After Action Report

Watts Bar Nuclear Plant

Radiological Emergency Preparedness Exercise

Exercise Date: October 20, 2021

Final

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Table of Contents

Page

Table of Contents i
Executive Summary 1
Section 1: Exercise Overview 3
Section 2: Exercise Design Summary 5
2.1 Exercise Purpose and Design 5
2.2 Exercise Core Capabilities and Objectives 5
2.3 Exercise Scenario 6
Section 3: Analysis of Capabilities 7
3.1 Exercise Evaluation and Results 7
3.2 Summary Results of Exercise Evaluation 7
3.3 Jurisdictional Summary Results of Exercise Evaluation 8
3.3.1 State Jurisdiction 8
3.3.1.1 State of Tennessee 8
3.3.1.2 Dose Assessment 12
3.3.1.3 Radiological Monitoring Control Center 13
3.3.1.4 Regional Coordination Center 15
3.3.1.5 Field Teams 16
3.4 Joint Operations 18
3.4.1 Central Emergency Control Center 18
3.4.2 Joint Information System/Center 19
3.5 Risk Jurisdictions 21
3.5.1 Rhea County Emergency Operations Center 21
3.5.2 Rhea County Backup Route Alerting 23
3.5.3 Rhea County Traffic Control Points 24
3.5.4 Rhea County School Interviews 24
3.5.5 McMinn County Emergency Operations Center 25
3.5.6 McMinn County Backup Route Alerting 28
3.5.7 McMinn County Traffic Control Points 28
3.5.8 McMinn County School Interview 29
3.5.9 Meigs County Emergency Operations Center 30
3.5.10 Meigs County Traffic Control Points 33
3.5.11 Meigs County School Interview 34
3.5.12 Hamilton County Reception and Congregate Care Center 34
Section 4: Conclusion 37
Appendix A: Exercise Timeline 39
Appendix B: Evaluator Assignments 41
Appendix C: Exercise Participants 43
Appendix D: Extent of Play Agreement 45

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Executive Summary

On October 20, 2021, the offsite response organizations of the Watts Bar Nuclear Plant 10-mile emergency planning zone participated in a plume exposure pathway exercise. FEMA Region 4 Radiological Emergency Preparedness Program staff evaluated that exercise, which also included out of sequence activities conducted August 23-27, 2021. This report outlines the evaluation results from the exercise and out of sequence activities.

The purpose of the exercise was to assess the level of state and local preparedness in responding to an incident at the Watts Bar Nuclear Plant. It was conducted in accordance with FEMA policies and guidance concerning the exercise of state and local radiological emergency response plans and procedures. The federal approval of the formal submission of the radiological emergency response procedures for the Watts Bar Nuclear Plant by the state of Tennessee was granted on July 8, 1985, and the qualifying emergency preparedness exercise was conducted on July 25, 1985.

Officials and representatives from participating agencies and organizations demonstrated knowledge of their emergency response plans and procedures, and successfully implemented them during the exercise and out of sequence activities. All jurisdictions met the exercise objectives and successfully demonstrated the corresponding core capabilities identified in Section 2.2 of this report. FEMA staff did not identify any level 1 findings during this exercise; however, one level 2 finding was identified. The level 2 finding was related to notification and/or timely notification of the counties with each change in emergency classification level. FEMA staff, in coordination with the state of Tennessee, developed a series of corrective actions to address the level 2 finding. The corrective actions planned include: (1) resolve the Digital National Warning System operability issues; (2) if operability issues are unresolvable, follow the official notification process outlined in Annex A, Appendix 8 and Annex B to ensure timely and consistent notification; (3) update the various Watts Bar Notification Checklists to ensure they contain accurate contact information and reorganize rows to ensure the highest notification priority level agencies are always at the top of the list; (4) conduct training for state watch point and county communication officers to ensure notifications are made and received in the same manner following notification of an emergency at the Watts Bar Nuclear Plant; and (5) consider providing the emergency notification forms electronically to all relevant state and county partners simultaneously and then follow up with telephone calls, as needed. The state will demonstrate the correction of this finding during the 2023 Watts Bar Nuclear Plant Radiological Emergency Preparedness Exercise.

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

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

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Section 1: Exercise Overview

Exercise Name	2021 Watts Bar Nuclear Plant Radiological Emergency Preparedness Exercise	
Type of Exercise	Full Scale Exercise	
Exercise Date	October 20, 2021	
Out of Sequence Date	August 23-27, 2021	
Program	Radiological Emergency Preparedness Program	
Mission Area	Response	
Scenario Type	Full Participation Plume Phase	
Participating Organizations	See Appendix C for the list of participating organizations	
Evaluated Facilities	See Appendix D for the extent of play agreement	
Points of Contact	John "JT" Ackermann North Section Chief FEMA Region 4 3005 Chamblee-Tucker Road Atlanta, Georgia 30341	Randi Hendrix Watts Bar Site Specialist FEMA Region 4 3041 Sidco Drive Nashville, Tennessee 37204
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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. CFR 350 codifies 16 planning standards that form the basis for radiological emergency response planning for the licensee, state, local, tribal, and territorial governments impacted by the emergency planning zones established for each nuclear power plant site in the United States. United States Nuclear Regulatory Commission regulations also codify the 16 planning standards for the licensee. 44 CFR 350 sets forth the mechanisms for the formal review and approval of state, local, tribal, and territorial government radiological emergency response plans and procedures by FEMA. One of the Radiological Emergency Preparedness Program cornerstones established by these regulations is the biennial exercise of offsite response capabilities. During these exercises, affected state, local, tribal, and territorial governments demonstrate the capability 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

Using the Homeland Security Exercise and Evaluation Program methodology, core capabilities-based planning allows for exercise planning teams to develop exercise objectives and observe exercise outcomes through a framework of specific action items. Additionally, the exercise objectives and capability targets assessed meet Radiological Emergency Preparedness Program Manual requirements and objectives. The core capabilities scheduled for demonstration during this exercise were:

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

- **Situational Assessment:** Provide all decision-makers with decision-relevant information regarding the nature and extent of the hazard, any cascading effects, and the status of the response.

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

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

- **On-Scene Security, Protection, and Law Enforcement:** Ensure a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas and also for response personnel engaged in lifesaving and life-sustaining operations.

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

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

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

- **Objective 1:** Emergency Operations Management

- **Objective 2:** Exposure Control

- **Objective 3:** Alert and Notification

- **Objective 4:** Detect, Measure, Sample, Analyze, and Assess

- **Objective 5:** Operate

2.3 Exercise Scenario

The following is a summary of the scenario developed by Tennessee Valley Authority to drive exercise play. A Notice of Unusual Event at Watts Bar Nuclear Plant was declared due to a steam generator tube leak. The steam generator leakage increased causing conditions to exist for an Alert. The containment radiation monitors rose above threshold values and conditions existed for a Site Area Emergency. The steam generator power operated relief valve failed to open, and a radiological release began, causing conditions to exist for a General Emergency. The General Emergency drove protective action recommendations for a phased evacuation.

The protective action recommendation was to first evacuate sectors A-1, B-1, C-1, D-1, and shelter A-2, A-3, B-2, B-4, C-2. After the first sectors were evacuated, the next phase of evacuations were sectors A-2, A-3, B-2, B-4, C-2. The radiological release was less than protective action guides for total dose and thyroid dose, thus potassium iodide ingestion was not expected but possible due to radioiodines being present in the air sample results.

Section 3: Analysis of Capabilities

3.1 Exercise Evaluation and Results

This section contains the results and findings of the evaluation of all jurisdictions and functional entities that participated in the October 20, 2021, plume exposure pathway exercise and out of sequence activities conducted the week of August 23-27, 2021.

Each jurisdiction and functional entity was evaluated based on the demonstration of objectives, core capabilities, 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 by the use of 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 offsite response organization's emergency plan/implementing procedures, rather than in that of the offsite response organization'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.

3.3 Jurisdictional Summary Results of Exercise Evaluation

3.3.1 State Jurisdiction

3.3.1.1 State of Tennessee

Operational Coordination Capability Summary

The direction and control officer, assistant direction and control officer, and emergency services coordinators successfully demonstrated the capability to establish and maintain a unified and coordinated operational structure. This structure seamlessly integrated emergency services coordinators representing dozens of state agencies and organizations to support the execution of core capabilities and capability targets.

The Digital National Warning System was used by the Tennessee Valley Authority to notify state watch point communications officers at the state emergency operations center of a Notice of Unusual Event and all subsequent changes in emergency classification levels. Additionally, the Tennessee Valley Authority used a facsimile to send the emergency notification form to the state watch point. Each call from the operations duty specialist at the Tennessee Valley Authority's Central Emergency Control Center was received and verified by a communications officer at the state watch point.

Two communications officers used a 24-hour staff roster to notify and mobilize the emergency services coordinators in response to the radiological incident at the Watts Bar Nuclear Plant. Because the coordinators in the emergency operations center were prepositioned in accordance with the extent of play agreement, the emergency operations center was considered operational by the direction and control officer after coordinators received the notification message. The communications officers also used checklists specific to the current emergency classification level to notify county, state, and federal partners. Priority agencies were highlighted in yellow on each checklist; communications officers contacted only the highlighted agencies. It was noted that on the Notice of Unusual Event checklist, McMinn County was not highlighted and therefore, was not notified. The lack of notification to McMinn County following the Notice of Unusual Event declaration, as well as the changes in emergency classification levels not being communicated to Rhea County in a timely manner, nor in the same manner each time, resulted in a level 2 finding being issued to the Tennessee Emergency Management Agency.

Direction and control within the state emergency operations center was provided by the direction and control officer and assistant direction and control officer. The state emergency operations center contained sufficient equipment, supplies, and displays to support emergency response. Situational awareness was maintained through hourly briefings by the direction and control officer. The decision line was used to conduct timely and efficient briefings with county emergency management directors every hour, or when an upgrade to the emergency classification level occurred.

The direction and control officer communicated and coordinated all protective action decisions between the state emergency information director, emergency services coordinators from the Tennessee Department of Transportation, Tennessee Highway Patrol, Tennessee Department of Health, and Tennessee Wildlife Resource Agency, and the county emergency management directors. During the exercise, the first protective action decision to restrict air space and railways, clear rivers, and relocate students from schools in the

emergency planning zone was discussed and agreed upon by all on the decision line. The second protective action decision was to evacuate sectors A1, B1, C1, D1 and shelter sectors A2, A3, B2, B4, C2, again this was discussed and agreed upon by all via the decision line.

In addition to the two protective action decisions, the direction and control officer and Tennessee Department of Health Emergency Services Coordinator managed radiological exposure and dose received by emergency workers. After receiving the emergency notification form declaring a General Emergency which indicated a radiological release to the environment, the direction and control officer requested input from the radiation control officer on the utility's protective action recommendation. The radiation control officer concurred with the recommendation for evacuation and sheltering; however, they requested additional time to analyze field team data and consult with dose assessment personnel before recommending administration of potassium iodide. On the following decision line call, the radiation control officer announced that the projected thyroid dose did not meet the protective action guideline for administration of potassium iodide. The decision went unchallenged and emergency workers were not instructed to ingest potassium iodide.

Although emergency workers were not instructed to ingest potassium iodide, other methods to manage radiological exposure were discussed via interview with representatives from Tennessee Highway Patrol, Tennessee Department of Transportation, Tennessee Wildlife Resources Agency, and the emergency services branch manager. Tennessee Highway Patrol and Tennessee Department of Transportation resources were requested to provide roadblock assistance at four locations within an evacuated sector, while Tennessee Wildlife Resources Agency officers were requested to clear designated waterways and hunting areas. Although these tasks were accomplished notionally, specific exposure control techniques were demonstrated or discussed. Highway patrol coordinators at the state emergency operations center coordinated the relocation of one of their downwind staging areas after the release of radiological materials to the environment was announced. Similarly, Tennessee Wildlife Resources Agency coordinators described their process of clearing designated waterways and hunting areas nearest to the plant, moving outward, then staging outside the 10-mile emergency planning zone to minimize exposure. Each coordinator also discussed their equipment, and the process to acquire dosimetry and potassium iodide from designated staging areas if not already on hand. Dosimetry leak test dates, survey meter calibration dates, and potassium iodide expiration dates were also validated during the staff assistance visit conducted on September 1, 2021.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** 71-21-1.1-L2-01

   Condition: The initial emergency classification level (Notice of Unusual Event) was not communicated to the McMinn County Emergency Management Agency Director. Additionally, changes to emergency classification levels were not communicated to the Rhea County Emergency Management Agency Director in a timely manner, nor in the same manner each time.

Possible Cause: Due to ongoing operability issues with the Digital National Warning System, the Tennessee Emergency Management Agency made the decision prior to the exercise to use another communications method and process to notify Rhea County, McMinn County, and Meigs County of a radiological incident at the Watts Bar Nuclear Plant. This exception was not included in the extent of play agreement signed by the state on September 3, 2021. The exception was verbally presented to FEMA Region 4 on October 4, 2021, and October 12, 2021, and verbally agreed upon by the North Section Chief and Tennessee State Lead. Instead of a state watch point communications officer using the Digital National Warning System to contact the 24/7 county communications centers upon notification of an emergency classification level or subsequent change, the state watch point communications officer used a landline telephone to call the county emergency management directors county issued cellular telephones.

