



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

FEMA

January 14, 2013

Victor M. McCree
Regional Administrator - RII
State and Local Government Affairs
US Nuclear Regulatory Commission
One Marquis Tower
245 Peachtree Center Avenue, Suite 1200
Atlanta, Georgia 30303

Dear Mr. McCree:

Enclosed is the final report for the October 3, 2012, Sequoyah Nuclear Power Plant exercise. The report addresses the evaluation of the offsite response plans and preparedness for the State of Tennessee and the affected local governments. The 10-mile Emergency Planning Zone includes Hamilton and Bradley Counties. The Technological Hazards Branch, Atlanta Regional Office staff prepared the final exercise report. Copies of the report will be forwarded to the State of Tennessee and Nuclear Regulatory Commission Headquarters by my staff.

The State of Tennessee, Hamilton and Bradley Counties activated their emergency response staffs in a timely manner. The emergency response organizations which staffed the facilities included elected officials, State and county employees and volunteers. Out-of-sequence activities were conducted prior to the week of the exercise. These evaluated activities included protective actions for schools; reception and temporary care; medical service drills; and emergency worker and vehicle monitoring and decontamination.

All agreed upon exercise evaluation area criteria were demonstrated. During this exercise, FEMA did not identify any Deficiencies; however, one Area Requiring Corrective Action (ARCA) was identified. The ARCA involved a lack of radiological controls at Memorial Hospital during their Medical Service Drill. This ARCA was re-demonstrated and corrected on the spot.

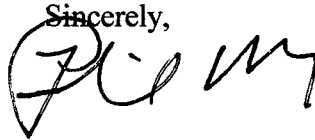
Based on the results of the October 3, 2012, exercise and the Atlanta Regional Office's review of Tennessee's 2011 Annual Letter of Certification, the offsite radiological emergency response plans and preparedness for the State of Tennessee and the affected local jurisdictions, site-specific to the Sequoyah Nuclear Power Plant, can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety

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of the public in the event of a radiological emergency at the site. The Title 44 CFR Part 350 approval of the offsite radiological emergency response plans and preparedness for the State of Tennessee offsite radiological emergency response plans and preparedness site-specific to the Sequoyah Nuclear Power Plant, granted on August 7, 1980, will remain in effect.

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

Sincerely,

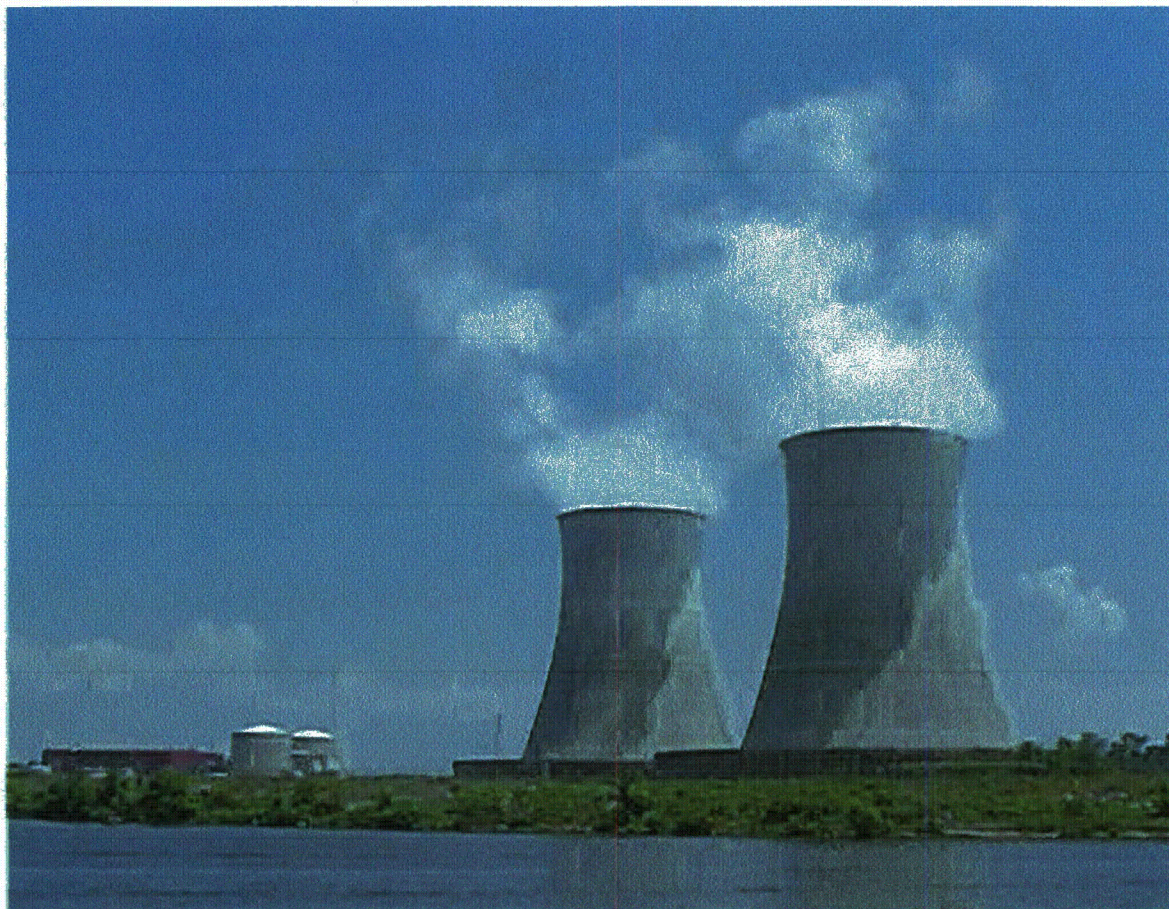
A handwritten signature in black ink, appearing to be 'P. May', written over a circular stamp or seal.

Major P. May
Regional Administrator

Enclosure

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Sequoyah Nuclear Power Plant

After Action Report/ Improvement Plan

Exercise Date - October 03, 2012

Radiological Emergency Preparedness (REP) Program



FEMA

Published January 14, 2013



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EXECUTIVE SUMMARY

On October 3, 2012, the Department of Homeland Security/Federal Emergency Management Agency (FEMA) Region IV Radiological Emergency Preparedness (REP) Program staff evaluated a full participation plume exposure pathway exercise in the Emergency Planning Zone for the Sequoyah Nuclear Power Plant (SQN). The evaluation of out of sequence (OOS) activities conducted throughout September, 2012 are included in this report. The OOS activities included: protective actions for schools; reception and congregate care centers; emergency worker and equipment monitoring and decontamination; Medical Service Drills. SQN is operated by Tennessee Valley Authority (TVA) and is located in Hamilton County, Tennessee near the City of Soddy Daisy. The 10-mile EPZ is divided into sectors and quadrants and affects both risk Counties of Bradley and Hamilton.

FEMA's overall objective of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency at SQN. The purpose of this report is to analyze exercise results based on the assessment of target capabilities. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures as identified in the REP Program Manual. The evaluation team conducted this exercise using Homeland Security Exercise and Evaluation Program (HSEEP) methodology. The previous Federal evaluated exercise was conducted on November 17, 2010. The qualifying emergency preparedness exercise was conducted in June 1980.

Officials and representatives from the State of Tennessee, Bradley and Hamilton Counties, the Nuclear Regulatory Commission (NRC), FEMA, and TVA, as well as numerous volunteers participated in this exercise. The cooperation and teamwork of the participants was evident throughout all phases of the exercise. FEMA wishes to acknowledge the efforts and hard work of the many individuals who participated in the success of this exercise. Their training and knowledge of responsibilities is evident. FEMA would also like to acknowledge the enthusiasm and contributions of the exercise planning team during the design of the exercise. They exhibited a dedication to preparedness and an eagerness to improve emergency management and response at all levels.

During this exercise, FEMA did not identify any Deficiencies; however, one Area Requiring Corrective Action (ARCA) was identified. The ARCA involved a lack of radiological controls

at Memorial Hospital. This ARCA was re-demonstrated and corrected on the spot. The training on radiological controls provided to emergency workers should be modified and enhanced to include proper use of radiological monitoring equipment. The risk counties demonstrated a real time alert and mobilization of staff with great success. Both counties commented that they are better prepared as a result of the mobilization and that it added realism to the exercise. Although allowed in the extent of play, the amount of simulation used by the field monitoring teams diminished the availability of a productive training opportunity. Overall, State and local organizations demonstrated knowledge of their emergency response plans and procedures and successfully implemented them.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Sequoyah Nuclear Power Plant

Type of Exercise

Plume

Exercise Date

October 03, 2012

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Sequoyah Nuclear Power Plant exercise:

State Jurisdictions

- Military Department, Tennessee Emergency Management Agency
- Tennessee Department of Environment and Conservation
- Tennessee Department of Health
- Tennessee Department of Agriculture
- Tennessee Department of Safety
- Tennessee Department of Human Services
- Tennessee Department of Transportation
- Tennessee Wildlife Resource Agency
- Tennessee Department of Tourism Development

Risk Jurisdictions

- Hamilton County Office of Emergency Services
- Hamilton County Sherriff's Office
- Hamilton County Health Department
- Hamilton County Highway Department
- Hamilton County Emergency Medical Service
- Hamilton County Property Assessor's Office

Hamilton County Department of Education
Hamilton County 911
Hamilton County Geographic Information System
Hamilton County Auxiliary Communications Service
Chattanooga Police Department
Chattanooga Fire Department
Chattanooga/Hamilton County Rescue Squad
Tri-Com Volunteer Fire Department
Bradley County Mayor
Cleveland Mayor
Cleveland City Manager
Cleveland/Bradley County Emergency Management Agency
Bradley County Fire and Rescue Service
Bradley County Sheriff's Office
Bradley County Department of Education
Bradley County Road Department
Bradley County 911
Bradley County Health Department
Bradley County Emergency Medical Services
Cleveland Police Department
Cleveland Fire Department
Cleveland Public Works
Cleveland Utilities Department
Cleveland/Bradley County Auxiliary Communications Service
McMinn County Emergency Management Agency
Rhea County Emergency Management Agency
Support Jurisdictions
Salvation Army
American Red Cross, Chattanooga Chapter
American Red Cross, Bradley County Chapter
Voluntary Organizations Active in Disaster (VOAD)
Volunteer State Rescue Service
Federal Jurisdictions
Tennessee Valley Authority

Nuclear Regulatory Commission
Federal Emergency Management Agency

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) administers the Radiological Emergency Preparedness (REP) Program pursuant to the regulations found in Title 44 Code of Federal Regulation (CFR) parts 350, 351 and 352. 44 CFR 350 codifies 16 planning standards that form the basis for radiological emergency response planning for licensee, State, tribal and local governments impacted by the Emergency Planning Zones (EPZ) established for each nuclear power plant site in the United States. 44 CFR 350 sets forth the mechanisms for the formal review and approval of State, Tribal and local government Radiological Emergency Response Plans (RERPs) and procedures by DHS/FEMA. One of the REP program cornerstones established by these regulations is the biennial exercise of offsite response capabilities. During these exercises State, Tribal and local governments demonstrate their abilities to implement their plans and procedures to protect the health and safety of the public in the event of a radiological emergency at the nuclear plant.

The 2012 Sequoyah Nuclear Power Plant (SQN) REP exercise was designed utilizing the Homeland Security Exercise and Evaluation Program (HSEEP). HSEEP is a capabilities and performance-based exercise program which provides a standardized policy, methodology, and terminology for exercises. The use of HSEEP is intended to ensure that the REP program conforms to established best practices and helps provide unity and consistency of effort for exercises at all levels of government. Prior to the exercise, the design team conducted planning meetings on a regular basis which focused on identifying objectives, designing the scenario, creating documentation, coordinating logistics, planning exercise conduct, and selecting an evaluation and improvement methodology.

The results of this exercise together with the review of the RERPs and procedures and verification of the periodic requirements set forth in NUREG-0654/FEMA-REP-1 through the Annual Letter of Certification and staff assistance visits enable FEMA to provide a statement with the transmission of this final AAR to the NRC that State, Tribal and local plans and preparedness are: (1) adequate to protect the health and safety of the public living in the vicinity of the nuclear power plant by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency; and (2) capable of being implemented.

The State of Tennessee formally submitted the Multi-Jurisdictional Radiological Emergency Response Plan for the SQN to FEMA Region IV on June 20, 1980. Formal approval of this plan was granted by FEMA on August 7, 1980 in accordance with 44 CFR 350. Since that time, the plan has been updated and reviewed annually.

