Watts Bar Nuclear Plant Exercise – June 10, 2009

Final Report - Radiological Emergency Preparedness Program

October 6, 2009

FEMA

Final Exercise Report

Watts Bar Nuclear Plant

Licensee:	**Tennessee Valley Authority**
Exercise Date:	**June 10, 2009**
Report Date:	**October 6, 2009**

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION IV

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I. EXECUTIVE SUMMARY

On June 10, 2009, 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 (EPZ) around the Watts Bar Nuclear Plant (WBN). The evaluation of out-of-sequence activities conducted prior to the exercise is included in this report. The activities included protective actions for schools in Meigs and Rhea Counties and reception and congregate care in McMinn, Roane, and Cumberland Counties.

The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of Tennessee's Multi-Jurisdictional Radiological Emergency Response Plan (MJRERP) and associated procedures. The previous, federally evaluated exercise was conducted on November 7, 2007. The qualifying emergency preparedness exercise was conducted November 15-16, 1995.

Officials and representatives from the State of Tennessee, the counties of McMinn, Meigs, Rhea, Roane and Cumberland participated in the exercise. The REP staff wishes to acknowledge the efforts of the many individuals who developed and participated in this exercise. Protecting the public health and safety is a job which is not taken lightly in the State of Tennessee. Additionally, we would like to recognize the individuals who volunteered their time and efforts to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

State and local organizations were knowledgeable of their emergency response plans and procedures and successfully implemented them. No Deficiencies were identified. One ARCA was identified during Roane County's reception and congregate care drill and was then resolved when they successfully re-demonstrated their ability to monitor and decontaminate evacuees on June 12, 2009.

The support of management within Tennessee Emergency Management Agency (TEMA) and other state and county agencies indicates the high level of importance the entire response organization places on REP exercises. This is apparent by your continuous improvement of response and capabilities. We appreciate your eagerness to work together with FEMA as a team, so that together we can strive to better protect the health and safety of Tennessee's citizens. We have included recommendations in Appendix 5 for your review and consideration that may allow you to continue to enhance your well established program.

II. INTRODUCTION

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all offsite nuclear planning and response. FEMA became a part of the Department of Homeland Security with its creation in 2002. The REP Program still conducts its activities pursuant to Title 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the REP Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

Title 44 CFR 350 establishes the policies and procedures for the REP Program's initial and continued approval of State and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local government participation in joint exercises with licensees.

FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities (FNF) include the following:

- Taking the lead in offsite emergency planning and in the review and evaluation of radiological emergency response plans (RERP) and procedures developed by State and local governments;

- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;

- Responding to requests from the Nuclear Regulatory Commission (NRC) to the REP Program pursuant to the Memorandum of Understanding between the NRC and FEMA (Federal Register, Vol. 58, No. 176, September 14, 1993).

- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:

  - Department of Agriculture
  - Department of Commerce
  - Department of Energy
  - Department of Health and Human Services
  - Department of Homeland Security
  - Department of the Interior
  - Department of Transportation
  - Environmental Protection Agency
  - Food and Drug Administration and
  - Nuclear Regulatory Commission.

Field representatives of these agencies serve on a Radiological Assistance Committee (RAC) which is chaired by FEMA.

The Tennessee MJRERP for the WBN Plant was formally submitted to FEMA by the State of Tennessee on April 12, 1996. Title 44 CFR Part 350 approval was granted by FEMA on July 3, 1997.

A REP exercise was evaluated on June 10, 2009, and included evaluations of the following out-of-sequence activities: Site Assistance Visits were conducted at all risk and host counties on March 24-25, 2009. Interviews discussing protective actions for schools were conducted at Spring City Middle School (SCMS) in Rhea County, Meigs County North Elementary School, and Meigs Middle School on March 10, 2009. Reception and congregate care drills were conducted at Central High School in McMinn County on June 3, 2009, Cumberland County High School on June 9, 2009 and at Roane State Community College on April 28, 2009 with a re-demonstration on June 12,

FEMA assessed the capabilities of State and local emergency preparedness organizations to implement their RERPs and procedures to protect the public health and safety during a radiological emergency involving the WBN Plant. This report presents the results of the exercise and findings on the performance by offsite response organizations (ORO) during a simulated radiological emergency.

The findings presented are based on the evaluations of the Federal evaluator team, with final determinations being made by the RAC Chair and final approval by the FEMA Region IV Regional Administrator.

The criteria utilized in the evaluation process are contained in:

- 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;

- FEMA “Interim Radiological Emergency Preparedness Manual,” dated August 2002.

Section III, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section contains a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities, which were evaluated, and a table presentation of the time of actual occurrence of key exercise events and activities.

Section IV, entitled "Exercise Evaluation and Results," presents summary information on the demonstration of applicable exercise criteria at each jurisdiction or functional entity evaluated in a results only format.

III. EXERCISE OVERVIEW

This section contains data and basic information relevant to the June 10, 2009 exercise and out-of-sequence activities that occurred prior to the exercise week. The purpose of the exercise was to test Federal, State and local response capabilities in the area surrounding the WBN Plant.

A. Plume EPZ Description

The plant site, consisting of approximately 1,800 acres, is located in Rhea County in southeastern Tennessee. The site is located on the west shore of the Tennessee River, approximately 50 miles north-northeast of Chattanooga, and 54 miles southwest of Knoxville. The WBN Plant is owned and operated by the Tennessee Valley Authority (TVA).