Upon receiving the Notice of Unusual Event from the operations duty specialist in the central emergency control center at 8:19 a.m. EDT, two state watch point communications officers used the *Watts Bar Notification Checklist for Notification of Unusual Event* to make the appropriate notifications. One officer started from the top, the other from the bottom and they met in the middle. The officers began with the five rows highlighted in yellow on the checklist which indicated highest notification priority. McMinn County Emergency Management Agency was not highlighted, and as a result, the director did not receive notification of the Notice of Unusual Event. The director did eventually see an entry in WebEOC that indicated a Notice of Unusual Event had been declared. However, it was not until after consulting with the Tennessee Emergency Management Agency Controller in the McMinn County Emergency Operations Center that the director received official notification of the declaration at 8:59 a.m. EDT (40 minutes after the state received notification), from a state watch point communications officer. All subsequent notifications were made and received in a timely manner.

The Rhea County Emergency Management Director learned about both the Alert and Site Area Emergency via an entry in WebEOC before receiving notification from a state watch point communications officer. There was a 6–7-minute delay from the time the director saw the entry in WebEOC until notification was received from a state watch point communications officer. Why changes in emergency classification levels were posted in WebEOC prior to a risk county director being notified is unclear; however, one factor that may have contributed to the delay was the inaccurate information contained on the *Watts Bar Notification Checklist for Alert* and *Watts Bar Notification Checklist for Site Area Emergency*. On both checklists the previous director was listed as the primary contact, the 911 center as secondary, and the current director as an alternate.

References:

1. State of Tennessee Multi-Jurisdictional Radiological Emergency Response Plan for the Watts Bar Nuclear Plant, May 24, 2019, Annex A, Appendix 8; Annex B.
2. Radiological Emergency Preparedness Program Manual, December 2019, Planning Standard E, Evaluation Criterion E.1.

Effect: Failure to receive initial notification of an emergency classification level, or subsequent changes in levels in a timely and consistent manner, will delay the risk county emergency management director's ability to concur with and implement protective action decisions. An inability to concur with and implement protective action decisions places the public's health and safety at risk.

Recommendations:

1. Resolve the Digital National Warning System operability issues.
2. If operability issues are unresolvable, follow the official notification process outlined in Annex A, Appendix 8 and Annex B to ensure timely and consistent notification.
3. Update the various Watts Bar Notification Checklists to ensure they contain accurate contact information and reorganize rows to ensure the highest notification priority agencies are always at the top of the list.
4. Conduct training for state watch point and county communications center communication officers to ensure notifications are made and received in the same manner following notification of an emergency at the Watts Bar Nuclear Plant.
5. Consider providing the emergency notification forms electronically to all relevant state and county partners simultaneously and then follow up with telephone calls, as needed.

c. **Not Demonstrated:** None

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

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

Public Information and Warning Capability Summary

The state emergency information director demonstrated the capability to deliver coordinated, prompt, reliable, and actionable information related to the radiological incident at the Watts Bar Nuclear Plant to the public and media.

The state emergency information director participated in the decision line discussions in order to hear the decisions being made and draft and disseminate the appropriate press releases (prior to activation of the joint information center) and Emergency Alert System messages. Once the direction and control officer and county emergency management directors concurred on a decision, the state emergency information director issued a press release and tailored a pre-scripted Emergency Alert System message in English and Spanish. Following the Alert all concurred to have the state emergency information director broadcast Emergency Alert System message number 7. A press release was electronically mailed to a pre-identified list of media contacts, while a state watch point officer was instructed to broadcast the revised Emergency Alert System message and activate the sirens; there were no failures reported.

After the emergency escalated to a General Emergency, the decision line was once again used. All concurred to have the state emergency information director broadcast Emergency Alert System message number 41 in English and Spanish, and a state watch point officer was instructed to broadcast the Emergency Alert System message and activate the sirens. The message identified that persons in sectors A1, B1, C1, D1 were to evacuate while persons in sectors A2, A3, B2, B4, C2 were instructed to shelter. The remainder of the emergency planning zone was advised to monitor the situation and prepare to take action. Once again, sirens were sounded and no failures were reported.

One press release was disseminated from the state emergency operations center. All subsequent press releases were drafted and disseminated and press conferences coordinated and broadcast at the joint information center. Public and media inquiries received at the state emergency operations center were referred to the joint information center.

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

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.3.1.2 Dose Assessment

Situational Assessment Capability Summary

The Tennessee Department of Environment and Conservation, Division of Radiological Health personnel successfully demonstrated emergency operations management, emergency worker exposure control, internal and external communications, and the ability to conduct dose assessment activities to provide appropriate protective action recommendations to decision-makers at the state emergency operations center.

Per the extent of play agreement, personnel were prepositioned in the state emergency operations center before start of the exercise. All personnel promptly responded and staffed the assigned dose assessment room following Alert. The room was equipped with adequate communications, equipment, supplies, plans, and procedures to support dose assessment and radiological safety.

The state radiation control officer and assistant demonstrated direction and control by ensuring communications were established, and by ensuring information and updates were sent to the radiological monitoring control center and regional coordination center. Additionally, the control officer led discussions on plant status, dose assessment data needs, potassium iodide for the general public, and other pertinent topics. The radiation control officer participated in all decision line calls. The team followed activities on electronic situational awareness tools for the state and plant. Data was sent and transmitted over a field monitoring data input system, information sharing network, telephone, electronic mail, and facsimile.

The dose assessment personnel obtained plant information and field monitoring data to assess the radiological release. They performed dose projections using dose assessment programs, including anticipatory dose projections. Additionally, they compared state-created to utility-created dose projections, compared the projections to actual field data, and used calculations from field data to validate the accuracy of the projections. The dose assessment personnel worked together to assist the state decision-makers in considering protective action recommendations and making protective action decisions.

By incorporating Tennessee Valley Authority liaisons in the discussions, the team was able to provide detailed information regarding dose projections, plant status, field monitoring data, meteorology, and release details to aid in the development of protective action recommendations. Following General Emergency, the dose assessment personnel confirmed and agreed with utility recommendations to evacuate the two-mile sectors around the plant and to shelter five sectors downwind out to five miles. They also determined that there was

no need for the public to ingest potassium iodide since projected child thyroid dose calculations were well below the recommended guidance levels. It was noted that all emergency workers were authorized to ingest potassium iodide when a release was imminent or had occurred, however, there was no information relayed from dose assessment personnel regarding emergency workers ingesting potassium iodide.

When an additional protective action recommendation to evacuate the five downwind sectors previously sheltered was received from the Watts Bar Nuclear Plant, personnel discussed the recommendation with the state decision-makers. Due to improving plant conditions, and decreasing dose projection results and field readings, the radiation control officer advised that the recommendation should not be implemented, and the additional sectors did not require evacuation. Dose assessment personnel, Tennessee Valley Authority liaisons, and state decision-makers had several in-depth and detailed discussions on protective action recommendations. Topics were explained in a way in which all parties could understand, and discussions reflected an excellent working knowledge of radiological concerns during a nuclear power incident.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.3, 2.1, 3.1, 4.5.

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.3.1.3 Radiological Monitoring Control Center

Environmental Response/Health and Safety Capability Summary

The Tennessee Department of Environment and Conservation, Division of Radiological Health personnel responding to the radiological monitoring control center successfully demonstrated the ability to mobilize personnel, direct and communicate with field monitoring teams, control field team radiation exposure, and collect radiological field data for use by dose projection personnel.

Personnel were prepositioned at the radiological monitoring control center. The radiological health coordinator received a call following Alert. The coordinator immediately referenced procedures and followed an established call tree to notify personnel who would respond. When making the calls, the coordinator directed the recipient to continue making notification calls to designated individuals per the notification list. In a real-world emergency, initial staffing would be completed by radiological health personnel assigned to the Chattanooga and Knoxville field offices. The facility was promptly staffed and operational in a timely manner following Alert. The 24-hour staffing roster and arrangements for additional resources were described by the health coordinator and would be accomplished as needed during a real-world emergency after initial staffing was complete.

Personnel communicated with field teams using a base station radio on the state radio network, cellular telephones, landline telephones, and a computer application. By using

multiple methods of communication, the radiological health coordinator successfully communicated with field teams. Computer applications, telephones, and facsimile machines were used to communicate with outside organizations. Personnel brought laptop computers and their organizations' procedures to the radiological monitoring control center. Maps, equipment, and supplies necessary to support response were in the work area. Additional equipment and supplies were available at the facility, which was collocated with the regional coordination center.

The radiological monitoring coordinator was responsible for direction and control of the radiological monitoring control center. The radiological monitoring coordinator maintained situational awareness and worked closely with the radiological health coordinator to manage the group. The radiological monitoring coordinator checked in frequently with personnel to ensure they were on track to complete mission goals. Personnel were kept informed of information relevant to their assigned position. The radiological health coordinator used a detailed briefing sheet to brief field teams prior to deployment. The briefing sheet covered plant status, meteorological information, deployment assignments, use of potassium iodide, use of dosimetry, radiation exposure limits, how often to read dosimeters, use of protective clothing, operational checks on instruments, details of field survey and air sampling assignments, communication instructions, and non-radiological job hazards. A copy of the briefing sheet was provided to each field monitoring team captain.

The radiological monitoring coordinator maintained awareness of the emergency classification level, plant conditions, meteorological information, road conditions, and utility field team assignments. This information was collectively used to develop appropriate monitoring assignments for state field teams. Once a radiological release began, teams were assigned to find plume edges. The radiological monitoring coordinator obtained permission from the radiation control officer to have one team traverse the plume and obtain centerline data important for validating dose projections. Particulate and iodine samples were obtained by both teams. At the completion of mission assignments, field teams were directed to the appropriate location to transfer samples to the sample coordinator.

Field team measurements and air sample results were transmitted to the radiological monitoring control center using a computer application rather than radio or telephone. The computer application allowed for immediate sharing of information with dose assessment personnel. Personnel also used the computer application to display the field data in various formats. Field teams provided air sample counts and air sample concentration calculations were completed in the radiological monitoring control center using formulas embedded in a spreadsheet. Completed air sample calculation data was electronically provided to dose assessment personnel for use in validating dose projections. Throughout the demonstration, the radiological monitoring coordinator worked with state dose assessment personnel to ensure that field survey data being collected met their needs.

The radiological controls coordinator and personnel explained that after the initial deployment briefing, radiation exposure control at the field team level was managed by each field team captain. Field team members were aware of the notification and turnback limits. If a situation occurred where the team might need to receive radiation exposure above their predetermined administrative limit, the radiological controls coordinator would consult with the radiological monitoring coordinator at the state emergency operations center.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 2.1, 2.2, 3.1, 4.1, 4.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.3.1.4 Regional Coordination Center

Operational Coordination Capability Summary

The Tennessee Emergency Management Agency-East, Regional Coordination Center staff successfully demonstrated the capability to establish and maintain a unified and coordinated operational structure in support of the state emergency operations center.

Emergency services liaisons were notified and mobilized to the regional coordination center following notification of a radiological incident at the Watts Bar Nuclear Plant. All regional coordination center emergency services liaisons were prepositioned in accordance with the extent of play agreement. Through interview it was noted that the emergency services liaisons would be activated by their respective agency/organization or emergency services coordinator at the state emergency operations center. Upon notification to mobilize, the liaisons would respond to the regional coordination center and begin coordinating support internal and external to their agency/organization. Shortly after notification, the regional coordination center was declared operational; timely activation ensured support by federal, state, and county agencies and organizations.

During the hourly briefings, the liaisons used checklists to ensure the regional coordination center adhered to plans and procedures. In addition, the regional coordination center director and deputy director provided frequent briefings on plant conditions, emergency classification levels, and response activities. The frequent interactions ensured center staff maintained a high level of situational awareness. Also, each workstation was equipped with a telephone and laptop computer. Information technology support was available onsite, and communications were sufficient to support response operations. Hard copy and digital maps and displays were posted around the regional coordination center. There were electronic copies of plans available to each liaison. In addition, multiple communications systems were available including, landline and cellular telephones, internet, electronic mail, internal public address system, and an 800-megahertz radio system.

Direction and control was provided at the Tennessee Emergency Management Agency-East Regional Coordination Center for resource staging and logistical support. The regional coordination center director dispatched district coordinators to emergency operations centers in Rhea County, McMinn County, and Meigs County following Alert. The district coordinators were responsible for briefing the regional coordination center director on county resource requests.

The regional coordination center director listened to the decision line, but given their role, was not involved in the decision-making process. The director, deputy director, and liaisons simply monitored the discussion and prepared to implement decisions. The regional coordination center emergency services liaisons elaborated on their coordination, processes,

and implementation actions during the hourly briefings, thus demonstrating the ability to implement actions concerning resource support for each emergency classification level.