A REP exercise was evaluated on October 3, 2012, and included evaluations of the following out of sequence activities:

June 28, 2012

- Emergency Worker and Equipment Monitoring and Decontamination, conducted at Bradley County High School in Bradley County

September 5, 2012

- Medical Service Drill (MS-1), conducted at Memorial Hospital in Hamilton County

September 6, 2012

- Reception and Congregate Care Center, conducted at Rhea County High School in Rhea County

September 12, 2012

- Medical Service Drill (MS-1), conducted at Parkridge Medical Center in Hamilton County

September 21, 2012

- Emergency Worker and Equipment Monitoring and Decontamination, conducted at Ooltewah Middle School in Hamilton County

September 26, 2012

- Reception and Congregate Care Center, conducted at East Ridge High School in Hamilton County
- Reception and Congregate Care Center, conducted at Howard School of Academics in Hamilton County

September 27, 2012

- Protective Actions for Schools, conducted by interview at the following schools in Hamilton County: Central High School, Hamilton County High School, Snow Hill Elementary School, Wallace A. Smith Elementary School, Big Ridge Elementary School, and Falling Water Elementary School.

2.2 Exercise Objectives, Capabilities and Activities

The objectives developed to meet the Radiological Emergency Preparedness Program (REPP) requirements and based on the negotiated Extent of Play Agreement are as follows (these objectives encompass the REP Program evaluation area criteria):

Objective 1: Demonstrate the ability to provide Emergency Operations Center management including Direction and Control through the Counties and State Emergency Operations Centers Multi-agency Coordination Center System (MACCS).

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

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

Objective 4: Demonstrate the ability to activate the Prompt Alert and Notification System (PNS) utilizing the PNS/Emergency Alert System (EAS) through exercise play.

Objective 5: Demonstrate the effectiveness of plans, policies and procedures in the Joint Information Center for joint (public and private sectors) emergency information communications.

Objective 6: Demonstrate the ability to conduct independent dose assessment, management of field teams, and mobile or fixed laboratory analysis in response to a radiological release.

Capabilities-based planning allows for exercise planning teams to develop exercise objectives and observe exercise outcomes through a framework of specific action items that are derived from the HSEEP Target Capabilities List (TCL). The REP Assessment Areas, Sub-elements, and Demonstration Criteria have been aligned with HSEEP target capabilities, activities, and tasks. FEMA Region IV has identified a set of Target Capabilities correlating to the REP Demonstration Criteria so that regional REP exercise evaluations using HSEEP exercise documents may occur. These capabilities are listed below with the applicable criterion and activities identified in Appendix D: SQN Extent of Play Agreement.

1. **Emergency Operations Center (EOC) Management:** Emergency Operations Center (EOC) management is the capability to provide multi-agency coordination (MAC) for incident management by activating and operating an EOC for a pre-planned or no-notice event. EOC management includes: EOC activation, notification, staffing, and deactivation; management, direction, control, and coordination of response and recovery activities; coordination of efforts among neighboring governments at each level and among local, regional, State, and Federal EOCs; coordination of public information and warning; and maintenance of the information and communication necessary for coordinating response and recovery activities.

2. **Emergency Public Information and Warning:** Develop, coordinate, and disseminate accurate alerts and emergency information to the media and the public prior to an impending emergency and activate warning systems to notify those most at-risk in the event of an emergency. By refining its ability to disseminate accurate, consistent, timely, and easy-to-understand information about emergency response and recovery processes, a jurisdiction can contribute to the well-being of the community during and after an emergency.

3. **Citizen Evacuation and Shelter in Place:** Citizen Evacuation and shelter-in-place is the capability to prepare for, ensure communication of, and immediately execute the safe and effective sheltering-in-place of an at-risk population (and companion animals), and/or the organized and managed evacuation of the at-risk population (and companion animals) to areas of safe refuge in response to a potentially or actually dangerous environment. In addition, this capability involves the safe reentry of the population where feasible.

4. **Public Safety and Security Response:** Public Safety and Security Response is the capability to reduce the impact and consequences of an incident or major event by securing the affected area, including crime/incident scene preservation issues as appropriate, safely diverting the public from hazards, providing security support to other response operations and properties, and sustaining operations from response through recovery. Public Safety and Security Response requires coordination among officials from law enforcement (LE), fire, and emergency medical services (EMS).

5. **Hazardous Materials Response and Decontamination:** HAZMAT Response and Decontamination is the capability to assess and manage the consequences either of a hazardous materials release, accidental or as part of a terrorist attack. It includes testing and identifying all

likely hazardous substances onsite; ensuring that responders have protective clothing and equipment; conducting rescue operations to remove affected victims from the hazardous environment; conducting geographical survey searches of suspected sources or contamination spreads and establishing isolation perimeters; mitigating the effects of hazardous materials, decontaminating on-site victims, responders, and equipment; coordinating off-site decontamination with relevant agencies, and notifying environmental, health, and law enforcement agencies having jurisdiction for the incident to begin implementation of their standard evidence collection and investigation procedures.

6. Mass Care: Mass Care is the capability to provide immediate shelter, feeding centers, basic first aid, bulk distribution of needed items, and related services to persons affected by a large-scale incident, including access and functional needs populations. Access and functional needs populations include individuals with physical or mental disabilities who require medical attention or personal care beyond basic first aid. Other access and functional needs populations include non-English speaking populations that may need to have information presented in other languages. The mass care capability also provides for pet care/handling through local government and appropriate animal-related organizations. Mass care is usually performed by nongovernmental organizations (NGOs), such as the American Red Cross, or by local government-sponsored volunteer efforts, such as Citizen Corps. Access and functional needs populations are generally the responsibility of local government, with medical needs addressed by the medical community and/or its alternate care facilities. State and Federal entities also play a role in public and environmental health by ensuring safe conditions, safe food, potable water, sanitation, clean air, etc.

Additionally, each objective is linked to one or more capabilities. Based upon the identified exercise objectives, the evaluated capabilities were:

Objective 1:

Capability - EOC Management

Objective 2:

Capability - EOC Management

Capability - Emergency Public Information and Warning

Objective 3:

Capability - EOC Management
Capability - Emergency Public Safety and Security Response
Capability - Citizen Evacuation and Shelter-in-Place
Capability - Hazardous Materials Response and Decontamination
Capability - Mass Care (Sheltering, Feeding, Related Services)

Objective 4:

Capability - Emergency Public Information and Warning

Objective 5:

Capability - Emergency Public Information and Warning

Objective 6:

Capability - Hazardous Materials Response and Decontamination

2.3 Scenario Summary

The timeline of conditions that drove the Emergency Classification Levels (ECLs) and the simulated radiological release are as follows. All events relate to SQN Unit 1. The threat was plant conditions, with a radiological release pathway to the environment. The ECL times indicate the time when conditions were present for their declaration. As such, actual declaration time may differ.

Initial meteorological conditions from the lower tower at 0800 indicate:

- the atmospheric stability class is D
- the wind speed is 1.6 mph and
- the wind direction is from 12 degrees.

Meteorological parameters changed prior to the start of the release at 0931 (wind speed of 1.4 mph and wind direction from 315 degrees). A wind shift occurred at 1130 (wind speed of 1.6 mph and wind direction from 248 degrees).

0800 - Exercise begins.

0806 - A helicopter that was to inspect transmission lines crashes near the Emergency Raw Cooling Water (ERCW) building. As a result, an Unusual Event ECL is declared based on Emergency Action Level (EAL) 5.3 (Aircraft crash or projectile impact (strikes) within the Exclusion Area Boundary).

0808 - Pressurizer safety valve fails open, and Reactor Coolant System (RCS) pressure decreases requiring a reactor trip and safety injection.

0820 - An Alert ECL is declared based on EAL 1.2.2P (Non Isolable RCS leak exceeding the capacity of one charging pump), or EAL 1.2.2L (RCS leak results in loss of sub cooling).

0828 - Containment pressure increases and the Containment Spray pump fails.

0909 - A Site Area Emergency ECL is declared based on EAL 1.2.2L (RCS leak results in loss of sub cooling) and EAL 1.3.2P (Pressure >2.8 PSIG with less than one full train of Containment Spray).

0930 - Containment is bypassed due to a failed purge damper and ducting.

0931 - Filtered radiological release begins (very low activity).

1016 - Unfiltered radiological release begins (increased activity).

1030 - A cold leg Loss of Coolant Accident (LOCA) occurs, resulting in a General Emergency ECL based on EAL 1.1.4P (Valid Reactor Vessel Level Indicator System level <42%) and EAL 1.2.2L (RCS leak results in loss of sub cooling) and EAL 1.3.2L (Rapid unexplained pressure decrease) or EAL 1.3.3L (Containment Isolation, when required is incomplete and a release path to the environment exists).

1130 - A wind shift occurs, with winds from 248o, requiring an evaluation, but will not require an update to the PAR.

1330 - Exercise terminates. The radiological release continues through EndEx, and offsite field monitoring team (FMT) data is available through 1400.

The maximum whole body dose rates resulting from the radiological release are:

- 87 mR/hr at 1 mile (at 1100)
- 29 mR/hr at 2 miles (at 1100)
- 3 mR/hr at 5 miles (at 1130) and
- 3 mR/hr at 10 miles (at 11215), all southeast of SQN

The Total Effective Dose Equivalent (TEDE) exceeds the 1 Rem EPA PAG out to 0.3 miles (1.2 Rem), and the Thyroid Committed Dose Equivalent (CDE) exceeds the 5 Rem EPA PAG out to 0.2 miles (8.1 Rem), i.e. the EPA PAGs were exceeded only within the owner controlled area.

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 3, 2012 full participation plume phase exercise and OOS activities. Exercise criteria are listed by number and the demonstration status of those criteria are indicated by the use of the following terms:

- Met (No Deficiency or ARCA(s) assessed and no unresolved ARCA(s) from prior exercise)
- ARCA(s) assessed or unresolved ARCA(s) from previous exercises
- Deficiency assessed
- Plan Issues
- Not Demonstrated

3.2 Summary Results of Exercise Evaluation

See section 3.3 Criteria Evaluation Summaries for the associated Target Capability Summaries for each jurisdiction. Table 3.1 provides a summary of exercise evaluation results.

Table 3.1 - Summary of Exercise Evaluation

DATE: 2012-10-03 SITE: Sequoyah Nuclear Power Plant, TN M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		TN	TN JIC	CECC	Bradley County	Hamilton County	Rhea Co.
Emergency Operations Management							
Alert and Mobilization	1a1	M	M		M	M	
Facilities	1b1	M					
Direction and Control	1c1	M			M	M	
Communications Equipment	1d1	M	M		M	M	
Equipment and Supplies to Support Operations	1e1	M	M		M	M	M
Protective Action Decision Making							
Emergency Worker Exposure Control	2a1	M			M	M	
Dose Assessment & PARs & PADs for the Emergency Event	2b1	M		M			
Dose Assessment & PARs & PADs for the Emergency Event	2b2	M			M	M	
PADs for the Protection of persons with disabilities and access/functional needs	2c1				M	M	
Radiological Assessment and Decision-making for the Ingestion Exposure Pathway	2d1						
Radiological Assessment & Decision-making Concerning Post-Plume Phase Relocation, Reentry, and Return	2e1						
Protective Action Implementation							
Implementation of Emergency Worker Exposure Control	3a1	M			M	M	M
Implementation of KI Decision for Institutionalized Individuals and the Public	3b1	M			M	M	M
Implementation of Protective Actions for persons with disabilities and access/functional needs	3c1				M	M	
Implementation of Protective Actions for persons with disabilities and access/functional needs	3c2				M	M	
Implementation of Traffic and Access Control	3d1	M			M	M	
Implementation of Traffic and Access Control	3d2	M			M	M	
Implementation of Ingestion Pathway Decisions	3e1						
Implementation of Ingestion Pathway Decisions	3e2						
Implementation of Post-Plume Phase Relocation, Reentry, and Return Decisions	3f1						
Field Measurement and Analysis							
RESERVED	4a1						
Plume Phase Field Measurement and Analyses	4a2	M					
Plume Phase Field Measurement and Analyses	4a3	M					
Post Plume Phase Field Measurements and Sampling	4b1						
Laboratory Operations	4c1						
Emergency Notification and Public Info							
Activation of the Prompt Alert and Notification System	5a1	M			M	M	
RESERVED	5a2						
Activation of the Prompt Alert and Notification System	5a3	M			M	M	
Activation of the Prompt Alert and Notification System	5a4						
Emergency Information and Instructions for the Public and the Media	5b1	M	M		M	M	
Support Operations/Facilities							
Monitoring, Decontamination, and Registration of Evacuees	6a1					M	M
Monitoring and Decontamination of Emergency Workers and their Equipment and Vehicles	6b1				M	M	
Temporary Care of Evacuees	6c1					M	M
Transportation and Treatment of Contaminated Injured Individuals	6d1					M	

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3.3 Criteria Evaluation Summaries

3.3.1 Tennessee Jurisdictions

3.3.1.1 State of Tennessee

Emergency Operations Center Management Capability Summary:

This capability was successfully demonstrated by the Tennessee Emergency Management Agency (TEMA) at the State Emergency Operations Center (SEOC) and the Tennessee Field Coordination Center (FCC). Support for these facilities came from the Tennessee Departments of Health, Agriculture, Safety, Transportation, Human Services, and Environment and Conservation.