The 10-mile EPZ for the WBN Plant includes parts of McMinn, Meigs, and Rhea Counties. The land use within the 10-mile EPZ is predominately rural. The EPZ is divided into four evacuation planning quadrants. Each quadrant is subdivided into sectors.

The 50-mile ingestion pathway EPZ includes all or portions of 22 counties. The land use consists mainly of rural areas with agricultural interests. The Southwestern and Northeastern counties are mainly urban and a large national forest is included in the Eastern Sector.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the WBN Plant exercise on June 10, 2009.

STATE OF TENNESSEE

Department of Agriculture
- Division of Forestry
- Regulatory Services – Food and Dairy

Department of Environment and Conservation
- Bureau of State Parks
- Division of Air Pollution Control
- Division of Radiological Health
- Division of Solid Waste Management
- Division of Water Pollution Control

Department of General Services
Department of Health
Department of Human Services
Department of Mental Health
Department of Military

Tennessee Emergency Management Agency
Tennessee National Guard
Department of Safety
Tennessee Highway Patrol
Department of Transportation
Department of Commerce and Insurance
Department of Corrections
Department of Finance and Administration
Department of Financial Institutions
Department of Labor and Workforce Development
Department of Tourism Development
TennCare
Tennessee Board of Probation and Parole
Tennessee Bureau of Investigation
Tennessee Office of Homeland Security
Tennessee Wildlife Resources Agency

FEDERAL AGENCIES

Federal Emergency Management Agency
National Weather Service
Tennessee Valley Authority
U.S. Department of Agriculture

RISK JURISDICTIONS

McMinn County
Meigs County
Rhea County

HOST JURISDICTIONS

Cumberland County
Roane County

PRIVATE/VOLUNTEER ORGANIZATIONS

American Red Cross
AT&T
Salvation Army
Tennessee Radio Amateur
Communications Emergency Services
Verizon Wireless

C. Exercise Timeline

Table 1, on the following page, presents the times at which key events and activities occurred during the WBN Plant exercise on June 10, 2009.

Table 1. Exercise Timeline

DATE AND SITE: June 10, 2009 – Watts Bar Nuclear Plant

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken							
		SEOC	DOSE	RMCC	JIC	FCC	Mc MINN COUNTY	MEIGS COUNTY	RHEA COUNTY
Unusual Event									
Alert	0827	0836	0924	0857	--	0845	0846	0845	0848
Site Area Emergency	0953	1002	1002	1004	1005	1009	1004	1004	1003
General Emergency	1125	1135	1137	1145	1130	1134	1157	1138	1130
Simulated Rad. Release Started	0953	1017	0952	0956	0953	1033	1223	1050	N/R
Simulated Rad. Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational		0927	0927	0837	1002	0930	0837	0812	0820
Declaration of State of Emergency: State		0940	--	--	--	1245	--	--	--
Exercise Terminated		1345	1345	1350	1312	1311	1350	1307	1330
Early Precautionary Actions: Pre-stage buses		0921	--	--	0938	--	0945	0851	0917
1st Protective Action Decision Public Warning		1011	1011	--	1018	1009	1010	1018	1011
1st Siren Activation		1018	1018	--	1018	1018	1018	1018	1018
1st EAS Message		1018	1018	--	1018	1018	1018	1108	1018
2nd Protective Action Decision **Shelter Zones:** Near Site (A-1, B-1, C-1, and D-1)		1101	1101	1115	1120	1103	1108	1101	1104
2nd Siren Activation		1120	1120	1120	1120	1120	1120	1120	1120
2nd EAS Message		1120	1120	1120	1120	1120	1120	1120	1120
3rd Protective Action Decision **Evacuate Zones:** A, D, B-1, C-1 **Shelter Zones:** Remainder of B and C		1147	1147	1155	1205	1150	1150	1147	1205
3rd Siren Activation		1205	1205	1205	1205	1205	1205	1205	1205
3rd EAS Message		1205	1205	1205	1205	1205	1205	1205	1205
KI Decision: Emergency Workers to Ingest		1147	1147	0935*	1200	1200	1128	1155	1201

* RMCC Director instructed to ingest prior to departure.

IV. EXERCISE EVALUATION AND RESULTS

This section contains the results and preliminary findings of the evaluation for all jurisdictions and functional entities that participated in the exercise on June 10, 2009 and out of sequence activities before and during the exercise week. The exercise tested the emergency response capabilities of State and local governments within and around the 10-mile EPZ for the WBN Plant.

Each jurisdiction and functional entity was evaluated based on their demonstration of criteria as delineated in REP Exercise Evaluation Methodology, dated August 2002. Detailed information on the exercise criteria and the extent-of-play agreement used can be found in Appendix 3 of this report.

