROLINA

State Emergency Operations Center (SEOC)

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.

Capability Target: 1.1: Mobilization
Individuals with roles in support of emergency operations are identified, alerted, and mobilized in a timely manner. (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, O.1).

South Carolina Emergency Management Division (SCEMD) will demonstrate the following Critical Tasks:

- The capability to receive notification of an incident from the licensees; verify the notification; contact, alert, and mobilize key emergency personnel in a timely manner.
- The ability to staff and maintain 24-hour operations.
- The activation of facilities for immediate use by mobilized personnel upon their arrival.
- The ability to identify and request additional resources or identify compensatory measures.

Exception: Personnel cannot be at their duty station but may be pre-positioned in the area prior to notification.

Capability Target: 1.2: Direction and Control
Individuals in leadership roles provide direction and control to the portion of the overall response effort for which they are responsible. (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, O.1).

State Emergency Response Team (SERT) members at the SEOC will demonstrate the following Critical Tasks:

- The availability of facilities to support emergency operations.
- The ability to carry out the essential management functions of the response effort.
- The ability to prioritize resource tasking and replace/supplement resources.

Exception: All coordination telephone calls should occur in accordance with plans and procedures. However, the simcell may substitute for non-participating agencies.

Capability Target: 1.3: Protective Action Recommendations
Appropriate PARs are selected based on available information and other factors. (NUREG-0654/FEMA-REP-1, Rev. 2: D.4, J.7, J.8, J.8.b, J.9, O.1).

SERT will demonstrate the following Critical Tasks:

- The capability to develop PARs for decision-makers based on available information and recommendations provided by the licensee, as well as field monitoring data if available.
- The capability to independently validate dose projections.

- The capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

Capability Target: 1.4: Protective Action Decisions for the Plume Phase
Appropriate PADS are based on available information for the plume phase. (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, O.1).

The SERT will demonstrate/discuss the following Critical Tasks:

- The ability to conduct the decision-making process taking those with disabilities and access/functional needs (e.g., nursing homes, correctional facilities, licensed day cares, mobility-impaired individuals, and transportation-dependent individuals) into account.
- The capability to make both initial and subsequent precautionary and/or protective action decisions in a timely manner appropriate to the incident.
- The capability to change protective actions based on the combination of the following factors: subsequent dose projections, field monitoring data, or information on plant conditions, magnitude of ongoing threat, the response, and/or site conditions.
- The capability to make decisions on the distribution and administration of KI to supplement sheltering and evacuation.
- The capability to communicate the results of decisions to all the affected locations.

Capability Target: 3.1: Communications
Communication processes, systems, and equipment are sufficient to support emergency operations. (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, O.1).

SCEMD will demonstrate the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to manage the communications systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
- That the SEOC has sufficient equipment, maps, and displays to perform the assigned role.

**Exception or Note: (comms system if different than site specific plans, i.e., conference bridge line)**

**Core Capability: Public Information and Warning**

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

Capability Target: 3.2: Alert and Notification of the Public
Alert and notification of the public is completed in a timely manner. (NUREG-0654/FEMA-REP- 1, Rev. 2: E.2, E.4, E.5, F.3, O.1).

The SERT will demonstrate the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to coordinate an instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume exposure pathway EPZ. The

procedures to broadcast the message will be fully demonstrated as they would in an actual emergency up to the point of transmission.
- The backup alert and notification procedures utilized in the event of a primary system failure.

Exception: All IPAWS notifications will be sent using a testing site

Dose Assessment

Core Capability: Situational Assessment
**Definition:** 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.

Capability Target: 1.3: Protective Action Recommendations
Appropriate PARs are selected based on available information and other factors. (NUREG-0654/FEMA-REP-1, Rev. 2: D.4, J.7, J.8, J.8.b, J.9, O.1).

S.C. Department of Health and Environmental Control (SCDHEC) will demonstrate the following Critical Tasks:
- The capability to develop PARs for decision-makers based on available information and recommendations provided by the licensee, as well as field monitoring data if available.
- The capability to independently validate dose projections.
- The capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

Capability Target: 1.4: Protective Action Decisions for the Plume Phase
Appropriate PADS are based on available information for the plume phase. (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, O.1).