The Tennessee State Emergency Operations Center (SEOC) which is co-located with the State Warning Point and the Mission Control Center (MCC), successfully demonstrated the ability to notify and mobilize key staff to the SEOC during an event at the Sequoyah Nuclear Power Plant (SQN). The SEOC was pre-staged in accordance with the extent of play agreement (EOPA). Upon simulated activation of the SEOC through the Dialogic automated call-out system, the staff simulated mobilization. The communications function was seamless. There were no incidents which prevented the primary communications system from functioning properly and redundant systems were available which would have allowed continued operations had there been a failure in communications. There was sufficient equipment and resources to sustain operations at the SEOC throughout the exercise. The Tennessee Highway Patrol successfully demonstrated support of traffic control points by providing adequate man power and resources to supplement the mission. All staff members are knowledgeable and proficient as subject matter experts in their areas and were able to function in a responsive manner to the incident at the plant. Staff members successfully demonstrated coordination and support of the Direction and Control Officer (DACO), the Operations Section, and the Emergency Support Coordinators to ensure that the counties within the 10-mile Emergency Planning Zone (EPZ) of SQN had adequate resources and support in response to an event at the plant. The DACO and Assistant DACO provided direction and control for the response effort, encouraging key staff to follow their checklists for each ECL change and anticipate necessary actions to be taken should the plant or meteorological conditions change. TEMA successfully coordinated necessary response actions with the utility and risk counties of Bradley and Hamilton. Periodic conference calls and status briefings ensured

that all involved entities had current situational awareness. The DACO and risk counties concurred on appropriate protective action decisions to protect the health and safety of the public and emergency workers.

The FCC successfully demonstrated the ability to activate and notify key staff during an event at the SQN. The TEMA FCC was staffed and operational in a timely manner once directed to activate by the SEOC. The FCC and Radiological Monitoring and Coordination Center (RMCC) are located in a new facility located at the Air National Guard Building in Chattanooga, Tennessee. The facility was sufficient to support emergency response operations. There was ample space, light, equipment, safety equipment, and back-up power to continue successful operations for an extend period of time. The TEMA FCC communications equipment was operative and fully functional; no communication failures were observed. The TEMA FCC Director (FCCD) swiftly took charge of emergency functions and coordinated discussions. The FCCD provided staff briefings hourly unless critical information arrived earlier. The FCCD successfully executed direction and control, provided great jurisdictional coordination and made timely decisions in support of the resource allocation throughout the exercise. The TEMA FCCD successfully demonstrated the capability to provide detailed coordination and policy support to the SEOC DACO by coordinating the "meet me line" calls and tracking the sequence of exercise actions ensuring task completion for the SEOC.

Emergency Public Information & Warning Capability Summary:

The Public Information staff of TEMA successfully demonstrated the capability to manage and issue initial and subsequent emergency public information and warnings, and to provide for public inquiry/rumor control.

The State Emergency Information Director (SEID) and support Public Information Officers (PIO) in the SEOC exhibited expert knowledge of plans and procedures. Their roles and processes were well-defined and coordinated. The staff was proactive and advised the DACO of potential public information options in anticipation of and in response to escalating conditions. Three news releases and seven EAS messages were coordinated between the State, Joint Information Center (JIC), local EMAs and the Utility for dissemination to affected jurisdictions and the media without undue delay. Checklists were used to ensure procedural compliance in performing duties and aided in the ability to effectively coordinate and develop news releases and Emergency Alert System (EAS) messages with accuracy and timeliness. Pre-scripted

messages were effectively used for news releases and EAS messages. All information was reviewed, approved and coordinated by the proper officials, prior to dissemination.

The Operations Section effectively demonstrated procedures for activating the prompt alert and notification siren system. Procedures for coordinated dissemination of EAS messages to the Local Primary 1 (LP-1), WUSY 107.7 in Chattanooga and the off hours location in Ohio were successfully demonstrated. The monthly full activation test of the siren system was conducted on exercise day, but out of sequence to the exercise. No siren failures were observed. All other siren soundings were simulated, and included an 'inject' for a single siren failure to drive back-up route alerting in Bradley County.

Public inquiry, rumor control and media monitoring were demonstrated under the umbrella of responsibilities of the SEID in the SEOC. Each was performed by a dedicated PIO to identify and ensure that any false rumors or trends were captured and forwarded to the SEID and JIC for resolution or to be addressed in subsequent news media briefings. There were three rumors identified during the exercise, however no trends were observed.

HAZMAT Response and Decontamination Capability Summary:

This capability was demonstrated in three separate locations in Tennessee including the RMCC, field monitoring teams (FMT), and dose assessment. RMCC personnel demonstrated the capability to assess and manage the consequences of a radiological release. This included ensuring that responders had protective clothing and proper equipment; conducting radiological surveys of suspected sources of contamination and establishing the plume perimeters.

In accordance with the EOPA, personnel were pre-positioned in the RMCC. The RMCC was co-located with the FCC in a new facility at the Air National Guard building in Chattanooga, TN. The facility is sufficient to support emergency response operations. There is ample space, light, equipment, safety equipment, and back-up power to continue successful operations for an extended period of time. The Radiation Monitoring Coordinator (RMC) explained the normal callout procedure. The RMCC was located in a conference room that had ample space for all members to operate and conduct business. Communication equipment included a radio handset, commercial telephone lines and cellular telephones. All communication systems performed without any problems throughout the exercise. Video displays, an overhead projector and WebEOC were available to assist the staff.

In addition to the RMC, there was a Tennessee Department of Environment and Conservation (TDEC), Division of Radiological Health (DRH) Coordinator (DRHC), Assistant DRHC, Sample Coordinator, two Administrative Assistants, and five FMTs with Captains. One FMT was staffed by members of the 45th CST National Guard Unit.

The Assistant DRHC ensured the FMTs had their equipment and dosimetry and performed their radio checks prior to deployment. While deployed, the FMTs were required to report their personal dosimetry readings to DRH each time they called in monitoring results. This ensured that the RMCC tracked FMTs exposure and kept them from exceeding any limits.

The RMC, DRHC and Assistant DRHC constantly reviewed meteorological data, meteorological projections and field results to direct FMTs. The RMC and DRH were able to direct the FMTs to successfully identify the plume edges several times. Their job was complicated by the numerous wind shifts that occurred during the exercise. These changes were compounded by the delays in obtaining new meteorological data in a timely manner. Several times the RMC and DRH realized that a wind shift had occurred by analyzing the FMT monitoring results and revising the FMTs locations.

The Sample Coordinator and Assistant Sample Coordinator properly setup a sample collection point. They had the area laid out in accordance with their plan and had the proper equipment available for conducting sample surveys. Both individuals were aware of the dose rate and contamination limits for samples and the disposition of samples if they exceeded any limit. However, they were not as confident in preparing the survey instruments for use. There was not procedures available that detailed the steps necessary to put the instruments in service. This could lead to using instruments that were not operating correctly. A general guide to perform operational and source checks prior to placing them in service could be useful.

This capability was also successfully demonstrated by the TDEC DRH Dose Assessment Group. The Dose Assessment Group was prepositioned at the SEOC in accordance with the EOPA. After initial notification of the simulated accident the Dose Assessment Group mobilized and activated in an efficient manner. Appropriate communications systems, equipment, maps, displays, and other supplies to support emergency operations were available. The communications systems allowed for effective transfer of information to and from the Dose Assessment Group. The use of multiple versions of dose assessment calculation methodologies

created challenges for the DRH Dose Assessment Group. These challenges were resolved by using the same version. The DRH Radiation Control Officer (RCO) demonstrated effective direction and control over dose assessment and protective action recommendation (PAR) development for the general public, and used a decision-making process, considering relevant factors and appropriate coordination to ensure that an exposure control system, including the use of potassium iodide (KI), was in place for emergency workers.

FMTs were pre-positioned at the new RMCC. Communication equipment worked well between the FMTs and the RMCC. High and low range dosimetry was issued and worn correctly. Instruments were checked and properly used to obtain radiation dose rates. Equipment and maps were adequate for location of the plume. In accordance with SOPs KI was taken prior to leaving the Armory and FMT members understood its effects. Due to the wording of the EOPA, there was a failure to demonstrate donning and removing protective clothing by each of the four evaluated field teams.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2, 3.a.1, 3.b.1, 3.d.1, 3.d.2, 4.a.2, 4.a.3, 5.a.1, 5.a.3, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.2 TN Joint Information Center

Emergency Public Information & Warning Capability Summary:

Representatives from the State of Tennessee, Hamilton County and Bradley County successfully demonstrated the Emergency Public Information and Warning capability by providing emergency information and instructions to the media and public. The State and local representatives performed their roles in accordance with their published plans and procedures.

The Joint Information Center (JIC) is located in the Tennessee Valley Authority (TVA) Missionary Ridge Building, 1101 Market Street, Chattanooga, Tennessee. The JIC was activated

in accordance with published plans and procedures in support of SQN. For this exercise the JIC was activated at 0856 with the Alert Emergency Classification Level (ECL). Its activation is a collaborative joint decision between the TVA JIC Director (TVA-JICD) and the State JIC Director (S-JICD) with concurrence from the State Emergency Information Director (SEID) located in the State Emergency Operations Center (SEOC).

The facility has a robust communications capability and sufficient equipment and supplies to support emergency operations. This includes a backup communications capability that is independent of the voice over internet protocol network. The primary and alternate communications systems were tested and verified as operational with appropriate locations. The Bradley County PIO encountered connectivity issues when trying to connect to his County's WebEOC. This issue did not adversely affect the outcome of the exercise.

The JIC operated within a Joint Information System (JIS) structure. The JIC Co-directors and PIO representatives performed their roles in accordance with their published procedures and plans. During the two Media Briefings, the spokespersons answered all questions asked of them and were able to discuss what actions have been taken by their organizations. The role of the mock media was played by the utility and supplemented by a local college journalism and crisis management class.

During the course of the exercise the JIC prepared ten messages, the SEOC prepared one emergency information release and seven emergency action messages that were disseminated by EAS. The individual press releases lacked clarity and did not contain the specific instructions for the public and media in reference to protective measures as called for in NUREG-0654 FEMA REP-1, Supplement 3. While no one press release contained all the required elements, detailed verbal information in the media briefs supplemented and made up for this shortcoming. There was no detrimental effect to the public as a result of this omission.

The Citizens Information and Media Monitoring Center of the JIC effectively demonstrated the ability to provide accurate up to date information to calls of concerned citizens. They immediately identified trends and rumors developing in the community through the calls received. Those concerns were reported to the JIC leadership so they could be effectively dispelled and clarified during the media briefings.

In summary, the status of DHS/FEMA criteria for this location is as follows:

-
- a. MET: 1.a.1, 1.d.1, 1.e.1, 5.b.1.
 - b. AREAS REQUIRING CORRECTIVE ACTION: None
 - c. DEFICIENCY: None
 - d. PLAN ISSUES: None
 - e. NOT DEMONSTRATED: None
 - f. PRIOR ISSUES - RESOLVED: None
 - g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.3 Central Emergency Control Center

Emergency Operations Center Management Capability Summary:

TEMA and Division of Radiological Health (DRH) liaisons staffed the TVA Central Emergency Control Center (CECC). They were activated after the State Warning Point received emergency communications from the utility. They had sufficient depth in communications capability to ensure that they were able to communicate with the SEOC, FCC, RMCC and counties to give and obtain information concerning the situation at the Sequoyah Nuclear Power Plant and the surrounding area. The TEMA and DRH liaisons were well versed in their roles and responsibilities and carried them out effectively. The DRH representative continues to develop his role and served as the interface between TVA and the State to communicate technical information between the two organizations. He had complete access to the technical operations TVA was conducting concerning field monitoring team data and dose assessment data. The TEMA liaison worked closely with TVA's State Communicator to enhance TVA's situational awareness of offsite status, actions, and activities concerning the EPZ. He also provided the State information concerning the situation at the plant and changes in its status as they were discussed in the CECC. The liaisons effectively assisted TEMA, DRH and TVA in carrying out their responsibilities to protect the health and safety of the public.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 2.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None

g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.4 Bradley County

Emergency Operations Center Management Capability Summary:

Cleveland/Bradley County Emergency Management Agency staff and county agencies successfully demonstrated the capability to provide multi-agency coordination for incident management by activating and operating an emergency operations center (EOC). The participation of the Bradley County Mayor and City of Cleveland Mayor during the exercise demonstrated a firm dedication to the safety and welfare of the county residents.