A. Table 2: Summary of Results of Exercise Evaluation

The matrix presented in Table 2, on the following page, presents the status of all exercise criteria that were scheduled for demonstration during this exercise, by all participating jurisdictions and functional entities. Exercise criteria are listed by number. The demonstration status of those criteria is indicated by the use of the following letters:

M - Met (No Deficiency or ARCA's assessed and no unresolved ARCA's from prior exercises)

D - Deficiency assessed

A - ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)

N - Not Demonstrated (Reason explained in Subsection B)

Table 2. Summary of Exercise Evaluation

DATE AND SITE: June 10, 2009 – Watts Bar Nuclear Plant

ELEMENT/Sub-Element	SEOC	FCC	DOSE	JIC	LP1 WIVK Radio Station	CECC	RMCC	Field Teams	McMinn County	Meigs County	Rhea County	Cumber-land County (Host)	Roane County (Host)
1. EMERGENCY OPERATIONS MANAGEMENT													
1.a.1. Mobilization	M	M	M	M		M	M	M	M	M	M		
1.b.1. Facilities		M					M						
1.c.1. Direction and Control	M	M	M			M	M		M	M	M		
1.d.1. Communications Equipment	M	M	M			M	M	M	M	M	M		
1.e.1. Equipment & Supplies to Support Operations	M	M	M	M		M	M	M	M	M	M	M	M
2. PROTECTIVE ACTION DECISION MAKING													
2.a.1. Emergency Worker Exposure Control	M		M				M		M	M	M		
2.b.1. Rad Assessment & PARs & PADs Based on Available Info			M										
2.b.2. Rad Assessment and PARs and PADs for the General Public	M		M						M	M	M		
2.c.1. Protective Action Decisions for Special Populations									M	M	M		
2.d.1. Rad Assessment & Decision Making for Ingestion Exposure													
2.e.1. Rad Assessment & Decision Making for Relocation, Re-entry & Return													
3. PROTECTIVE ACTION IMPLEMENTATION													
3.a.1. Implementation of Emergency Worker Control							M	M	M	M	M	M	M
3.b.1. Implementation of KI Decisions	M						M	M	M	M	M		
3.c.1. Implementation of PADs for Special Populations	M								M	M	M		
3.c.2. Implementation of PADs for Schools									M	M	M		
3.d.1. Implementation of Traffic and Access Control	M								M	M	M		
3.d.2. Impediments to Evacuation and Traffic and Access Control	M								M	M	M		
3.e.1. Implementation of Ingestion Decisions Using Adequate Info													
3.e.2. Implementation of IP Decisions Showing Strategies and Instructional Materials													
3.f.1. Implementation of Relocation, Re-entry and Return Decisions													
4. FIELD MEASUREMENT and ANALYSIS													
4.a.1. Plume Phase Field Measurement & Analysis Equipment								M					
4.a.2. Plume Phase Field Measurement & Analysis Management			M				M						
4.a.3. Plume Phase Field Measurements & Analysis Procedures								M					
4.b.1. Post Plume Field Measurement & Analysis													
4.b.2. Laboratory Operations													
5. EMERGENCY NOTIFICATION & PUBLIC INFO													
5.a.1. Activation of Prompt Alert and Notification	M				M				M	M	M		
5.a.2. Activation of Prompt Alert & Notification 15-Minute (Fast Breaker)													
5.a.3. Activation of Prompt Alert & Notification Backup Alert & Notification									M	M	M		
5.b.1. Emergency Info and Instructions for the Public and the Media	M			M					M	M	M		
6. SUPPORT OPERATIONS/FACILITIES													
6.a.1. Monitoring & Decon of Evacuees & EWs & Registration of Evacuees									M			M	M*
6.b.1. Monitoring and Decon of Emergency Worker Equipment													
6.c.1. Temporary Care of Evacuees									M			M	M
6.d.1. Transport and Treatment of Contaminated Injured Individuals													

LEGEND: M = Met A = ARCA D = Deficiency

*** ARCA identified and corrected through re-demonstration**

B. Status of Jurisdictions Evaluated

This subsection provides information on the evaluation of each participating jurisdiction and functional entity in a jurisdictional results based format. Presented below is a definition of the terms used in this subsection relative to Criterion demonstration status.

- **Met** - Listing of the demonstrated exercise criteria under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.

- **Deficiency** - Listing of the demonstrated exercise criterion under which one or more Deficiencies was assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.

- **Area Requiring Corrective Actions** - Listing of the demonstrated exercise criterion under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises that remain unresolved. Included is a description of the ARCA assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.

- **Not Demonstrated** - Listing of the exercise criteria, which were not demonstrated as scheduled during this exercise and the reason, they were not demonstrated.

- **Prior ARCAs - Resolved** – Description(s) of ARCA(s) assessed during previous exercises, which were resolved in this exercise and the corrective actions demonstrated.

- **Prior ARCAs - Unresolved** – Description(s) of ARCA(s) assessed during prior exercises, which were not resolved in this exercise. Included is the reason the ARCA remains unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

The following are definitions of the two types of exercise issues, which may be discussed in this report.