SCDHEC will demonstrate/discuss the following Critical Tasks:
- The ability to conduct the decision-making process taking those with disabilities and access/functional needs (e.g., nursing homes, correctional facilities, licensed day cares, mobility-impaired individuals, and transportation-dependent individuals) into account
- The capability to make both initial and subsequent precautionary and/or protective action decisions in a timely manner appropriate to the incident.
- The capability to change protective actions based on the combination of the following factors: subsequent dose projections, field monitoring data, or information on plant conditions, magnitude of ongoing threat, the response, and/or site conditions.
- The capability to make decisions on the distribution and administration of KI to supplement sheltering and evacuation.
- The capability to communicate the results of decisions to all the affected locations.

Capability Target: 4.5: Plume Phase Analysis and Dose Assessment
Dose Assessment considers all available information including plant conditions, environmental conditions, field monitoring data, sample analysis results, and dose projection calculations. (NUREG-0654/FEMA-REP-1, Rev. 2: A.3, H.13, I.6, I.8, I.10, K.3, O.1).

SCDHEC will demonstrate the following Critical Tasks:
- The capability to develop PARs for decision-makers based on available information and recommendations provided by the licensee, as well as field monitoring data if available.

- The capability to independently validate dose projections.
- The capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

Field Team Management

Core Capability: Detect, Measure, Sample, Analyze and Assess

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

Capability Target: 1.1: Mobilization

Individuals with roles in support of emergency operations are identified, alerted, and mobilized in a timely manner. (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, O.1).

SCDHEC will demonstrate the following Critical Tasks:

- The capability to receive notification of an incident from the licensees; verify the notification; contact, alert, and mobilize key personnel in a timely manner.
- The ability to staff and maintain 24-hour operations.
- The activation of facilities for immediate use by key personnel upon their arrival.
- The ability to identify and request additional resources or identify compensatory measures.

**Exception: Personnel cannot be at their duty station but may be pre-positioned in the area prior to notification. Mobile RAD Lab can be set up and occupied.**

Capability Target: 2.1: Emergency Worker Exposure Control Decision-Making Process
A decision-making process involving consideration of appropriate factors and necessary coordination is used to ensure that an exposure control system is in place for emergency workers and includes the use of radio protective drugs and procedures to authorize emergency exposures in excess of the PAGs. (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, O.1).

SCDHEC will demonstrate the following Critical Tasks:

- The capability to determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established PAGs.
- The capability to make recommendations for protective actions and to authorize exposure limits for DHEC staff.
- The capability to make recommendations on the distribution and administration of KI as a protective measure for county emergency workers based on the established PAGs for KI administration.

Capability Target: 2.2: Emergency Worker Exposure Control Management
Emergency workers manage radiological exposure and dose in accordance with the plans/procedures. (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, O.1).

SCDHEC will demonstrate the following Critical Tasks:

- The capability to maintain an appropriate inventory of DRDs that are leak-tested or current in calibration.
- The capability to maintain an appropriate inventory of PRDs.
- The capability to retain an adequate supply of radioprotective drugs.
- The capability to adequately distribute appropriate DRDs and PRDs.
- The ability to adequately distribute radioprotective drugs to emergency workers.
- The capability to record and report exposures in the field.
- The capability to implement decisions to administer radioprotective drugs.
- The capability to report to the individual responsible for managing exposure and dose when limits are reached.

Capability Target: 3.1: Communications

Communication processes, systems, and equipment are sufficient to support emergency operations. (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, O.1).

SCDHEC will demonstrate the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to manage the communications systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
- The capability to provide counties with a liaison.

Capability Target: 4.1 Field Monitoring Teams Management

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

SCDHEC will demonstrate the capability to brief Field Monitoring Teams (FMTs) on predicted plume location and direction, plume travel speed, and exposure control procedures before deployment.

- Direct the FMTs to monitoring locations, predesignated points or otherwise, at times and locations sufficient to characterize the plume.
- Obtain peak plume measurements from FMTs.
- Direct FMTs to collect air samples at locations and times sufficient to characterize the plume.
- Coordinate and share information amongst all FMTs (licensee, Federal, state, and local).
- Coordinate sample analysis from field to those responsible for assessing radiological data.
- Coordinate transfer of sample media to locations and organizations responsible for assessing radiological data.

**Field Monitoring Teams**

**Core Capability: Detect, Measure, Sample, Analyze and Assess**

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

Capability Target: 4.2 Plume Phase Measurements and Sampling
Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low-background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media (NUREG-0654/FEMA-REP-1, Rev. 2, A.1.d; A.2.a, b; A.2; C.4, 6).