The Emergency Management Agency Director (EMAD) and his staff were highly proficient in the performance of their duties and were proactive in their planning and implementation of County emergency response actions. The EOC was successfully activated in accordance with the county plan by activation of the emergency notification system for EOC staff. The EMAD maintained direction and control, properly coordinated protective action decisions, and ensured situational awareness through frequent staff briefings. The EOC had sufficient equipment and communications for conducting operations and communicating with other State and local governments and agencies, including two dedicated telephone systems, radio system, WebEOC, and email capacity.

The EOC staff successfully demonstrated the ability to coordinate with local, regional and State agencies to establish evacuation routes, traffic control points and backup route alerting. There was seamless coordination to ensure students and functional needs residents were notified and relocated. All personnel were professional, well trained and knowledgeable of their responsibilities.

Emergency Public Information and Warning Capability Summary:

Cleveland/Bradley County Emergency Management staff personnel demonstrated the capability to develop, coordinate, and disseminate accurate alert and emergency information to the media and the public to notify those county residents within the emergency planning zone. The Public Information Officers located in the EOC and the Joint Information Center ensured timely and accurate press releases clarified what actions the general public should take. They ensured that any press releases were reviewed by the EMAD to maintain consistency and accuracy. In

addition to their web site, the county has Twitter and Facebook social media accounts, which were updated periodically for the general public to access for the latest status.

When a siren failure was identified by the State Emergency Operations Center, the EMAD and the Sheriff's Office Operations Officer quickly initiated action by a trained Sheriff's Deputy who was thoroughly knowledgeable of the process to perform backup route alerting.

A public inquiry dispatcher from the County 9-1-1 Center staffed the Public Inquiry function in the EOC and she obtained accurate information or referred the callers to the appropriate information sources. There were no trends or rumors identified during the exercise.

Public Safety and Security Response Capability Summary:

The direction, coordination and control of the Bradley County traffic control points (TCPs) are the responsibility of the Bradley County Sheriff's Office and the Pike Road Department. County TCPs are established at the direction of the Cleveland/Bradley County Emergency Management Agency Director. The capability to operate a TCP was demonstrated by interview with a Sheriff's Office Deputy. The Deputy who was interviewed demonstrated excellent knowledge of his responsibility to manage the traffic flow from the evacuated area. He was knowledgeable in directing evacuees out of affected areas to the shelter, immediate clearance of impediments, and the use of issued exposure control equipment. The Deputy successfully demonstrated appropriate traffic control to include providing accurate instructions to the general public. He had sufficient communications and other equipment and supplies to operate the TCPs and support state and county emergency operations. The Deputy was well trained, knowledgeable, and professional.

HAZMAT Response and Decontamination Capability Summary:

The Tennessee Department of Forestry is in charge of monitoring and decontaminating emergency worker's vehicles and equipment at the Bradley County Emergency Worker Decontamination Station located at Bradley County High School. The Bradley County Health Department is in charge of monitoring and decontaminating emergency workers. Additionally, the Cleveland Fire Department, The Bradley County Fire Department, the Bradley County Sheriff's Office, and the Bradley County Auxiliary Communications Service all had personnel present to assist with operations. The facility serves its purpose well and is set up in a fashion to minimize cross contamination. All personnel at the facility were familiar with exposure control

equipment and knew their administrative limits when interviewed. Adequate equipment was available to support operations. The personnel working at the facility successfully demonstrated their ability to monitor and decontaminate emergency workers and vehicles. The workers at the site were knowledgeable in their assigned duties and were fully engaged during the exercise. The volunteers and workers were well prepared and should be commended. In total, three emergency workers and their vehicles were processed during the exercise.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1, 6.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.5 Hamilton County

Emergency Operations Center Management Capability Summary:

The Director, Hamilton County Emergency Management and the staff of the county emergency operations center (EOC) demonstrated the ability to effectively manage the jurisdictional response to an incident at the Sequoyah Nuclear Power Plant (SQN). The Director and EOC Chief provided timely staff updates and guidance to EOC staff ensuring actions to safeguard the public as described in county plans and procedures were coordinated and implemented in a timely manner. The State has the lead in developing the prompt notification of the public however the Director was an active participant in the protective action decision process. He advised the staff of the timing of sounding of sirens and release of emergency alert messages and oversaw county actions in support of these decisions.

The Director activated the EOC at the Emergency Classification Level Notice of Unusual Event. This activation was taken based on the Director's assessment of the incident at SQN. EOC staff members were not pre-positioned so that the county could conduct a real time mobilization. The EOC Chief utilized the Reverse 911 rapid notification system to alert and mobilize county government officials for the EOC activation. Upon arrival and throughout the duration of the

exercise, the EOC Chief maintained situational awareness by consistently briefing the staff on current plant conditions following Meet Me Line conference calls with the State and utility. The Director and EOC Chief also provided guidance and followed progress on all exercise injects to ensure requisite actions were initiated and followed through to completion.

The Hamilton County Emergency Operations Center has a robust communications capability that enables emergency communications redundancy. Critical interface with decision makers at the SEOC was conducted over the dedicated Meet Me Line. Within the EOC, communications support is also available from individual landline circuits at each of the 32 work stations, individual and agency cell phones, internet connectivity through 25 desktop and 12 laptop computers, and through WebEOC. Public Safety representatives were equipped with 800 MHz radios that operated on agency assigned frequencies but also provided for interoperability with other agencies. There were no communications difficulties encountered during the demonstration.

Emergency Public Information & Warning Capability Summary:

The Hamilton County Emergency Management Director and EOC Chief demonstrated the ability to actively participate in the State led public alert and notification and emergency information process. The county further demonstrated, through interview, the ability to back up the State in activating the alert and notification system in an emergency situation. The law enforcement community fully recognized and explained its role in providing timely and effective back-up notification to the public in the event of siren failure. Emergency news releases prepared by county representatives to the Joint Information Center were well coordinated and approved by EOC leadership following established procedures.

Public Safety and Security Response Capability Summary:

The Hamilton County Sheriff's Office successfully demonstrated their capability to provide traffic control during an incident at SQN. The capability was demonstrated through interview with a Hamilton County Sheriff's Officer. The officer was provided a radiological safety briefing and a dosimetry kit prior to being dispatched to his location. It was simulated that his dosimetry kit was issued to him at the Snow Hill Fire Training Facility which is one of three dosimetry distribution points. He was knowledgeable about his dosimetry, KI, administrative limits, and record keeping. He had adequate equipment and communications to conduct the

operation. He also knew who to contact if additional resources were required. The traffic control point he was assigned to was # 47. From that location, the officer was able to direct traffic along the appropriate route to Red Bank Middle School which is the designated shelter for that area. If impediments to traffic were identified the officer would attempt to clear the way for traffic. If he was unable to do so, he knew the appropriate agencies to contact for assistance. The officer was familiar with the plans and procedures and well prepared to execute the mission.

Citizen Evacuation and Shelter in Place Capability Summary:

School principals in Hamilton County successfully demonstrated their ability to implement protective actions for students during an incident at Sequoyah Nuclear Power Plant. Interviews were conducted with the principals at Central High School, Hamilton County High School, Snow Hill Elementary School, Wallace A. Smith Elementary School, Big Ridge Elementary School, and Falling Water Elementary School. All Schools had a common plan based on standard procedures provided by Hamilton County Emergency Services and the Hamilton County Department of Education. Upon an Alert declaration, the Hamilton County Director of Transportation will arrange buses and drivers to report to all schools located within the 10 mile EPZ. There are adequate buses and drivers available to relocate all students and staff. If a Site Area Emergency is declared, the students and staff will relocate to paired schools outside of the EPZ. The buses will be escorted by law enforcement officers equipped with radiological exposure control equipment and standard law enforcement communications equipment. The goal is to have all students within the 10 mile EPZ relocated prior to any radiological release from the utility. All principals interviewed had written plans that were unique to their school and regular briefings were provided to teachers and staff. Accountability of all students would be maintained throughout the relocation. Both the Hamilton County EOC and parents of students would be kept informed of the status of the children by the principal and staff. The principals were knowledgeable and well prepared to protect their students.

HAZMAT Decontamination and Response Capability Summary:

This capability was demonstrated in five locations including Memorial Hospital for a Medical Service Drill, Parkridge Medical Center for a Medical Service Drill, East Ridge High School for a Reception and congregate care center, Howard School of Academics for a Reception and congregate care center, and Ooltewah Middle School for emergency worker and vehicle monitoring and decontamination.

The Medical Service Drills began with a potentially contaminated patient being picked up by the Hamilton County Emergency Medical Services (EMS). The EMS crews arrived at the scene dressed in PPE ready for patient pick up. They brought all the supplies required to transport the patient to the hospital while minimizing the spread of contamination. They were familiar with their dosimetry and their duties as it relates to dealing with potentially contaminated individuals. After conducting a medical assessment on the patient, the EMS crews began preparing the individuals for transport to the hospitals. Their clothes were partially removed and they were wrapped in sheets to contain any contamination. The EMS crews communicated well with both the patients and the hospitals. After the hospital was notified of the incoming patient, the Charge Nurse notified hospital administration and declared a Code Orange which means potentially contaminated patient requiring external triage.

The on duty Hospital Administrator at Memorial Hospital then ordered the activation of the Hospitals Command Center. The Command Center operates like an Emergency Operations Center with an Incident Commander and other key staff positions overseeing the Hospital's response to the incident. The new radiological emergency area (REA) at Memorial Hospital is a vast improvement to the previous facility. The area is much larger and set up of the room was accomplished very quickly. The room is a dedicated all hazard decontamination area with decontamination equipment designed into the room to handle multiple cases. The medical team had had enough room to move around easily and the room was divided into a hot and cold zone so that record keepers and support staff could be in the room without being contaminated. Contamination control equipment included direct reading dosimeters (DRD), permanent reading dosimeters (PRD), survey meters, and record sheets. A tarp was utilized to cover the floor and walls of the REA and the team was dressed in appropriate PPE. There were not adequate numbers of PRDs to be distributed to each team member. The DRDs were not zeroed and the initial reading was not recorded prior to issuance. Also, operational checks were not performed on the survey meters prior to operation. Retraining was provided to exercise participants and the issues with radiological control were corrected. The Hamilton County REP Manager provided the hospital with additional supplies of PRDs.

Parkridge Medical Center received a call from EMS on the 800 MHz radio located at the nurse station which provided them with an estimated time of arrival and all pertinent information regarding the potentially contaminated patient and his injuries. Hospital staff quickly began preparing their Decontamination Room (DR) and the ambulance dock area to receive a

contaminated patient. The ambulance dock area was covered with tarps, and the DR was prepared with butcher paper covering the walls, floor and ceiling for contamination control. DR staff had appropriate personal protection equipment (PPE) and dosimetry. Survey meters were successfully operationally checked by the Radiation Safety Officer (RSO) and a background reading was determined.

Upon arrival to the Hospitals, the patients' injuries were determined to be non-life threatening and the teams proceeded with monitoring and decontamination. The patients were successfully monitored and decontaminated by the teams. After ensuring the patients were free of contamination, they were placed on a clean gurney and transferred elsewhere in the hospitals for treatment.

The teams then began to exit the REA. The PPE doffing procedures were not initially adhered to at Memorial Hospital. Team members were not monitored for contamination after removing their PPE and prior to exiting the REA. Retraining was performed and the task was successfully demonstrated. Both hospitals successfully demonstrated removal of PPE while minimizing cross contamination. They were monitored prior to leaving the area. The EMS staff and the ambulance were then monitored and released. All potentially contaminated items were gathered and stored for disposal as radiological waste. Hamilton County EMS and the staff at Memorial Hospital and Parkridge Medical Center worked well together and successfully demonstrated their capability to respond to, transport, monitor, and decontaminate a radiologically contaminated patient.

The Hamilton County Health Department is responsible for ensuring that all evacuees are monitored and free of contamination prior to entering a congregate care center. They successfully demonstrated that operation at reception centers located at both East Ridge High School and Howard School of Academics. Other participating agencies included the East Ridge Police Department, Chattanooga Police Department, and the Hamilton County Auxiliary Communications Service (ACS). Law enforcement personnel provided security at the facility and also directed traffic into the parking area. ACS provided communications to the county EOC and other shelters. The Chattanooga Fire Department did not participate in the exercise, but they would be utilized to assist with vehicle parking and directing foot traffic to the reception centers. There were adequate amounts of equipment, supplies, and signage to support operations. All emergency workers at the facilities were briefed on radiological exposure control and were issued dosimetry kits. They were familiar with their administrative limits and checked

their dosimetry every fifteen minutes. Readings were radioed in to a safety officer who recorded and maintained all readings. Evacuees arriving at the reception centers were monitored for contamination using a handheld survey meter. All meters were operationally checked prior to operation and were within annual calibration. The monitoring teams at both facilities used excellent monitoring techniques and provided the evacuees with thorough communication about the process. They were very familiar with their instruments and the action levels for determining the need for decontamination. Evacuees requiring decontamination were guided to shower facilities to undergo decontamination. The personnel in the shower facilities communicated well with the evacuees to explain the process and actions required for decontamination. They took special care to decontaminate personal items in order to avoid confiscating them. They used common sense decontamination techniques such as utilizing a lint roller to remove contamination or disposing of single contaminated clothing items to avoid confiscating all clothing and putting everyone through the showers. Once decontamination was complete, the evacuee was monitored once more and if clean was guided to the exit clerk for registration to the shelter. All staff involved in the Hamilton County reception and congregate care centers were well trained and prepared for the operation.