- A **Deficiency** is defined in the FEMA Interim REP Manual as "...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

- An **ARCA** is defined in the Interim REP Manual as "...an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

1. STATE OF TENNESSEE

1.1 State Emergency Operations Center

The State Emergency Operations Center (SEOC) staff successfully demonstrated the ability to control the emergency response to an incident at WBN Plant. Staff were briefed often and maintained situational awareness at all times. Key decisions were made in coordination with the Central Emergency Coordination Center (CECC), Field Coordination Center (FCC), Radiological Monitoring Coordination Center (RMCC), Joint Information Center (JIC), and the Emergency Management Directors in Rhea County, Meigs County, and McMinn County. The Direction and Control Officer (DACO) was very knowledgeable of the plans and procedures and with the assistance of the section chiefs, Emergency Support Functions, and other SEOC staff, he made timely and informed protective action decisions (PAD) based on current conditions.

a. **MET:** Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 3.b.1, 3.c.1, 3.d.1, 3.d.2, 5.a.1 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.2 Dose Assessment

The State of Tennessee Division of Radiological Health (DRH) dose assessment staff routinely monitored and evaluated plant, radiological, and meteorological data. Dose projections were performed and results evaluated in collaboration with the TVA Technical Advisors in the SEOC and counterparts in the TVA Central Emergency Coordination Center (CECC). The Radiation Control Officer (RCO) provided excellent direction and control of the dose assessment staff. He worked effectively with the State Chief Medical Officer on potassium iodide (KI) decisions; his counterpart in the TVA CECC, TVA Technical Advisors; and his SEOC chain of command to evaluate and assess plant and off-site radiological conditions in order to provide input into protective action decisions for the safety and health of emergency workers and the public. Professional conduct, competence and dedication were apparent in the execution of dose assessment staff responsibilities.

a. **MET:** Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2 and 4.a.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.3 Field Coordination Center

The FCC Director successfully demonstrated his ability to provide direction and control, coordination, and efficient management of response activities. The staff was meticulously briefed of the evolving situation through a series of detailed updates orchestrated by the FCC Director. The Director and staff are prepared to carry out their responsibilities to provide a back-up emergency operations capability to the SEOC, coordinate with State and Federal entities and manage and disperse incoming resources and assets. The new facility is sufficient to support those operations.

a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1 and 1.e.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.4 Radiological Monitoring Control Center

Direction and control of the Field Monitoring Teams (FMT) by the RMCC was excellent. The FMTs were managed in an efficient manner and avoided unnecessary movements. Because of the excellent positioning, the FMTs were in position to report the spike in the noble gas release. The DRH staff in the RMCC was professional and well trained. They worked well together with little unnecessary conversation and a high degree of dedication.

a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 3.a.1, 3.b.1 and 4.a.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED**:
ARCA from 2008 Sequoyah Exercise
Issue No.: 58-08-1.d.1.-A-02

Description: The primary means of communications between the RMCC and the FMTs was the Radiological Monitoring Team Radio Net on hand held radios with cell phones as backup. Both the primary and backup systems did not always function properly during the exercise. Radio dead spots and lack of cellular connectivity precluded consistent communications with the FMTs. The RMCC had to frequently request the FMTs to repeat data. At one point, the only way FMT #1 could transmit field data back to the RMCC was by using a radio that was on an Army National Guard vehicle that was there just to observe the exercise. All FMT data was eventually transmitted to the RMCC. However, the FMTs did not receive important information concerning the event from the RMCC, which included changes in emergency classification levels and that a radiological release was in progress. One team did not receive the information on the radiological release only learned of it when they entered the plume and obtained elevated readings on their instruments.

Corrective Action Demonstrated: The field team procedures identify three communications capabilities for use by deployed elements; vehicular mounted radios, hand-held radios and cell phones. The vehicular radio is the primary system and each team's vehicle had the system mounted. All three means were demonstrated without fail. In addition, the teams have been provided maps with the location of repeater stations indicated so that the teams are aware of locations in which they may encounter communications difficulties.

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.5 Radiological Field Monitoring Teams

The four Tennessee DRH FMTs successfully completed all tasks during this exercise. All team members were knowledgeable of radiological control information, including their administrative exposure and turn back dose rate values. The members also exhibited good record keeping and sampling procedures during the exercise. One team had a problem with air sampler flow rate, recognized it and consulted with the Radiological Monitoring Coordinator to successfully work through the situation. All communications available to the field teams were utilized and performed well during the exercise.

a. **MET:** Criteria 1.a.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.1 and 4.a.3

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.6 Joint Information Center

The JIC successfully demonstrated the ability to develop and distribute emergency information and instructions to the public in a timely manner. The JIC was staffed and managed by an effective public information staff. News releases were developed and distributed to the media promptly when new information became available. Media briefings were conducted in an efficient and professional manner. Media monitoring was conducted via television, radio, and the Internet. The Public Inquiry activity was conducted effectively. The JIC function was activated, organized, managed, and accomplished by a professional, dedicated staff.

a. **MET:** Criteria 1.a.1, 1.e.1 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.7 Central Emergency Control Center

The Watts Bar CECC, located in the utility operator's corporate office, Chattanooga, Tennessee, served as an excellent facility for all participating emergency response organizations to interface and manage ongoing emergency management operations.

Communication and coordination between the utility operator and State officials deployed to the Emergency Operations Facility (EOF), as well as with senior State officials at the SEOC, were outstanding. The flow of technical information within the facility was timely and accurate, thereby enhancing the ability of all responding organizations to effectively perform an independent accident analysis.