SCDHEC will demonstrate the following Critical Tasks:

- The capability to make and report measurements of ambient radiation to the field team coordinator, dose assessment team, or other appropriate authority.
- The capability to obtain an air sample for measurement of airborne radioiodine and particulates, and to provide the appropriate authority with field data pertaining to measurement.
- Coordination concerning transfer of samples, including a chain-of-custody form(s), to a radiological laboratory (ies).

**Mobile Radiological Lab**

**Core Capability: Detect, Measure, Sample, Analyze and Assess**
**Definition:** Ensure the availability of guidance and resources to address all hazards including hazardous materials, acts of terrorism, and natural disasters in support of the responder operations and the affected communities.

Capability Target: 1.1: Mobilization
Individuals with roles in support of emergency operations are identified, alerted, and mobilized in a timely manner. (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, O.1).

SCDHEC will demonstrate the following Critical Tasks:

- The capability to receive notification of an incident from the licensees; verify the notification; contact, alert, and mobilize key emergency personnel in a timely manner.
- The ability to staff and maintain 24-hour operations.
- The activation of facilities for immediate use by mobilized personnel upon their arrival.
- The ability to identify and request additional resources or identify compensatory measures.

**Exception: Personnel cannot be at their duty station but may be pre-positioned in the area prior to notification. Mobile RAD Lab can be set up and occupied.**

Capability Target: 3.1: Communications
Communication processes, systems, and equipment are sufficient to support emergency operations. (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, O.1).

SCDHEC will demonstrate the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to manage the communications systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
- That the DHEC workers have sufficient equipment maps and displays to perform the assigned role.
- The capability to provide the counties with a liaison.

Capability Target: 4.4 Laboratory Operations
The laboratory can perform required radiological analyses to support protective action decisions (NUREG-0654/FEMA-REP-1, Rev. 2, C.1, 3; J.11).

SCDHEC will demonstrate the following Critical Tasks:

- The capability to prepare analytical equipment for use, including performing calibrations, quality control checks, and background counts, as appropriate.
- The capability to receive and track samples, including completing chain-of-custody records.
- The capability to prepare and process each type of sample necessary to assess the ingestion plume exposure pathway and to support reentry, relocation, and return decisions. The types of samples necessary are based on the exercise scenario and may include drinking water, soil, vegetation, milk, crops, or other agriculture samples.

Joint Information System (JIS)

Core Capability: Public Information and Warning
**Definition:** Deliver coordinated, prompt, reliable, and actionable information to the whole community using clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken, and the assistance being made available.

Capability Target: 1.1: Mobilization
Individuals with roles in support of emergency operations are identified, alerted, and mobilized in a timely manner. (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, O.1).

ESF-15 (Public Information) will demonstrate the following Critical Tasks:

- The capability to receive notification of an incident from the licensees; verify the notification; contact, alert, and mobilize key emergency personnel in a timely manner.
- The ability to staff and maintain 24-hour operations.
- The activation of facilities for immediate use by mobilized personnel upon their arrival.
- The ability to identify and request additional resources or identify compensatory measures.

**Exception: Personnel cannot be at their duty station but may be pre-positioned in the area prior to notification.**

Capability Target: 3.1: Communications
Communication processes, systems, and equipment are sufficient to support emergency operations. (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, O.1).

ESF-15 (Public Information) will demonstrate the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to manage the communications systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
- That the SEOC has sufficient equipment, maps, and displays to perform the assigned role.

**Exception or Note: (comms system if different than site specific plans, i.e., conference bridge line)**

Capability Target: 3.2: Alert and Notification of the Public
Alert and notification of the public is completed in a timely manner. (NUREG-0654/FEMA-REP- 1, Rev. 2: E.2, E.4, E.5, F.3, O.1).

ESF-15 (Public Information) will demonstrate the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to coordinate an instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume exposure pathway EPZ. The procedures to broadcast the message will be fully demonstrated as they would in an actual emergency up to the point of transmission.
- The backup alert and notification procedures utilized in the event of a primary system failure.

Exception: All IPAWS notifications will be sent using a testing site

Capability Target: 3.3: Emergency Information and Instructions for Public and News Media Accurate emergency information and instructions are provided to the public and the news media in a timely manner. (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, O.1).