The Tennessee Department of Agriculture, Division of Forestry (DOF) and the Hamilton County Health Department successfully demonstrated their ability respond to, set up, and operate an emergency worker and vehicle monitoring and decontamination site (EWD). Ooltewah Middle School was the facility used for the operation. Supporting organizations included the Hamilton County Sheriff's Department and the Tri-Community Volunteer Fire Department. Sufficient equipment, dosimetry and supplies to support the EWD operations were available during this demonstration. The Hamilton County Health Department Team Captain gave an extremely informative safety and radiological briefing to the EWD team. She also reminded each worker as they were issued their dosimetry of their exposure limits, KI requirements and time requirements for reading and reporting their DRD results. The monitoring teams conducted operational checks on the survey meters and demonstrated the proper use of the instruments. All workers were knowledgeable in exposure control and were well trained in their roles and positions in support of these operations. The personnel operating the EWD successfully demonstrated the monitoring and decontamination of emergency workers and their vehicles. These operations were performed in accordance with the procedures outlined in the county's plans, procedures and guidance.

Mass Care Capability Summary:

Shelter operations at East Ridge High School and Howard School of Academics are managed by the Chattanooga Chapter of the American Red Cross (ARC) and supported by the Hamilton County Department of Human Services. Both agency's representatives successfully demonstrated the ability to staff and equip the shelter in preparation to receive displaced persons. The congregate care centers were set up with staffed reception desks which demonstrated filling out standard ARC forms to register evacuees. They ensured that everyone entering the reception area was wearing a green bracelet that identifies them as having been monitored and deemed free of contamination. Trailers with shelter supplies are available for cots blankets and other comfort items. There are cafeterias in the schools that can be utilized to provide meals to evacuees. ARC also has meal trucks that can be deployed to the shelter. There were separate stations set up at the shelter for medical treatment and crisis counseling, as well as a medication distribution area. The capacity of the shelters was more than adequate for the expected number of evacuees and relocated school children. The ARC representatives were knowledgeable about the facilities, their roles, and the resources that can be acquired. Potassium Iodide (KI) is available at the county health departments and will be staged at the shelter if requested. The Hamilton County Health Department is prepared to distribute KI to the public from the shelter if told to do so by the State Medical Officer. They have forms for keeping track of who has ingested KI.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1, 6.a.1, 6.b.1, 6.c.1, 6.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: 6.d.1.

ISSUE NO.: 58-12-6d1-A-01

CRITERION: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals.

CONDITION: Radiological controls at Memorial Hospital were inadequate for ensuring: Instrumentation was operable and able to detect contamination; exposures to emergency workers were accurately recorded using dosimetry; and the minimization of cross contamination when exiting the Radiological Emergency Area. Direct reading dosimeters were issued to emergency workers without being zeroed

out. Also the initial readings were not recorded prior to issuance. There were insufficient quantities of permanent reading dosimeters for each emergency worker. There was no operability checks performed on the instrumentation prior to use. Also, emergency workers were not monitored for contamination after removing their PPE and prior to exiting the Radiological Emergency Area.

POSSIBLE CAUSE: There is no portion of the annual radiological emergency worker training that covers use of survey instruments. The operability check can be challenging to those who have not been trained on the proper methods. There is math involved due to the lack of a range of reading on the instrumentation. The range of reading sticker stated "14.7 KCPM", leaving the range to be calculated by the user; however it was unclear to the emergency worker what this number means and how it applies to an operability check. It's an understandable mistake if there has been no training provided in that area as the sticker is confusing. Another area that is not discussed in the annual training is proper method of doffing PPE. Dosimetry is a topic that was covered in the annual training, but the concerns with dosimetry were not a training issue. They were short-handed on supplies of PRDs. As for zeroing the DRDs prior to issuance, there was not much time available to prepare for the patients arrival, and someone simply forgot to record the initial readings.

REFERENCE: NUREG-0654/FEMA-REP-1, H.10; K.3.a

EFFECT: When radiological control practices are not maintained, the possibility of spreading contamination exists. The workers are also not able to track and maintain their exposures during the incident. Both of these issues can lead to unsafe conditions. The operability check on a survey meter is recommended by the manufacturer for ensuring that the meter is still functioning as it was following calibration. By ensuring the meter reads within a certain range using a known source, you can confidently assume the meter is providing accurate readings when surveying a patient. If the meter is dropped or the probe is switched from another meter, the readings can be affected. The operability check ensures that the meter is still functioning as it should. Dosimetry ensures that emergency workers can accurately track and maintain their exposures throughout the incident. Once certain exposures are reached, emergency workers should be removed from duty. If this is not adequately tracked and recorded there is no way of knowing what a person's

exposure has been. Contamination control also includes ensuring that all contamination remains in a controlled area, in this case the REA. When emergency workers were leaving the area they were not monitored after removing their PPE. Without conducting a final survey of workers leaving the REA, you cannot be certain that no contamination is leaving that controlled area. The potential to spread contamination in clean areas of the hospital then exists.

CORRECTIVE ACTION DEMONSTRATED: Retraining was provided to exercise participants during the exercise and the issues with radiological control were corrected and successfully demonstrated. The Hamilton County REP Manager provided the hospital with additional supplies of PRDs. The radiological officer performed a satisfactory check of the survey meter's operability, including verification of accurate readings using a check source and range of reading sticker. Emergency workers exiting the REA removed their PPE prior to exiting the area. They were then monitored to ensure no contamination left the area. Although additional training is recommended, the issue was corrected through successful demonstration.

- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.6 Rhea County (Host)

HAZMAT Response and Decontamination Capability Summary:

The reception center at Rhea County High School was well equipped to support monitoring and decontamination operations. Adequate amounts of personnel, dosimetry, monitoring equipment, and decontamination supplies were on site to support the expected number of evacuees. A portal monitor was set up as the initial monitoring point. Following initial monitoring, evacuees determined to be clean were given a green wrist band and then directed to the American Red Cross shelter registration. If the evacuee was contaminated, they were directed to a secondary monitoring point where they were hand frisked using a Ludlum Model 3 survey meter. A personal monitoring form was filled out with the evacuee's information and the location and

amount of contamination. The evacuee was then directed into the decontamination area where the contamination was isolated and a decontamination process performed. Decontamination is performed by utilization of showers, hand wash station, or the removal of contaminated clothing. Following decontamination the evacuee was re-monitored, and if decontamination was successful they were provided a green wrist band and replacement clothing then directed to the shelter. The evacuee's vehicle is then impounded and flagged as being possibly contaminated. These vehicles would not be surveyed until a time when the mission would allow. The facility was laid out in a manner that minimized cross contamination. All exercise participants were familiar with their plans, equipment, and duties for the operation.

Mass Care Capability Summary:

Shelter operations at Rhea County High School are managed by the Chattanooga Chapter of the American Red Cross (ARC). An ARC representative successfully demonstrated through interview, the ability to staff and equip the shelter in preparation to receive displaced persons. The congregate care center will be set up with two reception desks. One desk will be located at the main entrance and the other will be located near the exit of the decontamination area. Everyone entering the reception area must wear a green bracelet that identifies them as having been monitored and deemed free of contamination. Trailers with shelter supplies are available for cots blankets and other comfort items. There is a cafeteria in the school that can be utilized to provide meals to evacuees. ARC also has meal trucks that can be deployed to the shelter. There are breakout rooms at the shelter for medical treatment and crisis counseling, as well as a medication distribution area. The capacity of the shelter is 4500, which is more than adequate for the expected number of evacuees and relocated school children. The ARC representative was knowledgeable about the facility, his role, and the resources that can be acquired. Potassium Iodide (KI) is available at the county health departments and will be staged at the shelter if requested. The State and county Health Departments are prepared to distribute KI to the public from the shelter if told to do so by the State Medical Officer. They have forms for keeping track of who has ingested KI.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.e.1, 3.a.1, 3.b.1, 6.a.1, 6.c.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None

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- d. PLAN ISSUES: None
 - e. NOT DEMONSTRATED: None
 - f. PRIOR ISSUES - RESOLVED: None
 - g. PRIOR ISSUES - UNRESOLVED: None

SECTION 4: CONCLUSION

Officials and representatives from the State of Tennessee, Bradley and Hamilton Counties, the Nuclear Regulatory Commission (NRC), FEMA, and TVA, as well as numerous volunteers participated in this exercise. The cooperation and teamwork of the participants was evident throughout all the phases of the exercise. The Federal Emergency Management Agency (FEMA) wishes to acknowledge the efforts and hard work of the many individuals who participated in the success of this exercise. Their training and knowledge of responsibilities is evident. FEMA would also like to acknowledge the enthusiasm and contributions of the exercise planning team during the design of the exercise. The planning team worked very hard to develop a challenging and beneficial exercise that exceeded the requirements and expectations of FEMA. They exhibited a dedication to preparedness and an eagerness to improve emergency management and response at all levels.

During this exercise, FEMA did not identify any Deficiencies; however, one Area Requiring Corrective Action (ARCA) was identified. The ARCA involved a lack of radiological controls at Memorial Hospital. This ARCA was re-demonstrated and corrected on the spot. The training on radiological controls provided to emergency workers should be modified and enhanced to include proper use of radiological monitoring equipment. The risk counties demonstrated a real time alert and mobilization of staff with great success. Both counties commented that they are better prepared as a result of the mobilization and that it added realism to the exercise. Although allowed in the extent of play, the amount of simulation used by the field monitoring teams diminished the availability of a training opportunity. Overall, State and local organizations demonstrated knowledge of their emergency response plans and procedures and successfully implemented them.

APPENDIX A: EXERCISE TIMELINE

Table 1 - Exercise Timeline
DATE: 2012-10-03, SITE: Sequoyah Nuclear Power Plant, TN

Emergency Classification Level or Event	Time Utility Declared	TN	TN JIC	Bradley County	Hamilton County
Unusual Event	0816	0820	NA	0825	0832
Alert	0830	0843	0856	0845	0846
Site Area Emergency	0923	0937	0937	0936	0937
General Emergency	1034	1040	1040	1040	1040
Simulated Rad. Release Started	0942	1044	1024/1143	0825	1030
Simulated Rad. Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational		0917	0934	0955	0909
Declaration of State of Emergency: State		0912	NA		
Exercise Terminated		1339	1321	1325	1309
Early Precautionary Actions: Relocation of Schools			0947	0936	0923
Early Precautionary Actions: Relocation of Functional Needs Population				1105	1040
Early Precautionary Actions: River Clearance					1040
1st Protective Action Decision:		0938	NA	0938	0938
1st Siren Activation		0948	0948	0948	0948
1st EAS Message: 5, 7		0948	0948	0948	0948
2nd Protective Action Decision: EVAC A1, B1, C1, D1, and Quadrants B & C; Shelter remainder of Quadrants A & D		1100	1100	1100	1100
2nd Siren Activation		1110	1110	1110	1110
2nd EAS Message: 35, 5, 18, 101, 103		1110	1110	1110	1110
KI Administration Decision: Emergency Workers do not ingest		1130		1130	1130

APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS

DATE: 2012-10-03, SITE: Sequoyah Nuclear Power Plant, TN

LOCATION	EVALUATOR	AGENCY
State of Tennessee	Bernis Hannah Joe Harworth Marynette Herndon Lorenzo Lewis Gerald Mclemore Brad McRee *Robert Nash Odis Spencer	ICFI FEMA ICFI FEMA-NP- TH-REP FEMA RIV ICFI FEMA-NP- TH-REP FEMA
TN Joint Information Center	John Ackermann Walt Cushman *Robert Spence	FEMA FEMA-NP- TH-REP FEMA-NP- TH-REP
Central Emergency Control Center	*Larry Robertson	FEMA-NP- TH-REP
Bradley County	Matthew Bradley *Michael Dolder John Fill Ronald Shaw	FEMA RIV FEMA-NP- TH-REP FEMA RIV FEMA-NP- TH REP
Hamilton County	Matthew Bradley Willis Larrabee *Lisa Rink	FEMA RIV ICFI FEMA R4
Rhea County (Host)	*Matthew Bradley Lorenzo Lewis Robert Spence	FEMA RIV FEMA-NP- TH-REP FEMA-NP- TH-REP
* Team Leader		