All of the State officials deployed to the CECC were well trained, knowledgeable, followed applicable procedures, and overall, performed their respective responsibilities in an efficient and professional manner.

a. **MET:** Criteria 1.a.1, 1.c.1, 1.d.1 and 1.e.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.8 Emergency Alerting System Station

WIVK, the Local Primary (LP)-1 Emergency Alerting System Station successfully demonstrated on June 10, 2009, the capability of receiving and transmitting emergency messages to the public during an emergency at the WBN Plant. The WIVK staff was knowledgeable and very professional in their conduct and execution of emergency duties.

a. **MET:** Criterion 5.a.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2. RISK JURISDICTIONS

2.1 McMINN COUNTY

2.1.1 Emergency Operations Center

The Emergency Management Agency (EMA) Director and the staff of the emergency operations center (EOC) successfully demonstrated commendable proficiency in the performance of their duties in the event of a radiological emergency. The Director provided excellent direction and control throughout the exercise, periodically briefed the EOC staff on current conditions, and fully used EOC staff expertise to implement the required emergency actions. The staff clearly demonstrated the ability to provide effective emergency response, clearly understood their responsibilities, followed their plans and procedures, and performed their assigned functions with a high level of proficiency. All participants were knowledgeable and trained in their duties. The participation of the County Mayor throughout the exercise demonstrated his dedication to

the safety of the county citizens, and his recommendations for improvement of the plans were concise and accurate.

a. **MET:** Criteria 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 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.1.2 Traffic Control Points

Personnel from the McMinn County Sheriff's Department successfully demonstrated establishing traffic control points (TCP). The Sheriff's Deputy was thoroughly familiar with his responsibilities, dosimetry and KI. He accurately described how upon notification of the need to establish a TCP he would report to the McMinn County EOC prior to dispatch, be issued a radiological kit consisting of a 0-20R direct-reading dosimeter, a personal record dosimeter (PRD), An Exposure Record Form, and doses of KI. The officer would then travel to his assigned TCP and establish a roadblock with his cruiser, equipped with appropriate warning equipment. Equipment and supplies were sufficient to implement effective emergency operations.

a. **MET:** Criteria 3.d.1 and 3.d.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.1.3 Backup Route Alerting

A Sergeant from the McMinn County Sheriff's Department and the county radiological officer demonstrated activities associated with backup route alerting. The Sergeant was well-versed in personal radiological protective measures and the requirements of his operational mission. He traversed his assigned sector in a safe manner and completed his

assignment well within the allotted time. He was prepared to broaden the scope of his mission if contingencies required it.

a. **MET:** Criteria 1.d.1, 1.e.1, 3.a.1, 3.b.1 and 5.a.3

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.1.4 Reception and Congregate Care Center

McMinn County demonstrated its reception and congregate care on June 3, 2009 at Central High School in Englewood, Tennessee. Each emergency worker was equipped with a pocket dosimeter, TLD, KI and instructions for their use. Monitoring and decontamination was demonstrated in a professional and competent manner. The facility is well equipped to support sheltering of evacuees and the American Red Cross (ARC) is well trained to support the overwhelming needs of evacuees. All of the staff were familiar with plans and procedures and successfully demonstrated their ability to monitor, decontaminate, and shelter evacuees.

a. **MET:** Criteria 1.e.1, 3.a.1, 6.a.1 and 6.c.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2 MEIGS COUNTY

2.2.1 Emergency Operations Center

The EMA Director and his staff clearly demonstrated the ability to provide effective and focused emergency response to a simulated incident at the WBN Plant. The EOC staff was composed of county and volunteer agencies who worked together as a highly

effective team to protect public safety. They clearly understood their responsibilities, followed their plans proactively, and performed their assigned functions with a high level of proficiency. The Director provided effective leadership of the EOC staff, emphasizing at all times the importance of protecting both the general public and emergency workers.

a. **MET:** Criteria 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 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2.2 Traffic Control Points

The Superintendent of Meigs County Highway Department successfully demonstrated TCPs through interview and scenario inject. He was thoroughly familiar with county responsibilities and duties. Equipment and supplies were sufficient to implement effective emergency operations.

a. **MET:** Criteria 3.d.1 and 3.d.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2.3 River Clearance

The Tennessee Wildlife Resources Agency (TWRA) successfully demonstrated their capability to clear the river of boaters in the event of an emergency. Notifications were made expeditiously using pre-printed material. TWRA personnel also demonstrated appropriate use of the dosimetry.

a. **MET:** Criteria 1.a.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1 and 5.a.3

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2.4 Protective Actions for Schools

Interviews were conducted with principals from Meigs North Elementary School and Meigs Middle School. Both principals demonstrated familiarity with plans and resources needed to relocate children from the emergency planning zone. The county emergency manager and school superintendent were present for the interview and expressed their full support of prioritization of the children.

a. **MET:** Criterion 3.c.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.3 RHEA COUNTY

2.3.1 Emergency Operations Center

The Director of the Rhea County EMA (Director) provided overall command and control throughout the exercise. The Director and EOC staff effectively and efficiently used a manual handwritten message system to transmit and track tasks and missions within the EOC. The Director held briefings and polled the staff to review ongoing tasks and encouraged them to be proactive in their actions. All staff personnel were knowledgeable of their tasks and duties and had plans available at their work stations. Many times the staff had already notified support groups and mobilized equipment and personnel in anticipation of potential needs. The Director participated with the State and other counties on calls to implement PADs. Overall the Director and EOC staff acted professionally and competently in completing their tasks and protecting the citizens of Rhea County.

a. **MET:** Criteria 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 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:**