Through interview it was noted that if a protective action decision was made to ingest potassium iodide, the regional coordination center implementation action would be limited to issuance of emergency worker kits and just-in-time training. The emergency services liaisons were responsible for ensuring emergency workers from their respective agency/organization were trained on kit contents prior to deployment, and that workers knew where to return the kits. The regional coordination center maintained 50 emergency worker kits which included direct reading and permanent record dosimeters, potassium iodide, and an exposure record. Dosimetry leak test dates, survey meter calibration dates, and potassium iodide expiration dates were current and not expired.

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

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.3.1.5 Field Teams

Environmental Response/Health and Safety Capability Summary

The Tennessee Department of Environment and Conservation, Division of Radiological Health field monitoring teams successfully demonstrated the capability to perform field radiation measurements and collect air samples that were used to calculate projected radiation doses and make protective action recommendations associated with an incident at the Watts Bar Nuclear Plant. Two teams were deployed with staff from the Knoxville, Nashville, and Chattanooga, Tennessee regional offices.

The field monitoring teams were prepositioned at the radiological monitoring control center in Knoxville, Tennessee. Team members were notified by telephone call from their supervisor to report for duty. Once activated, the field team captain was responsible for picking up equipment kits, instrumentation, air samplers, and standard operating procedures from the regional office. After completing an inventory of the kits to ensure completeness, equipment and supplies were transported to the radiological monitoring control center in a Tennessee Division of Radiological Health vehicle. Each regional office had a radiation duty officer assigned to carry the on-call cellular telephone for activation of personnel during off hours. The radiation duty officer was responsible for notification of personnel and assignment of shifts for 24-hour staffing.

When teams arrived at the radiological monitoring control center, they were issued dosimetry, potassium iodide, and radios for their assignment. The radiological monitoring coordinator provided a briefing to the teams and provided them with a pre-job briefing form for their assignment. Field team members were each issued appropriate dosimetry, potassium iodide, and procedures to manage their radiological exposure. The dosimeters

were appropriate for reading the administrative and turnback limits. A sufficient supply of potassium iodide was also available. Information on ingestion, adverse side effects, and recording requirements were discussed. The supply of personal protective equipment, including gloves, booties, and coveralls, was sufficient for both members of each field monitoring team.

Field monitoring team personnel demonstrated the capability to monitor and manage their radiation dose, to use dosimetry equipment and radioprotective drugs, and explain the procedures to obtain authorization to receive emergency exposures more than protective action guidelines. Team members began recording dosimetry readings prior to deployment and continued to record their dosimetry readings at required intervals throughout the exercise. Team members were knowledgeable of the procedures for the use of potassium iodide. They simulated ingesting potassium iodide and recorded the ingestion prior to departure from the radiological monitoring control center, as instructed by the radiological monitoring coordinator.

Communication links between the field monitoring teams and the radiation monitoring coordinator were established and maintained. Redundant communication systems were in place to communicate and transmit data. The field teams utilized radios as the primary means of communication with cellular telephone as backup. In addition, the teams utilized a software tool to log and transmit radiation monitoring data. All communications were continuous and without interruption or delay for the entire exercise.

Field monitoring teams made, recorded, and reported measurements of ambient radiation to the radiological monitoring coordinator, and successfully collected radioiodine and particulate air samples. Radiation survey instruments and air samplers were within their calibration dates and were within the acceptable range of readings during operational and source response checks. The equipment kits contained supplies and equipment sufficient to support field team operations. Field team personnel used appropriate contamination control techniques, and protected radiation survey instrumentation from contamination.

Field monitoring teams were initially staged at predesignated sampling points on opposite sides of the projected plume pathway. The teams continuously monitored their survey instruments to locate the edges of the plume as it arrived. Each team was assigned to traverse the plume and identify the centerline and plume edges. At the direction of the radiological monitoring coordinator, team 1 was requested to take an air sample from the western edge of the plume, approximately one mile from Watts Bar Nuclear Plant. Team 3 was requested to take an air sample on the eastern side of the Watts Bar Dam near the plume edge, approximately two miles from Watts Bar Nuclear Plant. Each team collected a sufficient volume of air for the samples. Radiation measurements were collected during the air sample collection period to ensure that the plume had not shifted during collection period.

Both teams simulated moving to a low background location to perform field analysis on the air particulate and iodine samples. The air cartridge and filter paper were counted with a fixed geometry to ensure reproduceable results. The air calculation form was properly completed, and the information was transmitted to the radiological monitoring control center. Packaging and handling of samples were adequate to prevent cross-contamination, and sample identification and chain of custody procedures were completed to maintain integrity of the samples. Team members appropriately packaged, labelled, and transferred samples at the sample collection point.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 2.1, 2.2, 3.1, 4.1, 4.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.4 Joint Operations

3.4.1 Central Emergency Control Center

Situational Assessment Capability Summary

Tennessee Valley Authority personnel at the central emergency control center coordinated with the Tennessee Emergency Management Agency Liaison deployed to this location. This coordination was to support offsite response to a simulated radiological incident at the Watts Bar Nuclear Plant. The presence of this liaison facilitated information sharing between the Tennessee Valley Authority, state, and county emergency management directors.

The Tennessee Emergency Management Agency Liaison worked with Tennessee Valley Authority personnel to obtain current plant conditions and promptly provided that information to the state emergency operations center. The liaison also responded to various utility and state requests. For example, the liaison verified that roadways were open within the emergency planning zone and ensured no impediments were reported would potentially impact the evacuation of non-essential plant personnel. The liaison further provided Tennessee Valley Authority personnel with verification that offsite actions, such as the activation of sirens, had taken place.

The Tennessee Department of Environment and Conservation, Division of Radiological Health had in the past deployed a liaison to the central emergency control center to facilitate the exchange of information between state and utility dose assessment personnel. However, the Division of Radiological Health decided not to deploy a liaison for this exercise to reduce the number of deployed staff in response to the ongoing pandemic. The lack of the Division of Radiological Health liaison appeared to have contributed to difficulties reported by Tennessee Valley Authority staff in the central emergency control center, radiological monitoring control center, and state emergency operations center. These difficulties impacted the efficient sharing of information related to dose assessment, including meteorological and plant conditions, radiological monitoring, and comparing the results of dose modeling performed by state and utility dose assessment staff.

Tennessee Valley Authority managers in the central emergency control center also reported a difficulty making contact with the state direction and control officer via telephone. The primary telephone numbers they had available to contact the direction and control officer and state emergency operations center were incorrect. Later, they were successful in contacting the direction and control officer using the backup telephone numbers included in their procedures.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.3, 2.1, 3.1, 4.5.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.4.2 Joint Information System/Center

Public Information and Warning Capability Summary

Public information officers from the state of Tennessee; the counties of Rhea, McMinn, and Meigs; and the Tennessee Valley Authority successfully delivered coordinated, prompt, reliable, and actionable information to the public and media. Co-led by the public information directors from the state of Tennessee and the Tennessee Valley Authority, a joint information center was successfully demonstrated and relayed information regarding threats and hazards, actions taken, and assistance available.

Alert, notification, and mobilization of joint information center staff was demonstrated in accordance with state and county plans and procedures, as well as the extent of play agreement. Staff were notified by their respective agencies through various mass notification systems via telephone calls, short message service, and electronic mail of a radiological incident at the Watts Bar Nuclear Plant. Joint information center staff were allowed to preposition per the extent of play agreement, but simulated working within a joint information system prior to activation of the joint information center. While working within the joint information system, the state and utility public information directors discussed early activation of the joint information center following Alert. Relevant factors were considered, discussed, and the decision was made to request early activation through the state emergency operations center and central emergency control center. However, prior to completion of the request procedure, an escalation to Site Area Emergency occurred, which triggered the automatic activation of the joint information center per established procedures. The same notification procedures were then used to mobilize staff to report to the joint information center. Once notified, staff were required to exit the workroom, sign in through security, and obtain an access badge. After returning to the workroom, staff went to their assigned workstations and transitioned from a pre-activation joint information system to a joint information center. Once the facility met a minimum staffing requirement, the joint information center was declared operational.

Direction and control of joint information center staff was a coordinated and joint effort by the public information directors from the Tennessee Emergency Management Agency and Tennessee Valley Authority. The state's public information director was responsible for state, county, and local staff and the utility's public information director was responsible for onsite staff. Communication and coordination among the state, county, and utility public information staff was calm and efficient. Upon activation of the joint information center, an initial room brief was held. Subsequent room briefings were held throughout the incident on a periodic basis and as required for joint information staff to maintain situational awareness

of unfolding events. The state's public information director and state and county public information officers all monitored the decision line to hear protective action discussions and decisions in real time. Working as a unified team, the public information directors provided firm and productive direction and control to coordinate consistent and timely messaging of offsite and onsite response actions.

Primary and redundant communication systems were available and demonstrated by joint information center staff. Communications equipment available in the facility included landline and cellular telephones, facsimile machines, and laptops. Communications systems and methods available included short message service, electronic mail, an electronic situational awareness tool, and tele- and video-conference platforms. Equipment, displays, and supplies were adequate to support operations in the joint information center. The facility was located outside the 10-mile emergency planning zone; therefore, potassium iodide and dosimetry were not required. All communications equipment and systems were successfully demonstrated without failure.

Emergency Alert System messages were coordinated, reviewed, and transmitted from the state watch point. The state emergency operations center posted the selected messages to an electronic situational awareness tool, which was made available to the joint information system staff. At the joint information center, the Emergency Alert System messages were printed, logged, and posted to the facility's message board for staff awareness.

Joint information center staff successfully demonstrated the ability to provide emergency information and instructions to the public and media in a timely manner through press releases, press conferences, and citizen hotline for public inquiry. Staff demonstrated strong collaboration and teamwork in the preparation and delivery of coordinated, prompt, reliable, and actionable information to the public. A total of nine state and county press releases were issued during the exercise. One county press release was issued prior to activation of the joint information center, with the remaining eight state and county releases developed and issued from the joint information center.

Pre-scripted message templates were modified to include accurate precautionary and protective action decisions made by decision-makers on the decision line. Decision line monitoring allowed the joint information center staff to hear real-time discussions and protective action decisions, including Emergency Alert System activation times and message selection. Staff also established and maintained contact with their counterparts in their jurisdictional emergency operations centers to obtain current information.

The state's public information director and assistant reviewed all pre-scripted messages for relevance and content. All press releases provided clear, concise, and accessible messaging using plain language. All press releases generated were reviewed, edited, approved, signed, and time stamped by both directors prior to distribution. Approved messages were accurate, timely, and consistent with coordinated protective action decisions. Once approved, press releases were printed, logged, and posted to the facility messaging board to simulate distribution. Actual message distribution would be through a pre-identified list of media contacts. No impediments to evacuation and alternate evacuation routes were relayed to the joint information center to be messaged to the public.

Two joint press conferences with participants from the state, counties, and utility were held during the exercise. The first press conference was held following the Site Area Emergency, and the second following General Emergency. Each press conference was effective in

providing timely and coordinated information to the public and media. Prior to each press conference, a pre-caucus meeting was held to ensure accurate information was delivered in a cascading manner from most affected county/state to the utility. Inquiries from the media were referred by the facilitator to the appropriate agency and answered accurately.

The Tennessee Valley Authority staffed media inquiry/monitoring, and the state staffed the citizen hotline for public inquiry in the joint information center workroom. This allowed for real-time information gathering to ensure media broadcasts and information provided to public callers was accurate and timely. A public inquiry operator identified a discrepancy between a published county press release and the Watts Bar Nuclear Plant emergency preparedness calendar. The operator immediately notified the state public information director verbally, which drove a discussion between both the Tennessee Valley Authority and offsite public information staff on the potential impact, and the corrective actions needed for emergency planning.

For this core capability the following radiological emergency preparedness capability targets were met: 1.1, 1.2, 3.1, 3.2, 3.3.

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.5 Risk Jurisdictions

3.5.1 Rhea County Emergency Operations Center

Operational Coordination Capability Summary

The Rhea County Emergency Management Agency Director and emergency operations center staff successfully demonstrated the capability to establish and maintain a unified and coordinated operational structure which ensured protective action decisions were coordinated and implemented in a timely manner.

Upon notification of a radiological incident at the Watts Bar Nuclear Plant, the emergency management director notified key staff and county officials using a call down roster. Even though staff were prepositioned in the emergency operations center in accordance with the extent of play agreement, the director still demonstrated the process and system by which staff and officials would be notified. As the emergency classification level changed so did emergency operations center staffing. Following Alert, the director declared the facility operational and briefed staff on the incident and plant status.

The primary method of notification was the digital national warning system; however, this system was inoperable during the exercise. Despite system inoperability there were multiple other means of communications available, including landlines and cellular telephones, facsimile machines, electronic mail, and an electronic situational awareness tool. For this exercise cellular telephone was the primary method of communication and notification.

Additionally, a decision line was used to coordinate protective action decisions between the state and counties.