ESF-15 (Public Information) will demonstrate the following Critical Tasks:

- The ability to provide emergency information and instructions to the public and media in a timely manner following the initial alert and notification (not subject to specific time requirements).
- The capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media.
- The capability to ensure that current emergency information is repeated at pre-established intervals.
- The capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public.
- The capability to respond appropriately to inquiries from the news media.
- The capability to deal with calls received via the public inquiry hotline.
- The capability to provide or obtain accurate information for public inquiry callers or make appropriate referrals.
- The capability to ensure that emergency information and instructions are consistent with PADs made by appropriate officials.
- The capability to ensure that emergency information contains all necessary and applicable instructions to assist the public in carrying out the PADs provided.
- The capability to conduct timely and pertinent media briefings and distribute media releases as the incident warrants.

Emergency Operations Facility/Liaison

Core Capability: Situational Assessment
**Definition:** 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.

Capability Target: 1.3: Protective Action Recommendations
Appropriate PARs are selected based on available information and other factors. (NUREG-0654/FEMA-REP-1, Rev. 2: D.4, J.7, J.8, J.8.b, J.9, O.1).

EOF Liaison will demonstrate the following Critical Tasks:

- The capability to disseminate information to key decision makers.

SCDHEC will demonstrate the following Critical Tasks:

- Select and implement pre-planned precautionary protective actions.
- Utilize the methodology in plans/procedures to select among a range of protective actions most appropriate in an emergency. This could also include the use of preplanned precautionary protective actions contained in plans/procedures.
- The capability to develop and transmit PARs in a timely manner.

Waterway Clearance

Note: Waterway Clearance discussion will be completed on October 18.

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 for all traditional and atypical response personnel engaged in lifesaving and life-sustaining operations.

Capability Target: 2.2: Emergency Worker Exposure Control Management
Emergency workers manage radiological exposure and dose in accordance with the plans/procedures. (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, O.1).

SCDNR will discuss the following Critical Tasks:

- The capability to provide DNR emergency workers (including supplemental resources) with the appropriate direct-reading and permanent record dosimetry, KI, and instructions on the use of these items.
- The capability to determine whether to replace DNR workers, authorize DNR workers to incur additional exposures, or other actions related to exposure limits.
- The capability to accomplish distribution of KI to DNR emergency workers consistent with decisions made.
- The capability to formulate and disseminate instructions on using KI for those advised to take.

Capability Target: 3.1: Communications
Communication processes, systems, and equipment are sufficient to support emergency operations. (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, O.1).

SCDNR will discuss the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to manage the communications systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
- That the SEOC has sufficient equipment, maps, and displays to perform the assigned role.

Exception or Note: (comms system if different than site specific plans, i.e., conference bridge line)

Capability Target: 5.4: Traffic and Access Control
Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (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, O.1).

SCDNR will discuss/demonstrate the following Critical Tasks:

- The capability to select, establish, and staff appropriate traffic control points and access control points consistent with current conditions and PADs (e.g., evacuating, sheltering, and relocation) in a timely manner.
- The capability to provide instructions to access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.
- Accurate knowledge of their roles and responsibilities including verifying emergency worker identification and access authorization to the affected areas.
- The capability to identify and take appropriate actions concerning impediments to evacuation, including re-routing of traffic and coordination with the JIS to communicate alternate routes to evacuees, as appropriate.

RISK COUNTIES

Fairfield, Lexington, Newberry, and Richland Counties

EOC

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.

Capability Target: 1.1: Mobilization
Individuals with roles in support of emergency operations are identified, alerted, and mobilized in a timely manner. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will demonstrate the following Critical Tasks:

- The capability to receive notification of an incident from the licensees; verify the notification; contact, alert, and mobilize key emergency personnel in a timely manner.
- The ability to staff and maintain 24-hour operations.
- The activation of facilities for immediate use by mobilized personnel upon their arrival.
- The ability to identify and request additional resources or identify compensatory measures.

Exception: Personnel cannot be at their duty station but may be pre-positioned in the area prior to notification.

Capability Target: 1.2: Direction and Control
Individuals in leadership roles provide direction and control to the portion of the overall response effort for which they are responsible. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will demonstrate the following Critical Tasks:

- The availability of facilities to support emergency operations.
- The ability to carry out the essential management functions of the response effort.
- The ability to prioritize resource tasking and replace/supplement resources.

Exception: All coordination telephone calls should occur in accordance with plans and procedures. However, the simcell may substitute for non-participating agencies.