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.3.2 Traffic Control Points

Representatives of the Rhea County Sheriff's Department, City of Dayton Police Department, and the County Department of Public Works demonstrated traffic and access control by interview. The officers were trained on personal dosimetry; call back values/turn back values and the use of KI. They were well versed in their responsibilities in establishing and maintaining TCPs. The Department of Public Works would assist in removal of impediments in support of law enforcement and the representative was conversant with his agency's capabilities.

a. **MET:** Criteria 3.d.1 and 3.d.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.3.3 Protective Actions for Schools

An interview was conducted at Spring City Middle School with a teacher designated as third in succession after the principle and vice principle on March 10, 2009. She was familiar with plans and procedures to implement protective actions for the students. With assistance from the School Superintendent, School Resource Officer, and school staff, the students at SCMS will be promptly relocated in an orderly and safe manner.

a. **MET:** Criterion 3.c.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

3. HOST JURISDICTIONS

3.1 CUMBERLAND COUNTY

3.1.1 Reception and Congregate Care Center

The monitoring, decontamination, registration and temporary care of evacuees was demonstrated, out of sequence at the Cumberland County High School in Crossville, Tennessee. The Cumberland County EMA and Health Department staff provided monitoring and simulated decontamination of seven volunteers. The participants paid great attention to detail allowing for realism during the exercise. Proper contamination control and monitoring procedures were demonstrated. Registration was completed by the Cumberland County Chapter of the ARC. The ARC demonstrated expertise in the reception and care for potential evacuees.

a. **MET:** Criteria 1.e.1, 3.a.1, 6.a.1 and 6.c.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

3.2 ROANE COUNTY

3.2.1 Reception and Congregate Care Center

Roane County demonstrated a minimal response for the out of sequence shelter drill at the Roane Community College on April 28, 2009. Real world events and exercise fatigue were the stated reasons for a sub-standard demonstration. The Roane County Emergency Services Director has a working knowledge of the plans, practices, and procedures associated with shelter and congregate care, they simply were not demonstrated.

The ARC and the Roane County Health Department successfully demonstrated the ability to provide services and accommodations for evacuees. The Staff and volunteers were well trained, polite and helpful. They were familiar with the necessary forms, facilities, available services, and precautionary measures needed for potentially contaminated evacuees.

On June 12, 2009 Roane County successfully re-demonstrated monitoring and decontamination of evacuees and the ARCA was corrected.

a. **MET:** Criteria 1.e.1, 3.a.1, 6.a.1 and 6.c.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** 6.a.1

Issue No: 71-09-6.a.1-A-01

Condition: There was no use of signs or barricades to direct traffic and people. There were no measures taken to minimize cross contamination. There was no use of personal protective equipment, ineffective use of personnel, rapid frisking of evacuees and poor decontamination practices. Additionally, there was no attempt to monitor and identify contaminated vehicles, or to setup and follow their local procedures.

Possible Cause: Real world events and exercise fatigue were the stated reasons for a sub-standard demonstration. Roane county staff were familiar with plans and procedures, they simply were not demonstrated.

Reference: NUREG-0654, J.10.h; J.12; K.5.a

Effect: Undue delay in opening the shelter would possibly be the result from misuse of personnel. The possibility of cross contamination among evacuees and emergency workers is increased with no use of personal protective equipment and improper monitoring practices. Decontamination practices could create unnecessary uncomfortable conditions for evacuees.

Recommendation: Effective use of an assistant or deputy may eliminate undue delay in opening the shelter and processing evacuees. Access to shelter related equipment should be available to multiple emergency workers.

Efforts to minimize cross contamination and adequate crowd control should be increased to include such practices as designated and marked walkways and paper lined walkways. Proper personal protective equipment should be utilized by emergency workers and monitoring of evacuees should be conducted in accordance with the plan.

If contamination is found on someone's shoe, it may be easier to remove the shoe and re-monitor rather than remove all of their clothes and decontaminate the entire body. The same goes for hands and face. Just wash the contaminated area and avoid a full decon. This method will be less time and resource intensive. There should also be someone in the decontamination tent available to assist evacuees with the water hoses, soap, and decontamination procedures. Someone would be needed especially for non ambulatory citizens or small children.

Schedule of Corrective Actions: Corrected on June 12, 2009 with a re-demonstration.

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: 6.a.1
ARCA Re-demonstration same year
Issue No: 71-09-6.a.1-A-01

Corrective Action: Roane County emergency personnel successfully demonstrated monitoring and decontamination of evacuees in support of the Watts Bar Nuclear Plant exercise, during an out-of-sequence event, on June 12, 2009. The demonstration was conducted at the Roane County State Community College in Harriman, Tennessee. Pathways were marked with cones and personnel were also available to direct evacuees. Sufficient equipment and personnel were available to provide assurance that 20% of the population could be processed in a 12-hour period. Good contamination control techniques were displayed and all personnel were aware of their exposure limits and action levels. All personnel wore proper Personal Protective Equipment and conducted their assigned tasks in a manner to prevent cross contamination. Personnel assigned to monitoring tasks demonstrated proper monitoring techniques and were aware of action levels. Personnel were stationed inside of the decontamination tent to instruct evacuees in proper decontamination methods and provide re-monitoring. There was more than sufficient space to quarantine evacuee vehicles until additional personnel were available to perform the monitoring in accordance with their plans.

f. PRIOR ARCAs - UNRESOLVED: NONE

4. SUMMARY OF AREAS REQUIRING CORRECIVE ACTION

4.1 2009 ARCAs

4.1.1 71-09-6.a.1-A-01 Roane County Reception and Congregate Care

Condition: There was no use of signs or barricades to direct traffic and people. There were no measures taken to minimize cross contamination. There was no use of personal protective equipment, ineffective use of personnel, rapid frisking of evacuees and poor decontamination practices. Additionally, there was no attempt to monitor and identify contaminated vehicles, or to setup and follow their local procedures.