The emergency management director provided direction and control for the local response effort from the emergency operations center. The new emergency operations center had enough space and resources to support the response. Digital displays and posted maps were utilized frequently to maintain situational awareness and facilitate decision-making and discuss implementation actions. The radiological operations status board was updated with current weather information, including real time wind direction, which visually illustrated the impacted, or potentially impacted, sectors following a radiological release. The emergency management director maintained situational awareness and ensured decisions and actions were coordinated through the decision line and with county partners in the emergency operations center.

Following each decision line call, the director briefed emergency operations center staff and then conducted round table discussions with each agency/organization representative about implementation actions. The first protective action decision implemented by the Rhea County Emergency Management Agency Director was to relocate students from schools in the emergency planning zone to paired schools outside of the 10-mile emergency planning zone. The second protective action decision was to evacuate and shelter sectors within the plume path. The director concurred with the decision and evacuated sectors A-1, D-1 in Rhea County.

Prior to evacuation, the director asked the radiological officer to provide a radiological safety briefing. A comprehensive briefing was provided to emergency operations center staff and emergency workers. The radiological officer discussed and demonstrated the use of direct reading and permanent record dosimeters, as well as reviewed their administrative limits and the use of potassium iodide. The radiological officer emphasized the differences between the various administrative and turnback limits. Following the briefing, the director confirmed the sheriff's office and police department had issued their emergency workers kits in preparation for establishing and staffing traffic and access control points if an evacuation was ordered. Dosimetry leak test dates, survey meter calibration dates, and potassium iodide expiration dates were validated during the staff assistance visit conducted on August 26, 2021.

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

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

Public Information and Warning Capability Summary

The Rhea County Public Information Officer successfully demonstrated the capability to provide instructions to the public. The public information officer in the emergency operations center was responsible for coordinating with the Rhea County Public Information Officer at

the joint information center. This coordination included verifying accuracy of information and instructions and obtaining the director's approval on press releases prior to dissemination. (All press releases were developed and disseminated from the joint information center.) All Emergency Alert System messages and press releases were received by the Rhea County Emergency Management Agency Deputy Director via electronic mail then forwarded to the Rhea County Public Information Officer in the emergency operations center for review, revision, situational awareness and/or record-keeping.

Response to public inquiries was overseen by the Rhea County Public Information Officer. The public information officer also monitored social media platforms and responded to simulated telephone calls pertaining to the radiological incident at the Watts Bar Nuclear Plant. All inquiries were answered accurately and in a timely manner.

The Rhea County 911 Center Communications Officers had the ability and authority to activate the outdoor warning system, but only if the state watch point officers were unable to activate the system. Through interview the 911 director explained the activation protocols and how the system would report a siren failure. A Rhea County Sheriff's Office Chief explained the process by which backup route alerting would be conducted if a siren failure was reported. The chief would review the backup route alert map, identify the failed siren, and dispatch a patrol vehicle to drive the specified routes in the siren coverage area. The deputy would drive the assigned routes and announce an approved emergency message over the vehicles public address system.

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

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.5.2 Rhea County Backup Route Alerting

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

Backup alert and notification of the public was successfully demonstrated in accordance with the Rhea County Implementing Procedures and as part of out of sequence activities. The demonstration was completed by a deputy with the Rhea County Sheriff's Office after notification of a simulated failure of siren 64. The emergency management director identified the siren on a map, outlined the roads to be driven by the deputy, and then provided the deputy with a radiological safety briefing. The briefing included instructions on the use of dosimetry and when and why to ingest potassium iodide, as provided in a pre-configured emergency worker kit. The actual time to complete route alerting was approximately 24 minutes. This demonstrated that backup alert and notification of the public in the event of a siren failure could be completed within a reasonable time. It was noted that all emergency response actions would be taken in accordance with the Multi-Jurisdictional Radiological Emergency Response Plan (dated May 24, 2019) – Rhea County Implementing Procedures, Section 5, page CC-11, and supporting annexes.

For this core capability the following radiological emergency preparedness capability target was met: 3.2.

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.5.3 Rhea County Traffic Control Points

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

Rhea County traffic and access control points were discussed through interview during out of sequence activities. The Rhea County Maintenance Department Superintendent, Rhea County Sheriff's Office Deputies and emergency management staff were interviewed. The superintendent explained how each point would be equipped, while the deputies explained how they would assign, mobilize, and staff each point. The superintendent would work in conjunction with the sheriff's office and other agencies/organizations to ensure enough resources were allocated to manage traffic.

The superintendent and deputies identified that staff and equipment were sufficient for establishing traffic and access control points in Rhea County. In addition, both the superintendent and deputies would work closely with emergency management staff, to provide emergency workers with kits and a radiological safety briefing before deployment to assigned points. Any evacuation route impediments would be coordinated between the maintenance department, sheriff's office, and the Tennessee Department of Transportation.

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

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.5.4 Rhea County School Interviews

Critical Transportation Capability Summary

Rhea County demonstrated the capability to implement protective actions for schools in the event of a radiological incident at the Watts Bar Nuclear Plant. The evaluation was conducted through interview with a school principal, transportation director/bus driver, and two assistant district directors at the Rhea County Emergency Operations Center. Rhea County

has four schools in the 10-mile emergency planning zone: Rhea County High School, Rhea County Middle School, Springs City Elementary School, and Springs City Middle School. At each emergency classification level, the school district director would be notified. The school district director would then notify schools and bus drivers using landline and cellular telephones and a school alert system with two-way radios. Bus drivers would be dispatched to the schools following an Alert. The schools would be relocated to Soddy Daisy High School in Soddy Daisy, Tennessee or Cumberland County High School in Crossville, Tennessee at Site Area Emergency. Parents would be notified through a school alerting program. Students living inside the 10-mile emergency planning zone who attend Frazier Elementary School, which is located outside the 10-mile emergency planning zone, would remain at the school.

There were enough buses available to transport all the students, faculty, and staff from the school in one trip. The school nurse would accompany the students to maintain medical records and medications. Buses equipped for students with disabilities would also be available. Student accountability would be maintained by teachers using daily attendance rosters. After transporting students to host schools, bus drivers would be available to report to the Rhea County Emergency Operations Center for an emergency worker briefing, dosimetry, and potassium iodide, and then dispatched (if necessary) for other transportation needs in the county. Bus drivers do not currently receive training on the school relocation process.

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

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.5.5 McMinn County Emergency Operations Center

Operational Coordination Capability Summary

The McMinn County Emergency Management Agency Director successfully demonstrated notification and mobilization of emergency operations center staff; provided direction and control for the county response effort; and coordinated and implemented protective action decisions. Each critical task was successfully demonstrated at the McMinn County Emergency Operations Center, with the director providing overall authority for response operations in McMinn County.

McMinn County Emergency Operations Center staff were prepositioned in accordance with the extent of play agreement. Additional staff were notified and mobilized by the emergency management director using a secure notification system. After additional staff members were notified and arrived, the director declared the emergency operations center operational. Notification of emergency classification level changes were received via the director's cellular telephone from the state watch point. This notification method was not outlined in plans and procedures, and was used due to the technical issues with the Digital National Warning System. As a result of the notification method change, the emergency management director

did not receive the call via cellular telephone for the Notice of Unusual Event. Due to exercise artificiality, the emergency management director was able to observe the change in emergency classification level on the electronic situational awareness tool. After consultation with the exercise controller, the emergency management director received a call via cellular telephone of the Notice of Unusual Event. All other emergency classification level changes were successfully received and in a timely manner by the emergency management director.

There were no additional issues or communications system failures observed other than the initial notification. Communication with the state direction and control officer and other county emergency management directors was over a decision line that remained open throughout the exercise. The protective action decisions were recommended and agreed upon by the state and counties via the decision line. The primary communications system in the emergency operations center was a landline telephone with backup communications systems consisting of cellular telephones, electronic email, short message service, an electronic situational awareness tool, facsimile machines, and a radio system. In addition to communications systems, there was sufficient space and equipment to support emergency response efforts.

The McMinn County Emergency Management Agency Director provided direction and control for emergency operations staff. The decision line served as the primary source of information for emergency operations center staff; a plant liaison also routinely provided information for situational awareness. Before each decision line call, the director announced the time the call would take place to ensure emergency operations center staff were prepared to listen, help inform decisions, and implement the agreed upon decisions. Although none of the decisions impacted McMinn County, the director and emergency operations center staff were ready to implement decisions. This included identifying individuals with access and functional needs that would require assistance from the county to evacuate, as well as coordinating with the school representative in the emergency operations center to consider relocating E.K. Baker School students.

The radiation safety officer was in control of all dosimetry equipment for emergency workers deploying out from the county. There were pre-assembled emergency worker kits containing direct reading and permanent record dosimeters, exposure record, potassium iodide, and instructions for each emergency worker. The radiation safety officer conducted a safety briefing for emergency workers prior to deployment, and each were assigned a kit. During the briefing, the officer explained administrative and turnback limits and what to do if ingestion of the potassium iodide tablets was directed. Dosimetry leak test dates, survey meter calibration dates, and potassium iodide expiration dates were validated during the staff assistance visit conducted on August 26, 2021.

Through interview, personnel from the McMinn County Highway Department described the process for management and establishment of traffic and access control points in accordance their implementing procedures. Prior to establishing the points, emergency workers would receive radiological safety and exposure control training, including administrative and turnback limits from the radiation safety officer, and would be issued an emergency worker kit at that time.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

Public Information and Warning Capability Summary

The McMinn County Emergency Management Agency Director and a McMinn County Sheriff's Office Deputy successfully demonstrated the capability to alert and notify the public in a timely manner. In accordance with plans and implementing procedures, the Tennessee Emergency Management Agency had primary responsibility for activation of prompt notification systems, including the Emergency Alert System and outdoor warning system. Rhea County would perform notification activities only if the state was unable. Although no siren failures were identified during the exercise, a McMinn County Sheriff's Office Deputy explained how backup route alerting would be conducted. If the emergency operations center was notified by the state or Rhea County of a siren failure within McMinn County, patrol vehicles would be directed to drive specified routes in the siren coverage area while broadcasting a pre-scripted emergency message to advise the public of emergency information and instructions.

A joint information center in Chattanooga, Tennessee, was used to coordinate and disseminate emergency information to the public and media. McMinn County provided a public information officer to the joint information center. The McMinn County Emergency Management Agency Director provided information to the public information officer at the joint information center for inclusion into press releases. McMinn County produced one county-specific press release following General Emergency advising the public in the affected sectors to monitor and prepare for potential additional protective measures. The citizens hotline for public inquiry was staffed by state and utility personnel at the joint information center. When inquiries were received specific to McMinn County, McMinn County officials in the emergency operations center provided appropriate responses to the inquiries.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.5.6 McMinn County Backup Route Alerting

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

McMinn County backup route alerting was completed through interview of the McMinn County Emergency Management Agency Director and McMinn County Sheriff during out of sequence activities. Through interview the director and sheriff described how a siren failure would be identified and then the appropriate siren area coverage map was used to complete backup route alerting. A review by the sheriff of several coverage maps and routes to be driven successfully demonstrated that notification of the public in the event of a siren failure could be accomplished in a timely manner. Additionally, the process for notifying and mobilizing deputies to complete backup route alerting, as well as emergency worker exposure control was discussed.

For this core capability the following radiological emergency preparedness capability target was met: 3.2.

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.5.7 McMinn County Traffic Control Points

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

McMinn County traffic and access control points were discussed through interview during out of sequence activities. During the interview, the McMinn County Department of Transportation Commissioner discussed the process for establishing and maintaining the pre-identified points during a radiological incident at the Watts Bar Nuclear Plant. During the interview, the commissioner outlined the equipment and personnel needed to establish traffic and access control points at Site Area Emergency, or when ordered by the sheriff or emergency management director. Prior to establishing the points, emergency workers would receive radiological safety and exposure control training, including administrative and turnback limits.

It was outlined that traffic and access control would be stationary barricades with signage to direct traffic flow out of the affected areas to shelter information points. The county had the ability to establish up to 20 traffic and access control points. The points are a mix of staffed and unstaffed, with local law enforcement agencies providing staffing, as appropriate. Maintaining the points, to include rerouting traffic, would be managed from the county emergency operations center in coordination with other state agency partners. Impediments to evacuation routes would be cleared by mobile response resources prepositioned along the evacuation routes.

Access control for reentry of public would be from one of the four staffed points; those points were pre-identified and would be staffed by local law enforcement. Instructions for reentry, exit, and monitoring and decontamination would be provided to law enforcement by the emergency management director through the law enforcement liaison in the emergency operations center, as appropriate.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.5.8 McMinn County School Interview

Critical Transportation Capability Summary

The McMinn County Schools Principal and Safety Supervisor demonstrated the capability to implement protective actions for schools in the event of a radiological incident at Watts Bar Nuclear Plant. The evaluation was conducted through interview with the principal and safety supervisor at the McMinn County emergency operations center.

McMinn County Schools has one school in the 10-mile emergency planning zone: E.K. Baker School. At each emergency classification level, the transportation supervisor would be notified. Notifications to the transportation supervisor, school, and district would be made through telephone and a school alert system using two-way radios. Bus drivers would be dispatched to the school following Alert. The school would be relocated to McMinn Central High School in Etowah, Tennessee at Site Area Emergency. Parents would be notified through the school alert system. Students living inside the 10-mile emergency planning zone who attend Rogers Creek Elementary School and McMinn County High School, which were located outside the 10-mile emergency planning zone, would remain at their respective schools.