APPENDIX C: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
AAC	After Action Conference
AAR	After Action Report
ACS	Auxiliary Communications Service
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio for Emergency Services
CECC	Central Emergency Coordination Center
CFR	Code of Federal Regulations
CPM	Counts per Minute
DACO	Direction and Control Officer
DHS	Department of Homeland Security
DOF	Tennessee Division of Forestry
DR	Decontamination Room
DRD	Direct Reading Dosimeter
DRH	Division of Radiological Health
DRHC	Division of Radiological Health Coordinator
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EEG	Exercise Evaluation Guide
EM	Emergency Management
EMA	Emergency Management Agency
EMD	Emergency Management Director
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOPA	Extent of Play Agreement
EPZ	Emergency Planning Zone
ERC	Emergency Response Coordinator
ESC	Emergency Support Coordinator
ESF	Emergency Support Function
EST	Eastern Standard Time
EWD	Emergency Worker and Vehicle Monitoring and Decontamination
FCC	Field Coordination Center
FCCD	Field Coordination Center Director

FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FNF	Fixed Nuclear Facility
FOUO	For Official Use Only
GE	General Emergency
GIS	Geographic Information System
HAZMAT	Hazardous Materials
HCHD	Hamilton County Health Department
HSEEP	Homeland Security Exercise and Evaluation Program
ICS	Incident Command System
IP	Improvement Plan
IPZ	Ingestion Pathway Zone
JIC	Joint Information Center
JIS	Joint Information System
KCPM	Thosand Counts per minute
KI	Potassium Iodide
LE	Law Enforcement
LOCA	Loss of Coolant Accident
LP-1	Local Primary -1
MAC	Multi-Agency Coordination
MACC	Multi-Agency Coordination Center
MCC	Mission Control Center
MJRERP	Multi-Jurisdictional Radiological Emergency Response Plan
MOU	Memorandum of Understanding
mR	milliroentgen
mR/h	milliroentgen per hour
NAWAS	National Warning System
NGO	Non-Governmental Organization
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NOUE	Notification of Unusual Event
NRC	Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980
OOS	Out-of-Sequence
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PIO	Public Information Officer

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PNS	Prompt Notification System
PPE	Personal Protective Equipment
PRD	Permanent Record Dosimetry
R	Roentgen
R/h	Roentgen(s) per hour
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RCO	Radiation Control Officer
RCS	Reactor Coolant System
REA	Radiological Emergency Area
REM	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness
REPP	Radiological Emergency Preparedness Program
RERP	Radiological Emergency Response Plan
RMC	Radiological Monitoring Coordinator
RMCC	Radiological Monitoring Coordination Center
RSO	Radiological Safety Officer
S-JICD	State JIC Director
SAE	Site Area Emergency
SEID	State Emergency Information Director
SEOC	State Emergency Operations Center
SIP	Shelter-in-Place
SOG	Standard Operating Guide
SOP	Standard Operating Procedure
SQN	Sequoyah Nuclear Power Plant
TCL	Target Capabilities List
TCP	Traffic Control Point
TDEC	Tennessee Department of Environment and Conservation
TVA	Tennessee Valley Authority
TVA-JICD	Tennessee Valley Authority Joint Information Center Director
VOAD	Voluntary Organizations Active in Disasters
VOIP	Voice over Internet Protocol

APPENDIX D: SQN EXTENT OF PLAY AGREEMENT



THE STATE OF TENNESSEE
TENNESSEE EMERGENCY MANAGEMENT AGENCY
EMERGENCY OPERATIONS CENTER
MILITARY DEPARTMENT OF TENNESSEE
3041 SIDCO DRIVE, P.O. BOX 41502
NASHVILLE, TENNESSEE 37204-1502
(615) 741-0001

SEQUOYAH NUCLEAR PLANT 2012 GRADED EVALUATION EXERCISE (PLUME EXPOSURE PATHWAY) 10-MILE EMERGENCY PLANNING ZONE (EPZ) GOALS, CRITERIA, AND EXTENT-OF-PLAY

A full participation exercise will be conducted during the week of October 3, 2012 for the purpose of demonstrating an integrated radiological emergency response capability for the Sequoyah Nuclear Plant (SQN). The exercise will be a one-day event, encompassing response capabilities and requirements of the State, local governments, and the Tennessee Valley Authority (TVA) in the Emergency Planning Zone (EPZ).

The State of Tennessee and TVA have prepared goals addressing respective obligations. Both reflect the necessary interactions between the State and local governments as well as the utility as set forth in the Multi-Jurisdictional Radiological Emergency Response Plan (MJRERP) for the Sequoyah Nuclear Plant. The six (6) evaluation areas coupled with specific criteria to accomplish the following goals have been written in accordance with the new FEMA REP Manual.

NOTE: All exercise times are Eastern for Exercise Scenario. Ensure entry times annotate Eastern.

STATE AND LOCAL GOVERNMENT EXERCISE GOALS:

State and local government goals for this exercise are:

1. Test as well as evaluate the Sequoyah Nuclear Plant MJRERP concurrently with local government implementing procedures.
2. Demonstrate and assess the continued viability of the integrated radiological emergency response effort through State and local government offsite personnel implementing response actions in accordance with established guidance.
3. Ensure the safety of the general public through the issuance of protective action recommendations, as appropriate.
4. Demonstrate operational control of Field Monitoring Teams (FMT) and their sampling capabilities.

CAPABILITY: Emergency Operations Management (State and County EOC's)

Definition: Emergency Operations Center (EOC) management is the capability to provide multi-agency coordination (MAC) for incident management by activating and operating an EOC for a pre-planned or no-notice event. EOC management includes: EOC activation, notification, staffing, and deactivation; management, direction, control, and coordination of response and recovery activities; coordination of efforts among neighboring governments at each level and among local, regional, State, and Federal EOCs; coordination of public information and warning; and maintenance of the information and communication necessary for coordinating response and recovery activities. Similar entities may include the National (or Regional) Response Coordination Center (NRCC or RRCC), Joint Field Offices (JFO), National Operating Center (NOC), Joint Operations Center (JOC), Multi-Agency Coordination Center (MACC), Initial Operating Facility (IOF), etc.

Activity 1: Activate EOC (Definition: In response to activation, perform incident notifications, recall essential personnel, and stand-up EOC systems to provide a fully staffed and operational EOC.)

1.1 ORO's use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (Sub-element 1.a, Mobilization, Criterion 1.a.1: NUREG-0654, A.4. D.3, 4, E.1, 2, H.4)

EXTENT-OF-PLAY- TEMA Operations will receive the emergency notification from TVA, verify the notification, contact, alert, and mobilize key personnel in a timely manner. Notification to adjacent states will also be demonstrated at the State Emergency Operations Center (SEOC), through the Operations section in accordance with the appropriate notification checklist as contained in the Sequoyah MJRERP. Facilities will be considered operational at the START OF EXERCISE (STARTEX) with assigned personnel at the SEOC, Field Coordination Center (FCC), Radiological Monitoring Control Center (RMCC) (to include Field Monitoring Teams), Central Emergency Control Center (CECC);

already pre-positioned and in-place no later than 8:00 AM Eastern/7:00 AM Central.

Risk County (Hamilton and Bradley) Emergency Operations Centers (EOCs) respond IAW their implementing procedures from time of notification, personnel traveling to their respective EOCs to perform their duties upon arrival. The Joint Information Center (JIC) personnel will delay one (1) hour (not to include reporting through TVA Security) to be in-place and perform their duties not before 9:00 AM Eastern/8:00 AM Central.

Release of personnel will be phased and in accordance with performance measures and training objectives, determined as met per senior leadership, by facility location.

The SEOC DACO, FCC Director, RMC Coordinator, TEMA JIC Co-Director and Risk County EMA Directors will discuss with evaluators agency capabilities/procedures to alert and mobilize staffs.

1.2 Facilities are sufficient to support emergency response. (Sub-element 1.b, Facilities, **Criterion 1.b.1:** NUREG-0654, H.3)

EXTENT-OF-PLAY – Evaluators will “baseline” the FCC and RMCC.

1.3 At least two communications systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (Sub element 1.d, Communications, **Criterion 1.d.1:** NUREG-0654, F. 2.)

EXTENT-OF-PLAY – The SEOC, FCC/RMCC, and Risk County EOCs will demonstrate primary and alternate communications systems. The communications network between the DRH field teams and RMCC and the RMCC and SEOC/CECC will be evaluated at the RMCC.

1.4 Equipment, maps, displays, dosimeters, potassium iodide (KI), other supplies are sufficient to support emergency operations. (Sub-element 1.e., Equipment and Supplies to Support Operations, **Criterion 1.e.1:** NUREG-0654, H., J.10.a.b.e.f.j.k, 11, K.3.a).

EXTENT-OF-PLAY – The SEOC, FCC, RMCC, JIC, and Risk County EOCs (Hamilton and Bradley) will be set up in accordance with established plans and procedures. Ingestion of KI will be simulated.

Activity 2: Direct EOC Operations (Definition: Following activation of the EOC system, staff and organize the EOC in accordance with the comprehensive emergency management plan (CEMP) and the requisite policies, procedures, and directives.)

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

EXTENT-OF-PLAY – The Direction and Control Officer (DACO) at the SEOC will assume primary responsibility for direction and control working in concert with the FCC, JIC, and Risk County EOC Directors. The state will discuss the DACO's role at the FEMA (REP)/State briefing.

2.2 OROs use a decision-making process, considering relevant factors and appropriate coordination, to insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (Sub-element 2.a., Emergency Worker Exposure Control, **Criterion 2.a.1:** NUREG-0654, K.4.)

EXTENT-OF-PLAY – Demonstration will be accomplished by staff in the SEOC and Risk County EOCs.

2.3 A decision-making process involved consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy). (Sub-element 2.b., Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency, **Criterion 2.b.2:** NUREG, J.9, 10.M.)

EXTENT-OF-PLAY – Demonstration will be accomplished by staff in the SEOC. The Chief Medical Officer for the Tennessee Department of Health, after consultation with DRH, will make all decisions concerning the administration of KI to emergency workers, institutionalized persons, and the general public. When a decision is made, instructions will be coordinated with the local EOCs.

2.4 Protective action decisions are made, as appropriate, for special population groups. (Sub-element 2.c., Protective Action Decisions Consideration for the Protection of Function and Access Needs Population, **Criterion 2.c.1:** NUREG-0654, J.9, 10.c.d.e.g).

EXTENT-OF-PLAY – Decisions will be coordinated through affected Risk County EOCs for understanding and implementation. Lists of the special needs as well as the resources necessary and available for evacuation are maintained by

local EMA Directors and when requested, will be provided to the evaluator. Organizational procedures for executing protective actions will be discussed with evaluators. Contact with the Public School System will be actual. (See Criterion 3.c.2.)

Activity 3: Support and Coordinate Response (Definition: Once requested, provide resource, technical, and policy support to the Incident Command by coordinating the actions of off-site agencies, organizations, and jurisdictions, implementing MAAs, and requesting higher-level assistance.)

3.1 (CECC Only) Appropriate protective action recommendations are based on available information including: plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions. (Sub-element 2.b., Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency, **Criterion 2.b.1:** NUREG-0654, I.8., 10, and Supplement 3.)

EXTENT-OF-PLAY – Demonstration will be accomplished by staff in the TVA CECC. This will be done in concert with the RMCC, and Division of Radiological Health (DRH) personnel at the SEOC. Dose assessment and independent validation of dose projections will be performed. Radiological data for the field teams will be inserted by Controller injects and sent to the SEOC via the RMCC. Projections will be based on plant data provided by TVA and field radiation measurements.

3.2 The OROs issue appropriate dosimeters, KI, and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. Appropriate record keeping of the administration of KI for emergency workers is maintained. (Sub-element 3.a., Implementation of Emergency Worker Exposure Control, **Criterion 3.a.1:** NUREG-0654, J.10.e; K.3.a, b; K.4).

EXTENT-OF-PLAY – Determination of Emergency Worker (EW) exposure control will be done by interview with the evaluators (as pertains to direction and control.) EWs with assignments in the 10-mile EPZ and those involved in radiological monitoring and/or decontamination are issued EW dosimetry kits and given safety briefs, to include out-of-sequence activities. Two (2) EWs in each of the Risk County EOCs (Hamilton and Bradley) will be available to evaluators for interview as to knowledge of recording dosimetry readings and actions to be taken when certain thresholds are reached, especially if the established turn-back value (2.5 R [5 R TEDE]) is met or exceeds exposure limits. Hamilton County will demonstrate a dosimetry distribution point. After consultation with DRH, the

Chief Medical Officer will make all decisions concerning the administration of KI to emergency workers. EWs receive KI in an EW kit upon issue.