Possible Cause: Real world events and exercise fatigue were the stated reasons for a sub-standard demonstration. Roane county staff were familiar with plans and procedures, they simply were not demonstrated.

Reference: NUREG-0654, J.10.h; J.12; K.5.a

Effect: Undue delay in opening the shelter would possibly be the result from misuse of personnel. The possibility of cross contamination among evacuees and emergency workers is increased with no use of personal protective equipment and improper monitoring practices. Decontamination practices could create unnecessary uncomfortable conditions for evacuees.

Recommendation: Effective use of an assistant or deputy may eliminate undue delay in opening the shelter and processing evacuees. Access to shelter related equipment should be available to multiple emergency workers.

Efforts to minimize cross contamination and adequate crowd control should be increased to include such practices as designated and

marked walkways and paper lined walkways. Proper Personal Protective Equipment should be utilized by emergency workers and monitoring of evacuees should be conducted in accordance with the plan.

If contamination is found on someone's shoe, it may be easier to remove the shoe and re-monitor rather than remove all of their clothes and decontaminate the entire body. The same goes for hands and face. Just wash the contaminated area and avoid a full decon. This method will be less time and resource intensive. There should also be someone in the decontamination tent available to assist evacuees with the water hoses, soap, and decontamination procedures. Someone would be needed especially for non ambulatory citizens or small children.

Schedule of Corrective Actions: Corrected on June 12, 2009 with a re-demonstration.

Corrective Action: Roane County emergency personnel successfully demonstrated monitoring and decontamination of evacuees in support of the Watts Bar Nuclear Plant exercise, during an out-of-sequence event, on June 12, 2009. The demonstration was conducted at the Roane County State Community College in Harriman, Tennessee. Pathways were marked with cones and personnel were also available to direct evacuees. Sufficient equipment and personnel were available to provide assurance that 20% of the population could be processed in a 12-hour period. Good contamination control techniques were displayed and all personnel were aware of their exposure limits and action levels. All personnel wore proper PPE and conducted their assigned tasks in a manner to prevent cross contamination. Personnel assigned to monitoring tasks demonstrated proper monitoring techniques

and were aware of action levels. Personnel were stationed inside of the decontamination tent to instruct evacuees in proper decontamination methods and provide re-monitoring. There was more than sufficient space to quarantine evacuee vehicles until additional personnel were available to perform the monitoring in accordance with their plans.

4.2 PRIOR ARCAs RESOLVED

ARCA from 2008 Sequoyah Exercise

4.2.1 58-08-1.d.1-A-02 Radiological Monitoring and Coordination Center

Description: The primary means of communications between the RMCC and the FMTs was the Radiological Monitoring Team Radio Net on hand held radios with cell phones as backup. Both the primary and backup systems did not always function properly during the exercise. Radio dead spots and lack of cellular connectivity precluded consistent communications with the FMTs. The RMCC had to frequently request the FMTs to repeat data. At one point, the only way FMT #1 could transmit field data back to the RMCC was by using a radio that was on an Army National Guard vehicle that was there just to observe the exercise. All FMT data was eventually transmitted to the RMCC. However, the FMTs did not receive important information concerning the event from the RMCC, which included changes in emergency classification levels and that a radiological release was in progress. One team did not receive the information on the radiological release only learned of it when they entered the plume and obtained elevated readings on their instruments.

Corrective Action Demonstrated: The field team procedures identify three communications capabilities for use by deployed elements; vehicular mounted radios, hand-held radios and cell phones. The vehicular radio is the primary system and each team's vehicle had the system

mounted. All three means were demonstrated without fail. In addition, the teams have been provided maps with the location of repeater stations indicated so that the teams are aware of locations in which they may encounter communications difficulties.

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

The following is a list of the acronyms and abbreviations, which may have been used in this report.

ARC	American Red Cross
ARCA	Area Requiring Corrective Action
CECC	Central Emergency Coordination Center
CECC	Crisis Emergency Control Center
CFR	Code of Federal Regulations
DACO	Direction and Control Officer
DHHS	Department of Health and Human Services
DHS	Department of Homeland Security
DIL	Derived Intervention Levels
DOC	Department of Commerce
DOE	Department of Energy
DOI	Department of the Interior
DOT	Department of Transportation
DRD	Direct Reading Dosimeter
DRH	Division of Radiological Health
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ESC	Emergency Services Coordinator
ESF	Emergency Support Function
EWD	Emergency Worker Decontamination
FAA	Federal Aviation Administration
FCC	Field Coordination Center
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FNF	Fixed Nuclear Facility
FR	Federal Register
GE	General Emergency