There would be enough buses available to transport all students and applicable staff members from the school in one trip. The buses would be escorted by sheriff office deputies. The school nurse aide would maintain medical records and medications. Buses equipped for students with disabilities would also be available. Student accountability would be maintained by teachers using daily attendance rosters. After transporting students to McMinn Central High School, bus drivers would be available, if needed, to report to McMinn County Emergency Operations Center for an emergency worker briefing, dosimetry, and potassium iodide, and then dispatched for other transportation needs within the county. School staff members and bus drivers were trained periodically for school relocation.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.5.9 Meigs County Emergency Operations Center

Operational Coordination Capability Summary

The Meigs County Emergency Management Agency Director and emergency operations center staff successfully demonstrated the capability to notify and mobilize emergency support function staff, and coordinate and implement protective action decisions in response to a radiological incident at the Watts Bar Nuclear Plant.

The Notice of Unusual Event declaration was received by the assistant emergency management director and not the director via cellular telephone from the state watch point. Upon receipt of the notification, the assistant emergency management director provided the information to the director. The emergency management director, in turn, called the state watch point to confirm the information received and to alert them that the notification was made to the wrong individual.

The emergency management director then requested a Meigs County 24-hour Warning Point Communications Officer notify emergency operations staff of the incident. The communications officer used a three-phased, tiered system to notify appropriate staff. Upon notification of a Notice of Unusual Event, the first tier or senior leaders and county department heads were informed for situational awareness only. At Alert, the second tier or all emergency operations center staff members were notified and mobilized to the emergency operations center. At Site Area Emergency, the third-tier or all staff were directed to report to the emergency operations center. Shortly after Alert, the director opted to declare the emergency operations center operational, and the communications officer was directed to notify and mobilize staff using a mass notification system. The emergency operations center staff were prepositioned in accordance with the extent of play agreement, but upon receipt of the exercise message, staff signed in, were given an exercise identification badge, and began setting up their workstations within their designated emergency support function and/or functional area.

Upon arrival, staff members were directed to their workstations, which contained a position binder; plans and procedures; checklists; telephone directories; messaging forms; and a detailed emergency action level overview sheet. The emergency operations center was sufficiently equipped to support response operations. Important information was displayed including maps of the 10-mile emergency planning zone, county roads, weather information, evacuation routes, community events, and the emergency classification level. An electronic situational awareness tool was projected on a large screen and used to log resource requests from the county, as well as to maintain situational awareness. Communications systems consisted of landline and cellular telephones, a facsimile machine, a radio system, and the internet. Emergency operations center staff were well trained and knowledgeable in the use of these communications systems.

Direction and control was successfully demonstrated by the Meigs County Emergency Management Agency Director. This was demonstrated through participation in decision line calls and facilitation of situational briefings within the emergency operations center. All protective action decisions were discussed with the state direction and control officer and county emergency management directors. Concurrence was received on all decisions prior to implementation. Emergency operations center staff helped inform decisions, and were responsible for implementing county-specific actions related to those decisions.

Following the decision to relocate schools, the Meigs County Schools representative, in coordination with the director, implemented protective actions for schools. Working from a daily status report which identified the number of students, faculty, staff, and buses, early dismissal began shortly after Site Area Emergency. Notionally, Meigs North Elementary School, Meigs Middle School, and Meigs County High School were relocated to McMinn Central High School within 45 minutes. School superintendents, transportation supervisors, and parents/guardians were notified via an automated school notification system. Virtual and home-schooled students in the 10-mile emergency planning zone were advised to follow protective action decisions for the public.

As a result of the decision to relocate schools, the radiological safety officer provided a briefing on dosimetry and potassium iodide to emergency operations center staff. The officer explained how emergency workers dispatched from designated locations would be issued an emergency worker kit containing direct reading and permanent record dosimeters, potassium iodide, and an exposure record. Additionally, since the emergency operations center was inside the 10-mile emergency planning zone, group dosimetry was used to monitor staff exposure. During a subsequent briefing, the Meigs County Department of Health representative explained issuance and ingestion of potassium iodide. Dosimetry leak test dates, survey meter calibration dates, and potassium iodide expiration dates were validated during the staff assistance visit conducted on August 24, 2021.

The second protective action decision that affected Meigs County was made following General Emergency and included evacuation of sectors B1, C2 within the 2-mile emergency planning zone, and shelter of sectors B2, B4, C2 within the 5-mile emergency planning zone. The emergency medical services representative served as the access and functional needs coordinator. The coordinator identified approximately 12 individuals living within the emergency planning zone who had self-identified an access or functional need. The coordinator simulated calling each individual, confirmed there was a radiological incident at the Watts Bar Nuclear Plant, and asked if they required assistance. The coordinator then work with the appropriate representative in the emergency operations center to arrange the assistance needed.

The institutionalized population within the county included a prison housing approximately 40 inmates and the Brookwood Nursing Home with approximately 80 residents. If needed, sheriff's office deputies would initiate relocation of the inmates to the detention center in McMinn County. Relocation of nursing home residents would be accomplished through coordination with the Meigs County Superintendent of Schools, Meigs County Emergency Medical Services Director, and Tennessee Department of Health, Division of Emergency Services Representatives. District school buses would be used to move residents to a facility in McMinn County.

Through interview, deputies with the Meigs County Sheriff's Office and personnel with the Meigs County Highway Department described the process by which traffic and access control points would be established. Deputies and highway department personnel were well trained and demonstrated knowledge of dosimetry, administrative and turnback limits, and use of potassium iodide.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

Public Information and Warning Capability Summary

The Meigs County Public Information Officers successfully demonstrated the capability to coordinate, develop, and disseminate emergency information to the public and media in a timely manner. This was demonstrated by the public information officers at the emergency operations center and joint information center. Following the Notice of Unusual Event, two assistant public information officers deployed to the emergency operations center, and a lead public information officer to the joint information center in Chattanooga, Tennessee.

Dedicated cellular telephones assigned to the public information officers were used as the primary means of communication and allowed them to readily share and send information between the two facilities. Inside the emergency operations center, the assistant public information officers monitored the electronic situational awareness tool, social media platforms, and shared any plant updates. Although not used, operational checks were done on the two additional landline telephones, large television screens, and a facsimile machine if redundant communications systems were needed.

In accordance with plans and implementing procedures, the Tennessee Emergency Management Agency had primary responsibility for activation of prompt notification systems, including the Emergency Alert System and outdoor warning system. Rhea County would perform notification activities only if the state was unable. Although no siren failures were identified during the exercise, a Meigs County Sheriff's Office Deputy explained how backup route alerting would be conducted. If the emergency operations center was notified by the state or Rhea County of a siren failure within Meigs County, patrol vehicles would be directed to drive specified routes in the siren coverage area while broadcasting a pre-scripted emergency message to advise the public of emergency information and instructions.

A total of two county-specific press releases were developed and disseminated. There were no public inquiry or rumor control calls even though the primary telephone number was published in each the press releases. Although emergency information contained in the press releases was clear, concise, and informative, none of the press releases addressed individuals with access and functional needs, pets, or institutionalized persons within the county.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.5.10 Meigs County Traffic Control Points

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

Meigs County traffic and access control points were discussed through interview during out of sequence activities. Unfortunately, deputies with the Meigs County Sheriff's Office were unable to participate due to a real-world trial at which they were testifying. However, the emergency management director explained the sheriff's office role in traffic and access control point set-up and staffing. Additional support would be provided by the Meigs County Emergency Services Fire-Rescue Firefighters and Tennessee Department of Transportation personnel, as needed.

If traffic and access control points were required, the Meigs County Sheriff's Office would be contacted by the emergency management director or a communications officer as part of their notification and mobilization process when activating the emergency operations center. The sheriff or a deputy would report to the emergency operations center and be responsible for identifying the points to set-up and staff. All deputies assigned to staff a traffic and access control point would be asked to report to the emergency operations center to receive a radiological safety briefing and obtain an emergency worker kit.

Any impediments to an evacuation route would be relayed via radio or cell telephone from the deputy in the field to the sheriff or deputy in the emergency operations center. The deputy in the field would attempt to clear the impediment immediately; the severity of the impediment would affect the time and resources necessary to clear. Access to the restricted area would be documented through the use of a tracking log. The sheriff or deputy in the emergency operations center would be contacted with any questions regarding persons authorized to enter the affected area.

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

a. **Level 1 Finding:** None

b. **Level 2 Finding:** None

c. **Not Demonstrated:** None

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

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

3.5.11 Meigs County School Interview

Operational Coordination Capability Summary

Meigs County School District officials demonstrated the capability to implement protective actions for schools in the event of a radiological incident at the Watts Bar Nuclear Plant. The evaluation was conducted through interview with a school principal, bus driver, school safety supervisor, and school resource officer at the Meigs County Emergency Operations Center. Meigs County had three schools in the 10-mile emergency planning zone: Meigs North Elementary School, Meigs County High School, and Meigs Middle School. At each emergency classification level, the director of schools and the transportation supervisor would be notified. Notification to the schools and bus drivers would be through telephone and tone-alert radios. Bus drivers would be dispatched to the three schools at Alert. The three schools would be relocated to Central High School in Etowah, Tennessee at Site Area Emergency. Parents would be notified through a school alerting program. Students living inside the 10-mile emergency planning zone who attend Meigs South Elementary School, which is located outside the 10-mile emergency planning zone, would remain at the school.

There are enough buses available to transport all the students and applicable staff members from the three schools in one trip. Each group of buses would be escorted by the school resource officer and the school nurse, who would maintain medical records and medications. Buses equipped for students with disabilities would also be available. Student accountability would be maintained by teachers using the daily attendance rosters. After transporting students to Central High School, bus drivers would report to Meigs County Emergency Operations Center for emergency worker briefing, dosimetry, and potassium iodide, and then dispatched for other transportation needs in the county. School system personnel and bus drivers are trained annually for school relocation.

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

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

3.5.12 Hamilton County Reception and Congregate Care Center

Mass Care Services Capability Summary

Hamilton County Emergency Management and Homeland Security Agency and Hamilton County Public Health personnel successfully demonstrated the capability to implement radiological monitoring and decontamination of evacuees, and to identify, register, temporarily shelter, and provide congregate care for evacuees at the Soddy-Daisy High School reception center.

The reception and congregate care center was setup and operational. Route markings were easy to follow and directed evacuees one-way to the first station which was vehicle monitoring. There were clearly marked areas for vehicle and evacuee monitoring and decontamination and temporary shelter. Instrumentation was available at each station and contamination control measures were used to reduce the potential for cross-contamination inside and outside the facility. Measures included cones, barrier tape, butcher paper, etc. Also, one vehicle parking area was designated for non-contaminated vehicles while a separate area was designated for contaminated vehicles. Wastewater from vehicle and/or animal decontamination would be gathered in a wastewater retention pond positioned near the decontamination areas. Additionally, sufficient equipment and supplies were available including dosimetry, potassium iodide, and personal protective equipment for emergency workers, and potassium iodide for the public.

The demonstration began with a detailed radiological briefing and complete walk-through of the monitoring and decontamination process. Source checks on the portal monitor and handheld survey meters were performed as a group with thorough discussion on the proper operation of the equipment. Direct reading and permanent record dosimeters were issued to each emergency worker with comprehensive instructions on the use of each type.

Six evacuees were directed through the monitoring and decontamination process. The evacuees entered the high school complex in their respective vehicles. Upon entering the complex, signs and directional arrows guided them to the first station. At this station Soddy-Daisy Fire Department Firefighters monitored the vehicle, one on each side. They used survey meters to monitor for contamination on the grill, wheel wells, door handles, and bumpers of each vehicle. If the meter read more than 300 counts per minute this indicated contamination, and the evacuee was instructed to drive the vehicle to the decontamination area. If no contamination was present, the evacuee was instructed to drive the vehicle to the non-contaminated parking area. If decontamination failed to remove contaminants, the evacuee would drive and park the vehicle in the contaminated parking area to be re-monitored and re-decontaminated at a later time.

Once parked in the appropriate parking areas, the evacuees followed signs and directional arrows to the evacuee monitoring area. One portal monitor was set up at the entrance to the Soddy-Daisy High School gymnasium to demonstrate initial evacuee monitoring. All six evacuees were processed through the portal monitors. Based on the average per person time to process the six evacuees through portal monitors (including two contaminated evacuees), the reception center would need to add an additional portal monitor to this location or modify the initial registration process if there were contaminated evacuees. One portal monitor was sufficient to process the expected number of evacuees for this location if the evacuees were not contaminated. Each evacuee's name and portal monitor alarm status were documented as part of the initial portal monitoring. This process took additional time to process each evacuee.