3.3 KI and appropriate instructions are available in case a decision to recommend use of KI is made. Appropriate record keeping of the administration of KI for institutionalized individuals and the general public is maintained. (Sub-element 3.b., Implementation of KI Decision, **Criterion 3.b.1:** NUREG-0654, J.10.e.f.).

EXTENT-OF-PLAY – Demonstration by staff in the SEOC will be based on projected exposure. The Chief Medical Officer for the Tennessee Department of Health is located at the SEOC. After consultation with DRH, the Chief Medical Officer will make all decisions concerning the administration of KI to institutionalized persons and the general public. When a decision is made, instructions will be relayed through the local EOCs and, if the general population is included, distribution of KI to shelters will be simulated. The Chief Medical Officer and other staff in the SEOC/Local EOCs will be available for procedural discussions with evaluators.

3.4 Protective action decisions are implemented for Function and Access Needs Population other than schools within areas subject to protective actions (Sub-element 3.c., Implementation of Protective Actions for Function and Access Needs Population, **Criterion 3.c.1:** NUREG-0654, E.7., J.9., 10.c. d.e.g.)

EXTENT-OF-PLAY – Demonstration of this process by staff in the SEOC, FCC and local EOCs will be based on projected contamination exposure levels. Decisions will be coordinated through affected local EOCs for understanding and implementation. Implementation of protective actions will be simulated; however procedural discussions between staff in the SEOC/local EOCs will be discussed with the evaluators. Local EOCs will provide the FEMA Evaluator with a list of transportation dependent individuals (special needs cards) and a list of transportation providers.

3.5 OROs/School officials decide upon and implement protective actions for schools. (Schools include: all public schools, licensed day care centers, and participating private schools) (Sub-element 3.c., Implementation of Protective Actions for Function and Access Needs Population, **Criterion 3.c.2:** NUREG-0654, J.10.d. g.)

EXTENT-OF-PLAY – Actual calls will be made to school officials for evaluation purposes. A list of endangered schools and telephone numbers will be provided by the Local EOC Director.

3.6 Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (Sub-element 3.d., Implementation of Traffic and Access Control, **Criterion 3.d.1:** NUREG-0654, J.10.g, j., k.)

EXTENT-OF-PLAY – County/Local Law Enforcement personnel will discuss management of traffic and access control with evaluators in the EOCs. Decisions regarding traffic control will be based on the scenario. Injects will be addressed in accordance with plans and procedures.

3.7 Impediments to evacuation are identified and resolved. (Sub-element 3.d., **Criterion 3.d.2:** Implementation of Traffic and Access Control, NUREG-0654, J.10.k)

EXTENT-OF-PLAY – Impediments will be discussed. Staff personnel at the County EOCs will be available to discuss procedures with the evaluators. Injects will be addressed in accordance with plans and procedures.

CAPABILITY: Citizen Evacuation and Shelter in Place (Schools)

Definition: Citizen Evacuation and shelter-in-place is the capability to prepare for, ensure communication of, and immediately execute the safe and effective sheltering-in-place of an at-risk population (and service animals), and/or the organized and managed evacuation of the at-risk population (and service animals) to areas of safe refuge in response to a potential or actual or radiological environment. In addition, this capability involves the safe reentry of the population where feasible.

Activity 1: Direct Evacuation and/or In Place Protection (**Definition:** In response to a hazardous condition for a locality, direct, manage, and coordinate evacuation and/or in-place sheltering procedures for both the general population and those requiring evacuation assistance throughout incident.)

1.1 Out-of-Sequence Interview/Demonstration (Sub-element 3.c., Implementation of Protective Actions for Function and Access Needs Population, **Criterion 3.c.2:** NUREG-0654, J.10. d., g.)

EXTENT-OF-PLAY – Hamilton County will simulate school evacuations by out-of-sequence interviews with key school staff members and one bus driver from each evaluated school district.

Hamilton County schools to be evaluated are: Big Ridge Elementary, Central High School, Falling Water Elementary, Snow Hill Elementary, Wallace Smith Elementary, Hamilton County High School, and Harrison Bay Vocational.

CAPABILITY: Emergency Public Information and Warning (State and County EOCs and JICs)

Definition: Develop, coordinate, and disseminate accurate alerts and emergency information to the media and the public prior to an impending emergency and activate warning systems to notify those most at-risk in the event of an emergency. By refining its ability to disseminate accurate, consistent, timely, and easy-to understand information about emergency response and recovery processes, a jurisdiction can contribute to the well-being of the community during and after an emergency.

Activity 1: (JICs Only) Activate Emergency Public Information, Alert/Warning & Notification Plans (Definition: Activate key personnel, facilities, and procedures.)

1.1 ORO's use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (Sub-element 1.a, Mobilization, **Criterion 1.a.1:** NUREG-0654, A.4. D.3, 4, E.1, 2, H.4)

EXTENT-OF-PLAY – The Joint Information Center (JIC) personnel, State/local and TVA, will be pre-positioned and in place no later than 9:00 AM Eastern/8:00 AM Central. SEOC, FCC, RMCC, CECC, JIC and Risk County EOC assigned personnel will remain on duty until END OF EXERCISE (ENDEX). Release of personnel will be phased and in accordance with performance measures and training objectives, determined as met per senior leadership, by facility location.

1.2 At least two communications systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (Sub element 1.d, Communications, **Criterion 1.d.1:** NUREG-0654, F. 2.)

EXTENT-OF-PLAY – The JIC will demonstrate primary and alternate communications systems.

1.3 Equipment, maps, displays, dosimeters, potassium iodide (KI), other supplies are sufficient to support emergency operations. (Sub-element 1.e., Equipment and Supplies to Support Operations, **Criterion 1.e.1:** NUREG-0654, H., J.10.a.b.e.f.j.k, 11, K.3.a).

EXTENT-OF-PLAY – The JIC will be set up in accordance with established plans and procedures.

Activity 2: (JIC only) Manage Emergency Public Information and Warnings (Definition: In response to need for public notification, provide overall management and coordination of Emergency Public Information and Warning capability.)

2.1 Ensure OROs provide accurate emergency information and instructions to the public and the news media in a timely manner (The responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay) (Sub-element 5.b., Emergency Information and Instructions for the Public and the Media, Criterion 5.b.1: NUREG-0654, E.5, 7, G.3.a, G.4, a., b., c.)

EXTENT-OF-PLAY – Emergency instructions/information will originate from the SEOC prior to JIC activation; after activation, information will be disseminated from the JIC while emergency instructions will continue to be disseminated from the SEOC via the EAS.

Activity 3: Issue Initial Emergency Warnings (Definition: Upon receiving Protective Action Decisions, issue emergency public warnings through established warning systems.)

3.1 Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized off-site emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by FEMA REP guidance. (Sub-element 5.a., Activation of the Prompt Alert and Notification System, Criterion 5.a.1: 10 CFR Part 50, Appendix E & NUREG-0654, E.1., 4., 5., 6., 7.)

EXTENT-OF-PLAY – The Emergency Alert System (EAS) will be activated simultaneously with the initial activation (live test @ noon) of the Sequoyah Prompt Notification System (PNS) sirens with the live broadcast of a test message (EAS Message #1). TEMA MCC will fax a test message to the 24 hour LP-1 “relay” in Cincinnati, Ohio, simulating non staffing hours response capability at WUSY in Chattanooga. After the initial activation of the PNS sirens and broadcast of the special test message, subsequent PNS activations and contact with the LP-1 EAS control station will be simulated. Should there be a difference between the State and TVA System Status Monitors (SSMs) or if siren failure/s is/are indicated, backup route alerting for the affected coverage areas will be simulated; except for Bradley County demonstrating a FEMA/TEMA selected route. Risk County law enforcement personnel will be available to discuss the routes and procedures that would be utilized in an actual emergency situation.

Activity 4: Issue Subsequent Emergency Warnings (Definition: Upon receiving Protective Action Decisions, issue emergency public warnings through established warning systems.)

4.1 Backup alert and notification of the public is completed within a reasonable time following the detection of a failure of the primary alert and notification system. (Sub-element 5.a., Activation of the Prompt Alert and Notification System; **Criterion 5.a.3:** NUREG-0654, E.6, Appendix 3.B.2.c)

EXTENT-OF-PLAY – One (1) law enforcement officer will discuss with the evaluators procedures for back up route alerting (one (1) law enforcement officer will discuss TCPs under Criterion 3.d.1.) Only Bradley County will send a law enforcement officer with a FEMA evaluator to travel along a pre-designated evacuation route affected by Siren # (FEMA/TEMA selected). River clearing will NOT be demonstrated by Hamilton County.

4.2 OROs provide accurate emergency information and instructions to the public and the news media. (The responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay) (Sub-element 5.b., Emergency Information and Instructions for the Public and the Media, **Criterion 5.b.1:** NUREG-0654, E.5, 7, G.3.a, G.4, a., b., c.)

EXTENT-OF-PLAY – Emergency instructions/information will originate from the SEOC prior to JIC activation; after activation, information will be disseminated from the JIC while emergency instructions will continue to be disseminated from the SEOC via the EAS. TEMA MCC will fax a test message to the 24 hour LP-1 “relay” in Cincinnati, Ohio, simulating non staffing hours response capability at WUSY in Chattanooga.

Activity 5: Provide Public Inquiry Control (Definition: Track inquiries for rumors.)

5.1 Ensure OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (Sub-element 5.b., Emergency Information and Instructions for the Public and the Media, **Criterion 5.b.1:** NUREG-0654, E.5, 7, G.3.a, G.4, a., b., c.)

EXTENT-OF-PLAY – Rumor control will be conducted in accordance with plans and procedures.

CAPABILITY: Public Safety and Security Response (TCPs)

Definition: Public Safety and Security Response is the capability to reduce the impact and consequences of an incident or major event by securing the affected area, including crime/incident scene preservation issues as appropriate, safely diverting the public from hazards, providing security support to other response operations and properties, and sustaining operations

from response through recovery. Public Safety and Security Response requires coordination among officials from law enforcement (LE), fire, and emergency medical services (EMS).

Activity 1: Activate Public Safety/Security Response (Definition: Upon notification, mobilize and deploy to begin operations.)

1.1 ORO's use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (Sub-element 1.a, Mobilization, **Criterion 1.a.1:** NUREG-0654, A.4. D.3, 4, E.1, 2, H.4)

EXTENT-OF-PLAY – TCP Officers will discuss this criterion with FEMA evaluators on October 3, 2012.

1.2 At least two communications systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (Sub element 1.d, Communications, **Criterion 1.d.1:** NUREG-0654, F. 2.)

EXTENT-OF-PLAY – TCP Officers will discuss this criterion with FEMA evaluators on October 3, 2012.

1.3 Equipment, maps, displays, dosimeters, potassium iodide (KI), other supplies are sufficient to support emergency operations. (Sub-element 1.e, Equipment and Supplies to Support Operations, **Criterion 1.e.1:** NUREG-0654, H., J.10.a.b.e.f.j.k, 11, K.3.a).

EXTENT-OF-PLAY – At locations where traffic control personnel are deployed, the availability of appropriate equipment (e.g. vehicles, barriers, traffic cones and signs, etc.) will be discussed by law enforcement personnel.

1.4 The OROs issue appropriate dosimeters and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. Appropriate record keeping of the administration of KI for emergency workers is maintained. (Sub-element 3.a., Implementation of Emergency Worker Exposure Control, **Criterion 3.a.1:** NUREG-0654, J.10.e; K.3.a, b; K.4).

EXTENT-OF-PLAY – TCP Officers will be interviewed to determine their knowledge of radiation incident response procedures (i.e. exposure limits, protective clothing, dose record keeping, etc.) on April 17, 2012.

Activity 2: Control Traffic, Crowd, and Scene (Definition: Direct/redirect traffic and pedestrians out of the affected area(s). Assess, coordinate, and establish force protection and perimeter zones, maintain a visible and effective security presence to deter criminal conduct and maintain law and order.)

2.1 Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (Sub-element 3.d., Implementation of Traffic and Access Control, **Criterion 3.d.1:** NUREG-0654, J.10.g, j., k.).

EXTENT-OF-PLAY – Deployment of traffic and access control personnel will be simulated. However, EWs tasked with performing such duties will be interviewed in the parking lot at each of the Risk County EOCs (Hamilton and Bradley). When a roadblock or access point would be established, the EWs will be dispatched to the EOC rather than the location in the field. Interviews will cover all aspects of TCPs. EWs will discuss equipment needed to establish and maintain traffic and access control points. Real time communications will be conducted with the EOCs.

2.2 Impediments to evacuation are identified and resolved. (Sub-element 3.d., Implementation of Traffic and Access Control, **Criterion 3.d.2:** NUREG-0654, J.10.k)

EXTENT-OF-PLAY – County/Local Law Enforcement personnel will discuss actions to identify and remove impediments to evacuation at the Hamilton and Bradley County EOCs.