Capability Target: 1.4: Protective Action Decisions for the Plume Phase
Appropriate PADs are based on available information for the plume phase. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- The ability to conduct the decision-making process taking those with disabilities and access/functional needs (e.g., nursing homes, correctional facilities, licensed day cares, mobility-impaired individuals, and transportation-dependent individuals) into account.
- The capability to make prompt decisions on protective actions for students.
- The capability to make both initial and subsequent precautionary and/or protective action decisions in a timely manner appropriate to the incident.
- The capability to change protective actions based on the combination of the following factors: subsequent dose projections, field monitoring data, or information on plant conditions, magnitude of ongoing threat, the response, and/or site conditions.
- The capability to communicate the results of decisions to all the affected locations.

Capability Target: 1.5: Protective Action Decision Implementation for the Plume Phase Implement decisions for those populations and areas subject to plume phase protective actions. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss/demonstrate the following Critical Tasks:

- The capability of emergency workers to distribute KI consistent with what decisions are made.
- The capability to formulate and disseminate instructions on using KI for those advised to take it.
- The capability to alert and notify persons with disabilities and access/functional needs, including hospitals/medical facilities, licensed daycares, nursing homes, correctional facilities, and mobility-impaired and transportation-dependent individuals.
- The capability to provide for persons with disabilities and access/functional needs.
- The ability to implement precautionary and/or protective action decisions for students.
- The capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools.

Capability Target: 2.1: Emergency Worker Exposure Control Decision-Making Process
A decision-making process involving consideration of appropriate factors and necessary coordination is used to ensure that an exposure control system is in place for emergency workers and includes the use of radio protective drugs and procedures to authorize emergency exposures in excess of the PAGs. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will demonstrate the following Critical Tasks:

- The capability to comply with county emergency worker exposure limits.
- The capability to make decisions concerning authorization of exposure levels in excess of pre-authorized levels and the number of county emergency workers receiving radiation doses above pre-authorized levels.
- The capability to make decisions on the distribution and administration of KI as a protective measure for county emergency workers based on the established PAGs for KI administration.

Capability Target: 2.2: Emergency Worker Exposure Control Management
Emergency workers manage radiological exposure and dose in accordance with the plans/procedures. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will demonstrate the following Critical Tasks:

- The capability to provide county emergency workers (including supplemental resources) with the appropriate direct-reading and permanent record dosimetry, KI, and instructions on the use of these items.
- The capability to determine whether to replace workers, authorize workers to incur additional exposures, or other actions related to exposure limits.
- The capability to accomplish distribution of KI to county emergency workers consistent with decisions made.
- The capability to formulate and disseminate instructions on using KI for those advised to take.

Capability Target: 3.1: Communications
Communication processes, systems, and equipment are sufficient to support emergency operations. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will demonstrate the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to manage the communications systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
- That the counties EOC's have sufficient equipment, maps and displays to perform the assigned role.

**Exception or Note: (comms system if different than site specific plans, i.e., conference bridge line)**

**Core Capability: Public Information and Warning**
**Definition:** Deliver coordinated, prompt, reliable, and actionable information to the whole community using clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken, and the assistance being made available.

Capability Target: 3.2: Alert and Notification of the Public
Alert and notification of the public is completed in a timely manner. (NUREG-0654/FEMA-REP- 1, Rev. 2: E.2, E.4, E.5, F.3, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will demonstrate the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to coordinate an instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume exposure pathway EPZ. The procedures to broadcast the message will be fully demonstrated as they would in an actual emergency up to the point of transmission.
- The backup alert and notification procedures utilized in the event of a primary system failure.

Exception: All IPAWS notifications will be sent using a testing site

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

Accurate emergency information and instructions are provided to the public and the news media in a timely manner. (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, O.1)

Fairfield, Lexington, Newberry, and Richland Counties will demonstrate the following Critical Tasks:

- The ability to provide emergency information and instructions to the public and media in a timely manner following the initial alert and notification (not subject to specific time requirements).
- The capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media.
- The capability to ensure that current emergency information is repeated at pre-established intervals.
- The capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public.
- The capability to respond appropriately to inquiries from the news media.
- The capability to deal with calls received via the public inquiry hotline.
- The capability to provide or obtain accurate information for public inquiry callers or make appropriate referrals.
- The capability to ensure that emergency information and instructions are consistent with PADs made by appropriate officials.
- The capability to ensure that emergency information contains all necessary and applicable instructions to assist the public in carrying out the PADs provided.
- The capability to conduct timely and pertinent media briefings and distribute media releases as the incident warrants.