Individuals who did not alarm the portal monitor were issued a green wristband indicating they were not contaminated and then were directed to the congregate care registration area. Contaminated evacuees were escorted along a butcher paper path to an initial handheld monitoring station and then to separate male or female locker rooms for a more extensive contamination survey and decontamination. There was an adequate number of personnel available to perform monitoring and decontamination of evacuees. Small areas of contamination were identified based on specific areas of the person that alarmed the portal monitor detectors. Localized contamination was removed using various methods. Overall

contamination was removed by showering or larger area cleaning. Modesty clothing was available for evacuees who had been decontaminated.

Following decontamination, the evacuees were given a green wristband to indicate that they were not contaminated. Bags for personal belongings, along with appropriate documentation, were available for evacuee personal items that would be decontaminated when time was available. Contaminated waste and discarded clothing were disposed of in large colored bags. The site supervisor would determine if evacuees who could not be adequately decontaminated would require follow-up medical attention at a designated hospital.

American Red Cross Southeast Tennessee Chapter personnel demonstrated the sheltering and congregate care portion of this core capability. Shelter operations were established in accordance with standard American Red Cross shelter management procedures and their memorandum of understanding with the Hamilton County School District.

Shelter and congregate care of evacuees coming to this facility were registered using American Red Cross paper and electronic forms. Registration occurred after evacuees were monitored and found to not be contaminated; if contaminated, evacuees were decontaminated prior to registration. Green wristbands were used to identify non-contaminated evacuees. Once registered, evacuees were provided guidelines for staying within the shelter and given personal hygiene, comfort kits, and bedding if they chose to stay; evacuees were not required to stay at the facility. If they chose to stay, evacuees were provided ample personal space, meals, and medical services. Security within the facility would be provided by either American Red Cross contracted private security or Hamilton County Sheriff's Office Deputies.

Congregate care services included family areas, separate male and female areas, recreational, and medical services. Service animals would be accommodated within the facility and would be handled as outlined in American Red Cross guidelines. The expected evacuee population of for this facility was 1,087 persons. Soddy-Daisy High School had ample space to provide temporarily shelter and congregate care for evacuees.

For this core capability the following radiological emergency preparedness capability target was met: 5.1.

a. **Level 1 Finding:** None
b. **Level 2 Finding:** None
c. **Not Demonstrated:** None
d. **Prior Level 2 Findings – Resolved:** None
e. **Prior Level 2 Findings – Unresolved:** None

Section 4: Conclusion

FEMA assesses offsite response organization preparedness on an ongoing basis which meets the intent of the 44 CFR 350 planning standards and, through the assessment of selected core capabilities, the National Preparedness Goal. This report is used to document biennial demonstration-based assessment activities and will be used to inform the Biennial Preparedness Report in December 2022.

The analysis of capabilities in Section 3 described the state of Tennessee and Watts Bar Nuclear Plant offsite response capabilities. Overall, the exercise was a success. The demonstration-based assessment activities evaluated by core capabilities, objectives, and capability targets were successfully demonstrated with the exception of the level 2 finding. All offsite response organizations demonstrated knowledge of their emergency response plans and procedures, and successfully demonstrated the ability to protect the health and safety of the public in the event of an incident involving the Watts Bar Nuclear Plant.

In addition, the state of Tennessee and Watts Bar Nuclear Plant offsite response organizations completed this exercise during the SARS-CoV-2/COVID-19 pandemic. The state and counties innovatively and successfully implemented and used technology to ensure sufficient support and response, while also protecting their workforces. The integration of tele- and videoconferencing not only allowed all players to participate and enhanced the operational communication capability within the state. The lessons learned and best practices gained through the implementation and use of new technology should be documented in emergency response plans and procedures.

Based on the results of this exercise and FEMA's review of the 2020 Annual Letter of Certification submitted by Tennessee, the offsite radiological emergency response plans and preparedness of the state of Tennessee and the affected local jurisdictions site-specific to the Watts Bar Nuclear Plant can be implemented. They are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of an emergency at the site. The Title 44 CFR, Part 350 approval of the offsite radiological emergency response plans and preparedness site-specific to the Watts Bar Nuclear Plant granted on July 8, 1985, will remain in effect.

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

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Appendix A: Exercise Timeline

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken					
		SEOC/Dose Assessment	RCC/RMCC	Rhea County*	McMinn County	Meigs County	JIS/JIC**
Unusual Event	8:14 a.m.	8:19 a.m.	8:15 a.m.	8:34 a.m.	8:59 a.m.	8:31 a.m.	-
Alert	8:42 a.m.	9:00 a.m.	8:54 a.m.	8:59 a.m./ 9:05 a.m.	9:08 a.m.	9:00 a.m.	-
Site Area Emergency	9:51 a.m.	10:01 a.m.	9:55 a.m.	10:00 a.m./ 10:07 a.m.	10:02 a.m.	10:02 a.m.	-
General Emergency	10:48 a.m.	10:59 a.m.	10:55 a.m.	11:10 a.m.	11:06 a.m.	11:09 a.m.	11:39 a.m.
Simulated Rad. Release Started	10:48 a.m.	11:13 a.m.	11:03 a.m.	-	11:06 a.m.	11:09 a.m.	11:13 a.m.
Simulated Rad. Release Ended	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational	-	9:23 a.m.	9:14 a.m.	10:16 a.m.	9:42 a.m.	9:10 a.m.	10:20 a.m.
State of Emergency Declared	-	11:44 a.m.	-	-	-	-	-
End Exercise		1:41 p.m.	1:42 p.m.	1:39 p.m.	1:42 p.m.	1:40 p.m.	1:40 p.m.
Protective Action Decision 1: Relocate schools Air/Rail/River Warning		10:15 a.m.	10:15 a.m.	10:13 a.m.	10:11 a.m.	10:14 a.m.	10:45 a.m.
Siren Activation		10:20 a.m.	10:20 a.m.	10:20 a.m.	10:20 a.m.	10:20 a.m.	10:20 a.m.
EAS Message: #7 modified		10:20 a.m.	10:20 a.m.	10:20 a.m.	10:20 a.m.	10:20 a.m.	10:20 a.m.
Protective Action Decision 2: Evacuate Sectors: A1, B1, C1, D1 Shelter Sectors: A2, A3, B2, B4, C2 All Others Monitor/Prepare		11:16 a.m.	11:16 a.m.	11:17 a.m.	11:14 a.m.	11:16 a.m.	11:39 a.m.
Siren Activation		11:25 a.m.	11:25 a.m.	11:25 a.m.	11:25 a.m.	11:25 a.m.	11:25 a.m.
EAS Message: #41 modified		11:25 a.m.	11:25 a.m.	11:25 a.m.	11:25 a.m.	11:25 a.m.	11:25 a.m.
Protective Action Decision 3: No Change in PAD		1:24 p.m.	1:24 p.m.	1:24 p.m.	1:24 p.m.	1:24 p.m.	N/A
KI Ingestion Decision: Emergency Workers: Field Teams Only		-	9:32 a.m.	-	-	-	-

*First time indicates receipt via WebEOC and the second time indicates official notification.
**Denotes the time in which a decision was messaged from the joint information center.

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Appendix B: Evaluator Assignments

Location/Venue	Evaluation Team	Core Capability
State Emergency Operations Center	Gene Taylor Nathan Nienhius Jim Greer	Operational Coordination Public Information and Warning
Dose Assessment	Bart Ray	Situational Assessment
Central Emergency Control Center	John Pelchat	Situational Assessment
Radiological Monitoring Control Center	Marcy Campbell	Environmental Response/Health and Safety
Regional Coordination Center	Gerald McLemore	Operational Coordination
Field Teams	Deb Blunt Cheryl Weaver	Environmental Response/Health and Safety
Joint Information System/Center	Glenda Bryson Paul "PJ" Nied Teri Engelhart	Public Information and Warning
Rhea County Emergency Operations Center	Matthew Bradley George Odom Robert Nash	Operational Coordination Public Information and Warning
McMinn County Emergency Operations Center	Dave Ortman DeShun Lowery Steve Watts	Operational Coordination Public Information and Warning
Meigs County Emergency Operations Center	Farrah Stewart Michael Dolder Ashanti Smith Brenda Rembert	Operational Coordination Public Information and Warning

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Appendix C: Exercise Participants

Participating Organizations
State of Tennessee
Tennessee Department of Agriculture, Division of Forestry
Tennessee Department of Correction
Tennessee Department of Environment and Conservation, Division of Radiological Health
Tennessee Department of Health
Tennessee Department of Human Services
Tennessee Department of Public Safety
Tennessee Department of Safety & Homeland Security
Tennessee Department of Transportation, Tennessee Highway Patrol
Tennessee Military Department, Tennessee Emergency Management Agency
Tennessee Wildlife Resources Agency
Rhea County
Dayton Police Department
Graysville Police Department
Rhea County Department of Education
Rhea County Emergency Management Agency
Rhea County Emergency Medical Services
Rhea County Fire and Rescue
Rhea County Fire and Rescue Squad
Rhea County Health Department
Rhea County Highway Department
Rhea County Sheriff's Office
Spring City Police Department
McMinn County
Athens Police Department
Athens Rural Fire Department
McMinn County Auxiliary Communication Services
McMinn County Board of Education
McMinn County Department of Human Services
McMinn County Emergency Management Agency
McMinn County Emergency Medical Services
McMinn County Hazardous Materials Team

Participating Organizations
McMinn County Health Department
McMinn County Highway Department
McMinn County Sheriff's Office
Meigs County
Decatur Police Department
Meigs County Department of Education
Meigs County Emergency Management Agency
Meigs County Emergency Medical Services
Meigs County Fire and Rescue Squad
Meigs County Health Department
Meigs County Highway Department
Meigs County Radio Amateur Civil Emergency Service
Meigs County Sheriff's Office
Hamilton County
Hamilton County Emergency Management Agency
Private Sector
American Red Cross, Chattanooga/Hamilton County Chapter
American Red Cross, Cleveland/Bradley Chapter
American Red Cross, South East Tennessee Chapter
Radio Amateur Civil Emergency Services
Federal
Department of Homeland Security, Federal Emergency Management Agency, Region 4
Nuclear Regulatory Commission, Region 2
Tennessee Valley Authority

Appendix D: Extent of Play Agreement

Signatures

The following agree to support the Watts Bar Nuclear Plant Out of Sequence Activities and Exercise as described herein:

State Director	North Section Chief/FEMA Exercise Director
X Patrick Sheehan Tennessee Emergency Management Agency	X J Ackermann John Ackermann Federal Emergency Management Agency Region 4

State/County Emergency Operations Centers

Core Capability: Operational Coordination

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

Objective 1: Emergency Operations Management

Capability Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations. RPM 2019 Pt III Pg. 185

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

Assessment	Extent of Play
Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner.	Exception: participants players will be prepositioned in their assigned exercise locations. Players will not begin their assigned exercise roles until alert and notification is received
Receive and verify notifications.	No exception
Identify and request additional resources, as needed.	No exception
Determine a facility is operational.	No exception

Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures. RPM 2019 Pt III Pg. 186

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

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

Capability Target 1.4: Protective Action Decisions for the Plume Phase

Intent: The capability to utilize appropriate factors and necessary coordination in the decision-making process used to make protective action decisions for the public. RPM 2019 Pt III Pg. 188

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

Assessment	Extent of Play
Coordinate and make protective action decisions for members of the general public.	No exception.
Coordinate and make protective action decisions for those with access and functional needs.	No exception
Coordinate and make protective action decisions for students at schools.	No exception
Coordinate and make subsequent or alternate protective action decisions.	No exception
Coordinate and make decisions on the administration of potassium iodide (where applicable) for the public and institutionalized members of the population.	No exception

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

Intent: The capability to implement precautionary protective action and/or protective action decisions, including evacuation and/or sheltering, for all populations within the plume and ingestion exposure pathway emergency planning zones. The populations include those with access and functional needs, students, and institutionalized individuals. RPM 2019 Pt III Pg. 189

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

Assessment	Extent of Play
Implement protective action decisions, ensuring communication and coordination with all appropriate jurisdictions.	No exception

Assessment	Extent of Play
Assist those with access and functional needs during the implementation of protective action decisions.	No exception
Communicate, coordinate, and implement protective actions for schools.	No exception
Communicate with transportation officials.	No exception
Identify evacuation routes for the general public.	No exception
Make potassium iodide available to both institutionalized persons and the general public, in accordance with plans and procedures.	Exception: A prop may be used to simulate distribution of potassium iodide.