CAPABILITY: HAZMAT Decontamination and Response

Definition: HAZMAT Response and Decontamination is the capability to assess and manage the consequences of a hazardous materials release, either accidental or as part of a terrorist attack. It includes testing and identifying all likely hazardous substances onsite; ensuring that responders have protective clothing and equipment; conducting rescue operations to remove affected victims from the hazardous environment; conducting geographical survey searches of suspected sources or contamination spreads and establishing isolation perimeters; mitigating the effects of hazardous materials, decontaminating on-site victims, responders, and equipment; coordinating off-site decontamination with relevant agencies, and notifying environmental, health, and law enforcement agencies having jurisdiction for the incident to begin implementation of their standard evidence collection and investigation procedures.

Activity 1: Site Management and Control (Definition: In response to activation, mobilize and arrive at the incident scene and initiate response operations to manage and secure the physical layout of the incident.)

1.1 ORO's use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (Sub-element 1.a, Mobilization, **Criterion 1.a.1:** NUREG-0654, A.4. D.3, 4, E.1, 2, H.4)

EXTENT-OF-PLAY – All participating personnel will be pre-positioned at their respective Reception Center or EW Decon site for demonstration during OOS activities. Alert and notification procedures will be discussed with FEMA evaluators at this time. TDEC Dose Assessment personnel will describe their alert and notification procedures with the evaluator at the SEOC and the RMCC.

1.2 Facilities are sufficient to support emergency response. (Sub-element 1.b, Facilities, **Criterion 1.b.1:** NUREG-0654, H.3)

EXTENT-OF-PLAY – Evaluators will “baseline” the FCC and RMCC.

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

EXTENT-OF-PLAY – The DRH Radiological Monitoring Coordinator will provide direction and control of the RMCC and provide management of field team activities.

1.4 At least two communications systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (Sub element 1.d, Communications, **Criterion 1.d.1:** NUREG-0654, F. 2.)

EXTENT-OF-PLAY –The communications network between the DRH field teams and RMCC and the RMCC and SEOC/CECC will be evaluated at the RMCC.

1.5 Equipment, dosimeters, potassium iodide (KI), other supplies are sufficient to support emergency operations. (Sub-element 1.e, Equipment and Supplies to Support Operations, **Criterion 1.e.1:** NUREG-0654, H., J.10.a.b.e.f.j.k, 11, K.3.a).

EXTENT-OF-PLAY – Five (5) Field Teams, four (4) to be evaluated and one (1) in training, will utilize appropriate instrumentation and guidelines as established in DRH Standard Operating Procedures. Resolution for units of measure as data injects from TVA will be in conversion regardless of

equipment used. All other facilities will be equipped in accordance with plans and procedures.

- 1.6 The OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. Appropriate record keeping of the administration of KI for emergency workers is maintained. (Sub-element 3.a., Implementation of Emergency Worker Exposure Control, Criterion 3.a.1: NUREG-0654, J.10.e; K.3.a, b; K.4).**

EXTENT-OF-PLAY – Emergency workers or emergency worker teams will use Self Reading Dosimeters (SRDs) or electronic dosimeters and Permanent Record Dosimeters (PRDs) to monitor and control their radiation exposure. Emergency workers in low exposure rate areas will use PRDs and may use SRDs or place them in centralized areas.

Emergency workers will be interviewed to determine their knowledge of radiation incident response procedures (i.e. exposure limits, protective clothing, KI, record keeping, etc.). Personal exposure forms will be completed by emergency workers during OOS activities and provided to FEMA evaluators upon conclusion.

Activity 2: Hazard Assessment Risk Evaluation (Definition: Assess the hazards present, evaluate the level of risk to both responders and the public, and develop an Incident Action Plan (IAP) to address the response problem.

- 2.1 OROs use a decision-making process, considering relevant factors and appropriate coordination, to insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (Sub-element 2.a., Emergency Worker Exposure Control, Criterion 2.a.1: NUREG-0654, K.4.)**

EXTENT-OF-PLAY – Demonstration will be accomplished by staff in the SEOC and RMCC

- 2.2 Appropriate protective action recommendations are based on available information including: plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions. (Sub-element 2.b., Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency, Criterion 2.b.1: NUREG-0654, I.8., 10, and Supplement 3.)**

EXTENT-OF-PLAY – Demonstration will be accomplished by staff in the SEOC, RMCC, CECC and Division of Radiological Health (DRH) personnel at the SEOC. This will be done in concert with TVA in the CECC, will perform dose assessment and independently validate dose projections. Radiological data for the field teams will be inserted by Controller injects and sent to the SEOC via the RMCC. Projections will be based on plant data provided by TVA and field radiation measurements.

- 2.3 A decision-making process involved consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy). (Sub-element 2.b., Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency, Criterion 2.b.2: NUREG, J.9, 10.M.)**

EXTENT-OF-PLAY – This criterion will be demonstrated in accordance with plans and procedures.

- 2.4 The OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. Appropriate record keeping of the administration of KI for emergency workers is maintained. (Sub-element 3.a., Implementation of Emergency Worker Exposure Control, Criterion 3.a.1: NUREG-0654, J.10.e; K.3.a, b; K.4).**

EXTENT-OF-PLAY – Emergency workers or emergency worker teams will use Self Reading Dosimeters (SRDs) or electronic dosimeters and Permanent Record Dosimeters (PRDs) to monitor and control their radiation exposure. Emergency workers in low exposure rate areas will use PRDs and may use SRDs or place them in centralized areas.

Emergency workers will be interviewed to determine their knowledge of radiation incident response procedures (i.e. exposure limits, protective clothing, dose record keeping, etc.). Personal exposure forms will be completed by emergency workers during OOS activities and provided to FEMA evaluators upon conclusion. TDEC will discuss with the FEMA evaluator how KI would be distributed to Field Monitoring teams, if necessary.

- 2.5 Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (Sub-Element**

4.a., Plume Phase Field Measurements and Analyses, **Criterion 4.a.2:** NUREG-0654, H.12; I.8, 11; J.10.a)

EXTENT-OF-PLAY – All field teams will be under the direction of the RMCC.

2.6 Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams must move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (Sub-Element 4.a., Plume Phase Field Measurements and Analyses, **Criterion 4.a.3:** NUREG-0654, I.9).

EXTENT-OF-PLAY – Four (4) field-monitoring teams will be evaluated, plus one (1) in observer/non evaluated status (45th CST). Each field team will obtain at least one air sample with a minimum sample volume of 10 cubic feet. The particulate filter and absorber media cartridge will be bagged, labeled and transported to a collection point for simulated transport to a laboratory. Field monitoring data will be injected by controllers supporting the exercise, and be transmitted by the teams to the RMCC over the normal communications network (portable hand-held/vehicle mounted radios). Cellular telephones will be utilized for back-up communications.

Activity 3: Decontamination and Cleanup/Recovery Operations (Definition: Upon arrival on-scene and with the requisite equipment, initiate response operations to reduce the level of contamination on-scene, minimize the potential for secondary contamination beyond the incident scene, and ensure an effective transition to clean-up and recovery operations.)

3.1 The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination and registration of evacuees. (Sub-element 6.a., Monitoring and Decontamination of Evacuees and Emergency Workers and Registration of Evacuees, **Criterion 6.a.1:** NUREG-0654, A.3; C.4; J.10.h; J.12)

EXTENT-OF-PLAY – All Reception Centers will be demonstrated out-of-sequence. At least six people will be monitored and registered. Personnel decontamination will be demonstrated via walk-through and discussion. All necessary supplies will be on hand. Walkways will not be entirely covered with barrier material; however, some markings will be used to aid in directing evacuees.

Demonstration will include the necessary radiological monitoring equipment and monitoring teams required to monitor 20% of the population allocated to

the facility within 12 hours. At least two vehicles will be monitored and one vehicle will be processed as contaminated. Vehicle decontamination will be discussed in accordance with local SOPs.

Reception Centers to be evaluated are:

Hamilton County:	East Ridge High School Howard School of Academics
Rhea County:	Rhea County High School

- 3.2 The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment and vehicles.** (Sub-element 6.b, Monitoring and Decontamination of Emergency Worker Equipment, **Criterion 6.b.1:** NUREG-0654, K.5.a, b)

EXTENT-OF-PLAY – Emergency Worker Monitoring and Decontamination will be demonstrated OOS. All necessary supplies will be displayed in accordance with local SOPs. Water will not be used in demonstrating personnel decontamination. Two emergency workers will be monitored. Personnel decontamination will be demonstrated via walk-through and discussion. One emergency vehicle will be monitored and decontaminated in accordance with local SOPs. Water will be used when demonstrating decontamination of the emergency vehicle.

Emergency Worker Decontamination Points to be evaluated are:

Hamilton County:	Ooltewah Middle School
Bradley County:	Prospect Elementary School

Note: Bradley County and TEMA will discuss the Shelter Information Point (SIP) and potential location.

- 3.3 The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals** (Sub-element 6.d, Transportation and Treatment of Contaminated Injured Individuals, **Criterion 6.d.1:** NUREG-0654, F.2; H.10; K.5.a, b; L.1, 4).

EXTENT-OF-PLAY – Medical Service Drills will be demonstrated OOS. EMS will demonstrate the capability to transport contaminated injured individuals to medical facilities. The medical facility will demonstrate the capability to make decisions on the need for decontamination of the individual, follow appropriate decontamination procedures, and maintain records of all survey measurements and samples taken. All activities will be

based on plans/procedures and completed as they would be in an actual emergency.

Medical Service Drills to be evaluated are:

Hamilton County:

Memorial Hospital
Parkridge Medical Center

CAPABILITY: Mass Care

Definition: Mass Care is the capability to provide immediate shelter, feeding centers, basic first aid, bulk distribution of needed items, and related services to persons affected by a large-scale incident, including special needs populations. Special needs populations include individuals with physical or mental disabilities who require medical attention or personal care beyond basic first aid. Other Access and Functional Needs populations include non-English speaking populations that may need to have information presented in other languages. The mass care capability also provides for pet care/handling through local government and appropriate animal-related organizations. Mass care is usually performed by nongovernmental organizations (NGOs), such as the American Red Cross, or by local government-sponsored volunteer efforts, such as Citizen Corps. Access and Functional Needs populations are generally the responsibility of local government, with medical needs addressed by the medical community and/or its alternate care facilities. State and Federal entities also play a role in public and environmental health by ensuring safe conditions, safe food, potable water, sanitation, clean air, etc.

Activity 1: Establish Shelter Operations (Congregate Care) (Definition: Mass Care is the capability to provide immediate shelter, feeding centers, basic first aid, bulk distribution of needed items, and related services to persons affected by a large-scale incident, including special needs populations. Special needs populations include individuals with physical or mental disabilities who require medical attention or personal care beyond basic first aid. Other Access and Functional Needs populations include non-English speaking populations that may need to have information presented in other languages. The mass care capability also provides for pet care/handling through local government and appropriate animal-related organizations. Mass care is usually performed by nongovernmental organizations (NGOs), such as the American Red Cross, or by local government-sponsored volunteer efforts, such as Citizen Corps. Access and Functional Needs populations are generally the responsibility of local government, with medical needs addressed by the medical community and/or its alternate care facilities. State and Federal entities also play a role in public and environmental health by ensuring safe conditions, safe food, potable water, sanitation, clean air, etc.)

1.1 Managers of congregate care facilities demonstrate that the centers have the resources to provide services and accommodations consistent with American Red Cross planning guidelines (found in MASS CARE Preparedness Operations, ARC 3031). Managers demonstrate the

procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (Sub-element 6.c, Temporary Care of Evacuees, **Criterion 6.c.1:** NUREG-0654, J.10.h, 12.).

EXTENT-OF-PLAY – Congregate care will be demonstrated, out-of- sequence, at the following locations (See table below). The shelter will be staffed with trained personnel, and at least six (6) monitoring demonstrations will be accomplished. Except for display of shelter barrels with inventory and proof of sealed containment of personnel shelter material such as gloves, TYVEX, etc., all key representatives for supporting agencies will discuss each activity their agency is responsible to perform. This includes (IAW the shelter diagram) security, receiving evacuees to the monitoring station (portable monitor first and then hand held), escort to decontamination (entire process), evacuee registration – including general shelter operations and communications.

Congregate Care Centers to be evaluated are:

Hamilton County:	East Ridge High School Howard School of Academics
Rhea County:	Rhea County High School

1.2 KI and appropriate instructions are available in case a decision to recommend use of KI is made. Appropriate record keeping of the administration of KI for institutionalized individuals and the general public is maintained. (Sub-element 3.b., Implementation of KI Decision, **Criterion 3.b.1:** NUREG-0654, J.10.e.f.).

EXTENT-OF-PLAY – Distribution of KI to shelters will be simulated. The ARC, county health department, and county human services staff will be available for procedural discussions with evaluators.

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