**Schools**

**School interviews will be conducted out of sequence at the following times:**

| Date & Time | County | School |
|---|---|---|
| TBD | Fairfield | McCrorey -Listen ES |
| December 5, 2022 | Newberry | Little Mountain ES |

**Core Capability: Critical Transportation**

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

Capability Target: 1.5: Protective Action Decision Implementation for the Plume Phase Implement decisions for those populations and areas subject to plume phase protective actions. (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, O.1).

Fairfield and Newberry Counties will discuss the following Critical Tasks:

- The capability of emergency workers to distribute KI consistent with what decisions are made.
- The capability to formulate and disseminate instructions on using KI for those advised to take it.
- The capability to alert and notify persons with disabilities and access/functional needs, including hospitals/medical facilities, licensed daycares, nursing homes, correctional facilities, and mobility-impaired and transportation-dependent individuals.
- The capability to provide for persons with disabilities and access/functional needs.
- The ability to implement precautionary and/or protective action decisions for students.
- The capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools.

Traffic Control Points (TCPs)

TCP interviews will be conducted in sequence during the exercise.

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 for all traditional and atypical response personnel engaged in lifesaving and life-sustaining operations.

Capability Target: 2.2: Emergency Worker Exposure Control Management

Emergency workers manage radiological exposure and dose in accordance with the plans/procedures. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- The capability to provide county emergency workers (including supplemental resources) with the appropriate direct-reading and permanent record dosimetry, KI, and instructions on the use of these items.
- The capability to determine whether to replace workers, authorize workers to incur additional exposures, or other actions related to exposure limits.
- The capability to accomplish distribution of KI to county emergency workers consistent with decisions made.
- The capability to formulate and disseminate instructions on using KI for those advised to take.

Capability Target: 3.1: Communications

Communication processes, systems, and equipment are sufficient to support emergency operations. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to manage the communications systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.

- That the counties EOC's have sufficient equipment, maps and displays to perform the assigned role.

**Exception or Note: (comms system is different than site specific plans, i.e., conference bridge line)**

Capability Target: 5.4: Traffic and Access Control
Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- The capability to select, establish, and staff appropriate traffic control points and access control points consistent with current conditions and PADs (e.g., evacuating, sheltering, and relocation) in a timely manner.
- The capability to provide instructions to access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.
- Accurate knowledge of their roles and responsibilities including verifying emergency worker identification and access authorization to the affected areas.
- The capability to identify and take appropriate actions concerning impediments to evacuation, including re-routing of traffic and coordination with the JIS to communicate alternate routes to evacuees, as appropriate.

Backup Route Alerting

**Backup Route Alerting interviews will be conducted in sequence during the exercise.**

Core Capability: Public Information and Warning
**Definition:** Deliver coordinated, prompt, reliable, and actionable information to the whole community using clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken, and the assistance being made available.

Capability Target: 1.1: Mobilization
Individuals with roles in support of emergency operations are identified, alerted, and mobilized in a timely manner. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- The capability to receive notification of an incident from the licensees; verify the notification; contact, alert, and mobilize key emergency personnel in a timely manner.
- The ability to staff and maintain 24-hour operations.
- The activation of facilities for immediate use by mobilized personnel upon their arrival.
- The ability to identify and request additional resources or identify compensatory measures.

**Exception: Personnel cannot be at their duty station but may be pre-positioned in the area prior to notification.**

Capability Target: 3.1: Communications
Communication processes, systems, and equipment are sufficient to support emergency operations. (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, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to manage the communications systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
- That the EOC has sufficient equipment, maps, and displays to perform the assigned role.

**Exception or Note: (comms system is different than site specific plans, i.e., conference bridge line)**

Capability Target: 3.2: Alert and Notification of the Public
Alert and notification of the public is completed in a timely manner. (NUREG-0654/FEMA-REP- 1, Rev. 2: E.2, E.4, E.5, F.3, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- A primary system and at least one backup system are always fully functional.
- The capability to coordinate IPAWS activation followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume exposure pathway EPZ. The procedures to broadcast the message will be fully demonstrated as they would in an actual emergency up to the point of transmission.
- The backup alert and notification procedures utilized in the event of a IPAWS failure.

DAY 2

STATE OF SOUTH CAROLINA

State Emergency Operations Center (SEOC)

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.