Objective 2: Exposure Control

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

Intent: The capability to assess and control the radiation exposure and dose received by emergency workers and utilize a decision-making chain to authorize emergency worker exposure limits to be exceeded for specific missions. RPM 2019 Pt III Pg. 196

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

Assessment	Extent of Play
Control emergency workers' exposure and dose, including offsite workers performing duties onsite.	No exception
Maintain record of dose as a result of exposure.	No exception
Authorize exposures and dose in excess of identified limits.	No exception
Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits.	No exception
Determine a correction factor for direct reading dosimeter-based isotopic release mixture.	No exception
Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas.	No exception
Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established protective action guides.	No exception

Capability Target 2.2: Emergency Worker Exposure Control Management

Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs), and identify procedures to monitor their exposure and dose, including following procedures to obtain authorization to receive emergency exposures in excess of the PAGs. RPM 2019 Pt III Pg. 198

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

Assessment	Extent of Play
Maintain an appropriate inventory of direct reading dosimeters that are leak-tested or current in calibration.	No exception
Maintain an appropriate inventory of permanent record dosimeters.	No exception
Retain an adequate supply of radioprotective drugs.	No exception
Adequately distribute appropriate direct reading dosimeters and permanent record dosimeters.	Exception: Distribution of permanent record dosimeters will be simulated.
Adequately distribute radioprotective drugs to emergency workers.	Exception: A prop may be used to simulate distribution of potassium iodide.
Record and report exposures in the field.	No exception
Implement decisions to administer radioprotective drugs.	No exception
Report to individual responsible for managing exposure and dose when limits are reached.	No exception

Objective 3: Alert and Notification

Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel. RPM 2019 Pt III Pg. 200

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

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

Assessment	Extent of Play
ensure that all message traffic is handled without delays that might disrupt emergency operations.	
Identify and address any failures of the systems.	No exception
Transmit, receive, and understand messages (i.e., "content check").	No exception

Core Capability: Public Information and Warning

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

Objective 3: Alert and Notification

Capability Target 3.2: Alert and Notification of the Public

Intent: The capability to provide instructions to the public. RPM 2019 Pt III Pg. 201

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

Assessment	Extent of Play
ALERT AND NOTIFICATION SYSTEM: Sequentially provide an alert signal followed by an initial instructional message to populated areas.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.

Assessment	Extent of Play
ALERT AND NOTIFICATION SYSTEM: Alert and notify the general public.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.
ALERT AND NOTIFICATION SYSTEM: Identify and address any failures of the system(s) or portion of a system(s).	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.
ALERT AND NOTIFICATION SYSTEM: Actual testing of the mobile public address system will be conducted at an agreed-upon location.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.

Assessment	Extent of Play
EMERGENCY ALERT SYSTEM: Identify the process to activate the Emergency Alert System.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.
EMERGENCY ALERT SYSTEM: Ensure that updated emergency information is disseminated in a timely manner.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.
EMERGENCY ALERT SYSTEM: Ensure that current emergency information is repeated at pre-established intervals.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.

Assessment	Extent of Play
EMERGENCY ALERT SYSTEM/NATIONAL WEATHER SERVICE STATION: Identify the process to activate the Emergency Alert System, to include the process to receive and then broadcast updated information/messages and verification of the message, if applicable.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.
EMERGENCY ALERT SYSTEM/NATIONAL WEATHER SERVICE STATION: Broadcast the message on a 24-hour basis.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.

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

Intent: The capability to disseminate emergency information and instructions to the public during all phases of an incident. RPM 2019 Pt III Pg. 203

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

Assessment	Extent of Play
PLUME PHASE: Deliver coordinated, prompt, reliable, and actionable information in a timely manner.	No exception
PLUME PHASE: Provide clear, concise, accessible messaging using plain language.	No exception
PLUME PHASE: Messaging addresses appropriate cultural and linguistic considerations.	No exception

Assessment	Extent of Play
PLUME PHASE: Ensure subsequent messaging is consistent with protective actions.	No exception
PLUME PHASE: Update information as the incident progresses, to include validating previously identified protective areas and clearly identifying any new protective action areas, any information that is no longer valid, and any changes to previously provided information (e.g., rerouting of evacuation routes due to impediments, etc.).	No exception
PLUME PHASE: Respond to media and public inquiries.	No exception

Regional Coordination Center

Core Capability: Operational Coordination

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

Objective 1: Emergency Operations Management

Capability Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations. RPM 2019 Pt III Pg. 185

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

Assessment	Extent of Play
Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner.	Exception: participants players will be prepositioned in their assigned exercise locations. Players will not begin their assigned exercise roles until alert and notification is received
Receive and verify notifications.	No exception
Identify and request additional resources, as needed.	No exception
Determine a facility is operational.	No exception

Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures. RPM 2019 Pt III Pg. 186

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2,

C.2.a, C.2.b, C.3, D.4, E.1, H.6, and O.1).

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

Capability Target 1.4: Protective Action Decisions for the Plume Phase

Intent: The capability to utilize appropriate factors and necessary coordination in the decision-making process used to make protective action decisions for the public. RPM 2019 Pt III Pg. 188

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

Assessment	Extent of Play
Coordinate and make protective action decisions for members of the general public.	No exception
Coordinate and make protective action decisions for those with access and functional needs.	No exception
Coordinate and make protective action decisions for students at schools.	No exception
Coordinate and make subsequent or alternate protective action decisions.	No exception
Coordinate and make decisions on the administration of potassium iodide (where applicable) for the public and institutionalized members of the population.	No exception

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

Intent: The capability to implement precautionary protective action and/or protective action decisions, including evacuation and/or sheltering, for all populations within the plume and ingestion exposure pathway emergency planning zones. The populations include those with access and functional needs, students, and institutionalized individuals. RPM 2019 Pt III Pg. 189

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

Assessment	Extent of Play
Implement protective action decisions,	No exception

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

Objective 2: Exposure Control

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

Intent: The capability to assess and control the radiation exposure and dose received by emergency workers and utilize a decision-making chain to authorize emergency worker exposure limits to be exceeded for specific missions. RPM 2019 Pt III Pg. 196

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

Assessment	Extent of Play
Control emergency workers' exposure and dose, including offsite workers performing duties onsite.	No exception
Maintain record of dose as a result of exposure.	No exception
Authorize exposures and dose in excess of identified limits.	No exception
Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits.	No exception
Determine a correction factor for direct reading dosimeter-based isotopic release mixture.	No exception
Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas.	No exception

Assessment	Extent of Play
Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established protective action guides.	No exception

Capability Target 2.2: Emergency Worker Exposure Control Management

Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs), and identify procedures to monitor their exposure and dose, including following procedures to obtain authorization to receive emergency exposures in excess of the PAGs. RPM 2019 Pt III Pg. 198

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

Assessment	Extent of Play
Maintain an appropriate inventory of direct reading dosimeters that are leak-tested or current in calibration.	No exception
Maintain an appropriate inventory of permanent record dosimeters.	No exception
Retain an adequate supply of radioprotective drugs.	No exception
Adequately distribute appropriate direct reading dosimeters and permanent record dosimeters.	Exception: Distribution of permanent record dosimeters will be simulated.
Adequately distribute radioprotective drugs to emergency workers.	Exception: A prop may be used to simulate distribution of potassium iodide.
Record and report exposures in the field.	No exception
Implement decisions to administer radioprotective drugs.	No exception
Report to individual responsible for managing exposure and dose when limits are reached.	No exception

Objective 3: Alert and Notification

Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel. RPM 2019 Pt III Pg. 200

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

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

Dose Assessment and Central Emergency Control Center

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.

Objective 1: Emergency Operations Management

Capability Target 1.1: Mobilization
Intent: The capability to alert, notify, and mobilize offsite response organizations to staff facilities in support of emergency operations. RPM 2019 Pt III Pg. 185

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

Assessment	Extent of Play
Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner.	Exception: Division of Radiological Health staff will be prepositioned prior to the start of exercise play. Due to public health concerns, the Division of Radiological Health will not be staffing the following position(s): CECC-Liaison
Receive and verify notifications.	No exception
Identify and request additional resources, as needed.	No exception
Determine a facility is operational.	No exception

Capability Target 1.3: Protective Action Recommendations

Intent: The capability to use dose assessment and field data, compare this data to the PAGs, and

choose among a range of protective actions those most appropriate in a given emergency. RPM 2019 Pt III Pg. 187

Assessment	Extent of Play
PLUME: Select and implement pre-planned precautionary protective actions.	No exception
PLUME: Utilize the methodology in plans/procedures to select among a range of protective actions most appropriate in a given emergency. This could also include the use of preplanned precautionary protective actions contained in plans/procedures.	No exception
PLUME: Develop protective action recommendations.	No exception
PLUME: Transmit protective action recommendations in a timely manner.	No exception

Objective 2: Exposure Control

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

Intent: The capability to assess and control the radiation exposure and dose received by emergency workers and utilize a decision-making chain to authorize emergency worker exposure limits to be exceeded for specific missions. RPM 2019 Pt III Pg. 196

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

Assessment	Extent of Play
Control emergency workers' exposure and dose, including offsite workers performing duties onsite.	No exception
Maintain record of dose as a result of exposure.	No exception
Authorize exposures and dose in excess of identified limits.	No exception
Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits.	No exception
Determine a correction factor for direct reading dosimeters -based isotopic release mixture.	No exception
Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas.	No exception
Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established protective action guides.	No exception

Objective 3: Alert and Notification

Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel. RPM 2019 Pt III Pg. 200

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

Assessment	Extent of Play
Utilize communication systems that are fully functional, continuously available, and redundant.	No exception
Maintain periodic test results and corrective actions on a real time basis.	No exception
Access at least one communication system that is independent of the commercial telephone system.	No exception
Manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.	No exception
Identify and address any failures of the systems.	No exception

Assessment	Extent of Play
Transmit, receive, and understand messages (i.e., "content check").	No exception

Objective 4: Detect, Measure, Sample, Analyze, and Assess

Capability Target 4.5: Plume Phase Analysis and Dose Assessment

Intent: The capability to collect data, project doses to members of the public and emergency workers and analyze and communicate the results. RPM 2019 Pt III Pg. 212

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.3, H.13, 1.6, 1.8, 1.10, K.3, and O.1).

Assessment	Extent of Play
Obtain adequate data to make dose projections.	No exception
Use software and/or other methods (e.g., manual calculations) to make dose projections for members of the public (both TED and thyroid dose) based on plant data.	No exception
Compare dose projections to members of the public to Environmental Protection Agency Protective Action Guides.	No exception
Compare dose projections to the public with those of the licensee and discuss differences greater than a factor of ten with the licensee and explain reasons for the difference.	No exception
Make initial protective action recommendations based on recommendations of the licensee, release data, meteorological data, and other pertinent information.	No exception
Promptly communicate protective action recommendations to decision-makers.	No exception
Receive ambient exposure rates from field monitoring teams and compare to model projections.	No exception
Calculate iodine and particulate concentrations from field monitoring team air samples.	No exception
Calculate plume ratios of noble gas, iodines, and particulates, and compare to model projections.	No exception
Adjust protective action recommendations, as necessary, based on analysis of field data.	No exception
Calculate an incident-specific correction factor for emergency workers inside the plume exposure pathway emergency planning zone.	No exception

Radiological Monitoring Control Center and Field Teams

Core Capability: Environmental Response/Health and Safety

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

Objective 1: Emergency Operations Management

Capability Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize OROs to staff facilities in support of emergency operations. RPM 2019 Pt III Pg. 185

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

Assessment	Extent of Play
Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner.	Exception: Division of Radiological Health staff will be prepositioned at the RMCC. Due to public health concerns, the following positions at the RMCC will not be staffed: Assistant Data Assessor
Receive and verify notifications.	No exception
Identify and request additional resources, as needed.	No exception
Determine a facility is operational.	No exception

Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures. RPM 2019 Pt III Pg. 186

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

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

Objective 2: Exposure Control

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

Intent: The capability to assess and control the radiation exposure and dose received by emergency workers and utilize a decision-making chain to authorize emergency worker exposure limits to be exceeded for specific missions. RPM 2019 Pt III Pg. 196

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

Assessment	Extent of Play
Control emergency workers' exposure and dose, including offsite workers performing duties onsite.	No exception
Maintain record of dose as a result of exposure.	No exception
Authorize exposures and dose in excess of identified limits.	No exception
Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits.	No exception
Determine a correction factor for direct reading dosimeter-based isotopic release mixture.	No exception
Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas.	No exception
Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established protective action guides.	No exception

Capability Target 2.2: Emergency Worker Exposure Control Management

Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs), and identify procedures to monitor their exposure and dose, including following procedures to obtain authorization to receive emergency exposures in excess of the PAGs. RPM 2019 Pt III Pg. 198

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

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

Assessment	Extent of Play
Maintain an appropriate inventory of permanent record dosimeters.	Exception: One prop to simulate permanent record dosimetry may be used. Issuance of permanent record dosimetry will be discussed with evaluators.
Retain an adequate supply of radioprotective drugs.	Exception: One prop to simulate potassium iodide may be used. Issuance of potassium iodide will be discussed with evaluators.
Adequately distribute appropriate direct reading dosimeters and permanent record dosimeters.	Exception: One prop to simulate permanent record dosimetry may be used. Issuance of permanent record dosimetry will be discussed with evaluators.
Adequately distribute radioprotective drugs to emergency workers.	Exception: One prop to simulate potassium iodide may be used. Issuance of potassium iodide will be discussed with evaluators.
Record and report exposures in the field.	No exception
Implement decisions to administer radioprotective drugs.	No exception
Report to individual responsible for managing exposure and dose when limits are reached.	No exception

Objective 3: Alert and Notification

Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel. RPM 2019 Pt III Pg. 200

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

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

Objective 4: Detect, Measure, Sample, Analyze, and Assess

Capability Target 4.1: Field Monitoring Teams Management

Intent: The capability to provide overall management of FMTs to direct movements and measurements to characterize the plume and its impacts. RPM 2019 Pt III Pg. 206

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.11, H.13, 1.5, 1.6, 1.9, 1.10, M.7, M.8, and O.1).