Capability Target: 1.6: Protective Action Decisions for the Post-Plume Phase
Appropriate PADs are based on available information for the post-plume phase. (NUREG-0654/FEMA-REP-1, Rev. 2: J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, O.1

The SERT will discuss the following Critical Tasks:

- The process of making Protective Action Decisions (PADs) in accordance with State plans and procedures using radiological data and other available information from the post-plume phase addressing Return, Re-entry, and Relocation.
- The means to identify and determine the boundaries of relocation areas based off current EPA guidelines in accordance with plans and procedures.
- The methods used for controlling access to and egress from restricted areas, including dosimetry and decontamination of individuals and equipment.

- Establishing a framework for relaxing protective actions and allowing for return to restricted areas, ensuring the restoration of access to vital services and facilities and utilizing Federal guidelines.
- The process for making agricultural PADs in accordance with applicable state and federal guidelines and authorities.

**Exception: Discuss coordination and development of press releases with other agencies and produce (1) press release during the relocation phase.**

Capability Target: 1.7: Protective Action Decision Implementation for the Post-Plume Phase
Implement decisions for those populations and areas subject to post-plume phase protective actions. (NUREG-0654/FEMA-REP-1, Rev. 2: C.2, J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, O.1).

The SERT will discuss the following Critical Tasks:

- The implementation of protective actions for agriculture, food, animal feed, agribusiness, and water supply intake points.
- The process for formulating protective action information for the general public, agribusiness stakeholders, food, and animal feed stakeholders.
- The methodology behind controlling, restricting, or preventing distribution of contaminated food by commercial sectors, ensuring communication and coordination with agencies responsible for enforcing food, animal feed, and food supply chain controls.

**Exception: Discuss coordination and development of press releases with other agencies and produce (1) press release during the relocation phase.**

Core Capability: Public Information and Warning
**Definition:** Deliver coordinated, prompt, reliable, and actionable information to the whole community using clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken, and the assistance being made available.

Capability Target: 3.3: Emergency Information and Instructions for Public and News Media Accurate emergency information and instructions are provided to the public and the news media in a timely manner. (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, O.1).

ESF-15 (Public Information) will demonstrate the following Critical Tasks:

- Provide information to the public that addresses temporary reentry to a restricted area, permanent relocation from areas not evacuated, and return to formerly restricted areas will be communicated.

**Exception: Discuss coordination and development of press releases with other agencies and produce (1) press release during the relocation phase.**

Dose Assessment

Core Capability: Situational Assessment
**Definition:** 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.

Capability Target: 1.6: Protective Action Decisions for the Post-Plume Phase

Appropriate PADs are based on available information for the post-plume phase. (NUREG-0654/FEMA-REP-1, Rev. 2: J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, O.1).

SCDHEC will discuss the following Critical Tasks:

- The process of recommending Protective Action Decisions (PADs) in accordance with State plans and procedures using radiological data and other available information from the post-plume phase addressing Return, Re-entry, and Relocation.
- The means to identify and determine the boundaries of relocation areas based off current EPA guidelines in accordance with plans and procedures.
- The need for controlling access to and egress from restricted areas and defining the extent of areas to be restricted.
- The methods used for dosimetry and decontamination of individuals and equipment.
- Establishing a framework for relaxing protective actions and allowing for return to restricted areas, ensuring the restoration of access to vital services and facilities and utilizing Federal guidelines.
- The process for discussing agricultural PADs with other state and federal authorities in accordance with applicable state and federal guidelines.

Capability Target: 4.6: Post-Plume Phase Sampling Plan Development and Analysis
Post-plume phase assessment considers all available information, including environmental conditions, field monitoring data, sample analysis results and dose projection calculations. (NUREG-0654/FEMA-REP-1, Rev. 2: A.3, H.13, I.2, I.6, I.8, I.10, J.12, J.14.b, J.14.c, K.3, M.7, M.8, O.1).

SCDHEC/ESF-17 will discuss the following Critical Tasks:

- The development and implementation of a sampling plan, how the areas of interest were identified and how the information gained from that plan can impact PARs.
- The methods used to determine areas to be restricted based on factors such as agricultural uses, a mix of radionucleotides in deposited materials, calculated exposure rates, their comparison to current federals PAGs, and the analysis of samples taken while implementing the sampling plan.

**Exception: Mobile Operations Command (MOC) can be set up and occupied.**

**Field Monitoring Teams**

**Core Capability: Detect, Measure, Sample, Analyze and Assess**
**Definition:** Ensure the availability of guidance and resources to address all hazards including hazardous materials, acts of terrorism, and natural disasters in support of the responder operations and the affected communities.

Capability Target: 4.3 Post-Plume Phase Measurements and Sampling
FMTs take measurements and samples to support assessment of the ingestion exposure pathway and to support reentry, relocation and return decisions. (NUREG-0654/FEMA-REP-1, Rev. 2, H.11, H.11.a, H.11.b, H.12, H.13, I.2, I.5, I.6, I.8, M.7, O.1).

SCDHEC/ESF-17 will discuss the following Critical Tasks:

- The process of deploying field monitoring teams, including determining where they are deployed, what equipment they are using, what data they are collecting and how that data will be used in developing PARs.
- The methods used to determine contamination of the food and animal feed supply chain commodities including agricultural products, water and soil samples, the methods used for determining what samples will be taken, how often and where and by whom, precautions taken for personnel during sampling, chain of custody for the samples, and where samples are tested.

RISK COUNTIES

Fairfield, Lexington, Newberry, and Richland Counties

EOC

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.

Capability Target: 1.6: Protective Action Decisions for the Post-Plume Phase
Appropriate PADs are based on available information for the post-plume phase. (NUREG-0654/FEMA-REP-1, Rev. 2: J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- The process of implementing Protective Action Decisions (PADs) in accordance with State agency decisions and response actions using radiological data and other available information from the post-plume phase addressing Return, Re-entry, and Relocation.
- The means to implement determined boundaries of relocation areas based off current EPA guidelines in accordance with plans and procedures.
- The methods used for controlling access to and egress from restricted areas, including dosimetry and decontamination of individuals and equipment.
- Establishing a framework for relaxing protective actions and allowing for return to restricted areas, ensuring the restoration of access to vital services and facilities based on state and federal guidelines.
- The process for implementing agricultural PADs in accordance with state and federal guidelines, determinations, and response actions.

Capability Target: 1.7: Protective Action Decision Implementation for the Post-Plume Phase
Implement decisions for those populations and areas subject to post-plume phase protective actions. (NUREG-0654/FEMA-REP-1, Rev. 2: C.2, J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, O.1).

Fairfield, Lexington, Newberry, and Richland Counties will discuss the following Critical Tasks:

- The implementation of protective actions for agriculture, agribusiness, food, animal feed, and water supply intake points based on state and federal guidelines, determinations, and response actions.
- The process for working with state agencies to coordinate the messaging related to protective action information for the general public, agribusiness stakeholders, and food and animal feed stakeholders.

- The methodology to implement the state and federal controls for the prevention of distribution of contaminated food by commercial sectors, ensuring communication and coordination with agencies responsible for enforcing food controls.

INGESTION COUNTY

Saluda County

EOC

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.

Capability Target: 1.6: Protective Action Decisions for the Post-Plume Phase
Appropriate PADs are based on available information for the post-plume phase. (NUREG-0654/FEMA-REP-1, Rev. 2: J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, O.1).

Ingestion Counties will discuss the following Critical Tasks:

- The process of implementing Protective Action Decisions (PADs) in accordance with State plans and procedures using radiological data and other available information from the post- plume phase addressing Return, Re-entry, and Relocation.
- The means to implement determined boundaries of relocation areas based off current EPA guidelines in accordance with plans and procedures.
- The methods used for controlling access to and egress from restricted areas, including dosimetry and decontamination of individuals and equipment.
- Establishing a framework for relaxing protective actions and allowing for return to restricted areas, ensuring the restoration of access to vital services and facilities based on state and federal guidelines.
- The process for implementing agricultural PADs in accordance with federal guidelines, determinations, and response actions.

Capability Target: 1.7: Protective Action Decision Implementation for the Post-Plume Phase
Implement decisions for those populations and areas subject to post-plume phase protective actions. (NUREG-0654/FEMA-REP-1, Rev. 2: C.2, J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, O.1).

Ingestion Counties will discuss the following Critical Tasks:

- The implementation of protective actions for agriculture, agribusiness, food, animal feed, and water supply intake points based on state and federal guidelines, determinations, and response actions.
- The process for working with state agencies to coordinate the messaging related to protective action information for the general public, agribusiness stakeholders, and food and animal feed stakeholders.
- The methodology to implement the state and federal controls for the prevention of distribution of contaminated food by commercial sectors, ensuring communication and coordination with agencies responsible for enforcing food controls.