Assessment	Extent of Play
Brief field monitoring teams on predicted plume location and direction, plume travel speed, equipment operational checks, background measurement, and exposure control procedures before deployment.	Exception: Field monitoring teams will be prepositioned at the RMCC. Field teams shall be allowed to complete equipment checks prior to the start of the exercise.
Direct the field monitoring teams to monitoring locations, predesignated points or otherwise, at times and locations sufficient to characterize the plume.	Exception: To avoid players, controllers, and evaluators traveling in a single vehicle, field teams will remain at the TEMA East facility. Field teams will act as controllers under the observation of an assigned evaluator.
Obtain peak plume measurements from field monitoring teams.	No exception
Direct field monitoring teams to collect air samples at locations and times sufficient to characterize the plume.	No exception
Keep incident command informed of field monitoring teams activities and location(s) during a hostile action based incident or other instances when an incident command post or other may be in use.	No exception
Coordinate and share information amongst all field monitoring teams (licensee, Federal, state, and local).	No exception
Coordinate sample analysis from field to those responsible for assessing radiological data.	No exception
Coordinate transfer of sample media to locations and organizations responsible for assessing radiological data.	No exception
Assist with development and modification of sampling plans, as appropriate.	No exception

Capability Target 4.2: Plume Phase Measurements and Sampling

Intent: The capability to make and report measurements of ambient radiation. RPM 2019 Pt III Pg. 207

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.9, H.11, H.11.a, H.11.b, H.12, H.13, 1.2, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, and O.1).

Assessment	Extent of Play
Maintain emergency equipment including calibration and operational checks according to manufacturer's specifications or per national standards.	No exception
Maintain inventory for emergency kits.	No exception
Operate and monitor radiation survey instruments to detect changes in radiation exposure rate while moving and in stationary positions.	Exception: To avoid players, controllers, and evaluators traveling in a single vehicle, field teams will remain at the TEMA East facility. Two 2-person field teams will be evaluated and act as controllers under the observation of an assigned evaluator.
Use appropriate contamination control and personal protective equipment.	No exception
Be in location(s) at the appropriate time(s) to detect and characterize the active release (plume).	Exception: To avoid players, controllers, and evaluators traveling in a single vehicle, field teams will remain at the TEMA East facility. Two 2-person field teams will be evaluated and act as controllers under the observation of an assigned evaluator.
Obtain peak plume measurements either directly or from licensee field teams.	No exception
Correctly interpret survey instrument readings to determine submersion in the active plume.	No exception
Collect representative air samples in the active plume on particulate media (e.g., glass or paper filter) and iodine selective media (e.g., silver zeolite cartridge).	No exception
Handle sample media and equipment to avoid sample cross-contamination, contamination of equipment and personnel contamination.	No exception
Determine an appropriate low background location to count sample media.	No exception
Count iodine and particulate media using appropriate and effective instrumentation and counting geometries or have samples analyzed by a supporting laboratory within four hours.	No exception
Report to field monitoring team manager all survey and counting results in format and units suitable for use by the organization's dose assessor.	No exception
Procedures, qualified collection and counting efficiencies, and calculations are capable of detecting airborne radioactive iodine concentrations as low as 10-7 µCijcc.	No exception

Assessment	Extent of Play
Preparation of packaging, sample identification, and chain-of-custody forms ensures integrity of samples throughout transportation and transfer.	No exception

Joint Information System/Center

Core Capability: Public Information and Warning

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

Objective 1: Emergency Operations Management

Capability Target 1.1: Mobilization

Intent: The capability to alert, notify, and mobilize OROs to staff facilities in support of emergency operations. RPM 2019 Pt III Pg. 185

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

Assessment	Extent of Play
Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner.	Exception participants players will be prepositioned in their assigned exercise locations. Players will not begin their assigned exercise roles until alert and notification is received Exception: Due to public health concerns, the Division of Radiological Health will not be staffing the following position(s): DRH Public Information Officer. The Division will be providing a TDEC official that will act as the PIO and will maintain communications with a subject matter expert.
Receive and verify notifications.	No exception
Identify and request additional resources, as needed.	No exception
Determine a facility is operational.	No exception

Capability Target 1.2: Direction and Control

Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures. RPM 2019 Pt III Pg. 186

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

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

Objective 3: Alert and Notification

Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel. RPM 2019 Pt III Pg. 200

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

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

Capability Target 3.2: Alert and Notification of the Public

Intent: The capability to provide instructions to the public. RPM 2019 Pt III Pg. 201

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

Assessment	Extent of Play
ALERT AND NOTIFICATION SYSTEM: Sequentially provide an alert signal followed by an initial instructional message to populated areas.	Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.
ALERT AND NOTIFICATION SYSTEM: Alert and notify the general public.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message.
ALERT AND NOTIFICATION SYSTEM: Identify and address any failures of the system(s) or portion of a system(s).	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message.
ALERT AND NOTIFICATION SYSTEM: Actual testing of the mobile public address system will be conducted at an agreed-upon location.	Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.
EMERGENCY ALERT SYSTEM: Identify the process to activate the Emergency Alert System.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message.
EMERGENCY ALERT SYSTEM: Ensure that updated emergency information is disseminated in a timely manner.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message.

Assessment	Extent of Play
EMERGENCY ALERT SYSTEM: Ensure that current emergency information is repeated at pre-established intervals.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message.
EMERGENCY ALERT SYSTEM/NATIONAL WEATHER SERVICE STATION: Identify the process to activate the Emergency Alert System, to include the process to receive and then broadcast updated information/messages and verification of the message, if applicable.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message. Exception: The outdoor warning system (i.e., sirens) will not be sounded. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for sounding the sirens and a siren failure.
EMERGENCY ALERT SYSTEM/NATIONAL WEATHER SERVICE STATION: Broadcast the message on a 24-hour basis.	Exception: An Emergency Alert System message will be developed but will not be transmitted nor broadcast. The State Emergency Information Director, or designee, will discuss with evaluators in the State EOC the procedures for formulating, approving, releasing, confirming receipt, acknowledging/validating, and broadcasting a message.

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

Intent: The capability to disseminate emergency information and instructions to the public during all phases of an incident. RPM 2019 Pt III Pg. 203

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

Assessment	Extent of Play
PLUME PHASE: Deliver coordinated, prompt, reliable, and actionable information in a timely manner.	No exception
PLUME PHASE: Provide clear, concise, accessible messaging using plain language.	No exception

Assessment	Extent of Play
PLUME PHASE: Messaging addresses appropriate cultural and linguistic considerations.	No exception
PLUME PHASE: Ensure subsequent messaging is consistent with protective actions.	No exception
PLUME PHASE: Update information as the incident progresses, to include validating previously identified protective areas and clearly identifying any new protective action areas, any information that is no longer valid, and any changes to previously provided information (e.g., rerouting of evacuation routes due to impediments, etc.).	No exception
PLUME PHASE: Respond to media and public inquiries.	No exception

School Interviews

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.

Objective 1: Emergency Operations Management

Capability Target 1.4: Protective Action Decisions for the Plume Phase

Intent: The capability to utilize appropriate factors and necessary coordination in the decision-making process used to make protective action decisions for the public. RPM 2019 Pt III Pg. 188

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

Assessment	Extent of Play
Coordinate and make protective action decisions for students at schools.	Exception: Protective action decisions will be discussed via interview with the county school system at the county emergency operations center. A principal, transportation manager, and safety officer from an endangered school will be in attendance.

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

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

functional needs, students, and institutionalized individuals. 2019 RPM, Part III, Page 189

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

Assessment	Extent of Play
Communicate, coordinate, and implement protective actions for schools.	Exception: Protective action implementation will be discussed via interview with the county school system at the county emergency operations center. A principal, transportation manager, and safety officer from an endangered school will be in attendance.

Objective 2: Exposure Control

Capability Target 2.2: Emergency Worker Exposure Control Management

Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs) and identify procedures to monitor their exposure and dose, including following procedures to obtain authorization to receive emergency exposures in excess of the protective action guides. 2019 RPM, Part III, Page 198

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

Assessment	Extent of Play
Maintain an appropriate inventory of direct-reading dosimeters that are leak-tested or current in calibration.	No exception
Maintain an appropriate inventory of permanent record dosimeters.	No exception
Retain an adequate supply of radioprotective drugs.	No exception
Adequately distribute appropriate direct-reading dosimeters and permanent record dosimeters.	Exception: Distribution of permanent record dosimeters will be simulated.
Adequately distribute radioprotective drugs to emergency workers.	Exception: A prop may be used to simulate distribution of potassium iodide.
Record and report exposures in the field.	No exception
Implement decisions to administer radioprotective drugs.	No exception
Report to individual responsible for managing exposure and dose when limits are reached.	No exception

Objective 3: Alert and Notification

Capability Target 3.1: Communications

Intent: The capability to provide and maintain reliable communications with emergency personnel. 2019 RPM, Part III, Page 200

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

Assessment	Extent of Play
Utilize communication systems that are fully functional, continuously available, and redundant.	No exception

Backup Route Alerting and Traffic Control Points

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

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

Objective 3: Alert and Notification

Capability Target 3.2: Alert and Notification of the Public

Intent: The capability to provide instructions to the public. 2019 RPM, Part III, Page 201

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

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

Objective 5: Operate

Capability Target 5.4: Traffic and Access Control

Intent: The capability to select, establish and staff traffic and access control points and removing impediments to the flow of evacuation traffic. 2019 RPM, Part III, Page 222

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

Assessment	Extent of Play
Select, establish, and staff appropriate traffic/access control points, consistent with current conditions and protective action decisions (e.g., evacuating, sheltering and relocation), in a timely manner.	Exception: Selecting, establishing, and staffing traffic/access controls points will be discussed via interviews with local law enforcement personnel. A county road department representative will also attend. The interviews will be conducted at the county emergency operations center.
Provide instructions to traffic/access control staff on actions to take, including when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.	Exception: The provision of instructions to traffic/access control staff will be discussed via interview.
Identify and take appropriate actions concerning impediments that affect the evacuation and evacuation routes.	Exception: Identifying and taking action concerning impediments will be discussed via interview.

Reception and Congregate Care Centers

Core Capability: Mass Care Services

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

Objective 5: Emergency Operations Management

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

Intent: The capability to implement radiological monitoring and decontamination of evacuees, and to identify, register, temporarily shelter, and provide congregate care for evacuees at reception centers. 2019 RPM, Part III, Page 215

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

Assessment	Extent of Play
Set-up operations.	Exception: Due to ongoing operations for vaccine efforts against COVID-19 by Hamilton County Health Department and Hamilton County Emergency Management. Hamilton County Emergency Management has requested state personnel supplement their reception and congregate care center staff. Personnel supplementing Hamilton County will be from the Tennessee Department of Health and Tennessee Emergency Management Agency. Exception: Personal protective equipment will be simulated. One person will demonstrate donning and doffing of personal protective equipment..
Operationally check instruments and equipment.	No exception
Attain and sustain the overall monitoring productivity rate per hour needed to monitor 20 percent of the plume exposure pathway emergency planning zone population, including transients, within a 12-hour period at each facility. The monitoring productivity rate per hour is the number of evacuees that can be monitored, per hour, per location, by the total complement of monitors using an appropriate procedure.	Exception: A total of six persons will be monitored to determine the monitoring productivity rate per hour.
Monitor evacuees, service animals, pets, vehicles, and possessions.	Exception: The monitoring of service animals and pets will be discussed via interview.
Utilize trigger/action levels for determining the need for decontamination.	No exception
Decontaminate evacuees, and personal belongings, while limiting the spread of contamination.	Exception: The decontamination of evacuees will be discussed via interview – e.g., no water will be used.
Follow-up with any evacuee(s) who cannot be appropriately decontaminated for assessment; ensure the capability to provide evacuee-referrals.	No exception
Monitor and decontaminate vehicles.	Exception: One vehicle will be monitored for contamination; the vehicle will not be contaminated. The process used to decontaminate vehicles will be discussed via interview.
Provide adequate, separate space for both contaminated and non-contaminated vehicles.	No exception
Monitor emergency worker personnel and their equipment and vehicles for contamination.	No exception

Assessment	Extent of Play
Decontaminate evacuee vehicles based on trigger/action levels.	Exception: One vehicle will be monitored for contamination; the vehicle will not be contaminated. The process used to decontaminate vehicles will be discussed via interview.
Coordinate for incoming evacuees who have been monitored and, if necessary, decontaminated.	No exception
Establish shelter operations.	Exception: The local chapter of the American Red Cross will set-up one cot for demonstration.
Congregate care centers and operations in host/support jurisdictions are sufficient to support the expected number of evacuees.	No exception
Register evacuees.	No exception
Ensure the registration area is clean and controlled.	No exception