ICF	ICF Consulting, Inc.
JIC	Joint Information Center
KI	Potassium Iodide
MJRERP	Multi-Jurisdictional Radiological Emergency Response Plan
mR	milliroentgen
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*
OO	Operations Officer
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PIO	Public Information Officer
PNS	Public Notification System
PPE	Personal Protective Equipment
R	Roentgen
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RCCC	Reception and Congregate Care Center(s)
RCO	Radiation Control Officer
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RMCC	Radiological Monitoring Control Center
RSVP	Retired Senior Volunteer Program
SCMS	Spring City Middle School
SEID	State Emergency Information Director
SEOC	State Emergency Operations Center
SIP	Shelter Information Point
TCP	Traffic Control Point
TEMA	Tennessee Emergency Management Agency
TLD	Thermoluminescent Dosimeter
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resource Agency
USDA	U.S. Department of Agriculture
WBN	Watts Bar Nuclear Plant

APPENDIX 2

EXERCISE EVALUATORS

The following is a list of the personnel who evaluated the WBN Plant exercise on June 10, 2009. The organization represented by each evaluator is indicated by the following abbreviations:

FEMA	- Federal Emergency Management Agency
ICF	- ICF Incorporated
NRC	- Nuclear Regulatory Commission

Conrad S. Burnside	**RAC Chairman**
Kevin R. Keyes	**Section Chief/ Northern Tier**

EVALUATION SITE	EVALUATOR	ORGANIZATION
Lead Evaluator	Matthew Bradley	FEMA
STATE OF TENNESSEE		
SEOC	Matthew Bradley	FEMA
	Alex Sera	FEMA
	Rodger Jobe	ICF
RMCC	Bernie Hannah	ICF
Field Coordination Center	Gerald Mclemore	FEMA
Dose Assessment	Brad McRee	ICF
Radiological FMTs	Paul Cormier	ICF
	Bart Ray	ICF
	Gary Snodgrass	ICF
	Dave Stuenkel	ICF
Joint Information Center	Deborah Bell	ICF
	Frank Cordaro	ICF
Radio Station WIVK	Daniel Inman	ICF
Central Emergency Control Center	Robert Trojanowski	NRC

MCMINN COUNTY

Emergency Operations Center	Mike Dolder Don Calsyn	FEMA ICF
Traffic Control Points	Don Calsyn	ICF
Back Up Route Alerting	Bill Larrabee	ICF
Reception and Congregate Care	Matthew Bradley Helen Wilgus	FEMA FEMA

MEIGS COUNTY

Emergency Operations Center	Obhie Robinson Patrick Taylor	FEMA ICF
Traffic Control Points	Patrick Taylor	ICF
River Clearing	John Ackerman	FEMA
Protective Actions for Schools	Matthew Bradley	FEMA

RHEA COUNTY

Emergency Operations Center	Joe Harworth William McCance	FEMA ICF
Traffic Control Points	William McCance	ICF
Protective Actions for Schools	Matthew Bradley	FEMA

ROANE COUNTY

Reception and Congregate Care	Joe Harworth Bart Ray	FEMA ICF

CUMBERLAND COUNTY

Reception and Congregate Care	Bart Ray Daniel Inman	ICF ICF

APPENDIX 3

EXERCISE CRITERIA AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise criteria, which were scheduled for demonstration in the Watts Bar Nuclear Plant exercise on June 10, 2009 and the extent-of-play agreement approved by FEMA. Extent of Play will be supplied in the Final Report.

A. Exercise Criteria

The specific radiological emergency preparedness criteria, which were to be demonstrated, have been consolidated with the extent-of-play for this event and are explained in Subsection B.

B. Extent-of-Play Agreement

The extent-of-play agreement was submitted by the State of Tennessee and approved by FEMA. The extent-of-play agreement includes any significant modification or change in the level of demonstration of each exercise criterion listed as referred to in Subsection A of this appendix.

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events (Exercise Scenario), which was used as the basis for invoking emergency response actions by OROs in the Watts Bar Nuclear Plant exercise on June 10, 2009.

This exercise scenario was submitted by the State of Tennessee and TVA, and approved by FEMA. Scenario will be supplied in Final Report.

APPENDIX 5

RECOMMENDATIONS

RECOMMENDATIONS FOR IMPROVEMENT:

TENNESSEE FIELD MONITORING TEAM 4

It is recommended that acceptance ranges for field monitoring team instruments be established using check sources included in the field kits to allow field teams to perform full operability checks in the field.

EMERGENCY ALERT SYSTEM STATION LP-1 WIVK

The State, in conjunction with the primary LP-1 station management, needs to develop, and incorporate into its plans, protocols for providing guidance to the station on frequency of repeated airing of messages and prioritization when multiple messages are used.

McMINN COUNTY EMERGENCY OPERATIONS CENTER

1. A recommendation is made to update the Tennessee Multi-Jurisdictional Radiological Emergency Response Plan pre-scripted Emergency Alert System (EAS) messages released by the State EOC. Currently the EAS messages refer to the roads in McMinn County by name. However, all the county and state roads were numbered approximately 15 years ago, and the majority of the county citizens refer to the assigned numbers rather than the names. Updating the messages to use the numbers will help avoid any possible confusion by county residents.

2. A recommendation is made to develop a checklist that can be used to perform the radiological briefing. The topics to be covered in the brief should include: 1) The use and purpose of the direct-reading dosimeters in the kits (including use of the CDV-750 charger), zeroing, frequency of readings while in the field, and the importance of entering the data on the daily exposure record card; 2) disposition of the thermoluminescent dosimeter (TLD) after completion of an assignment; and 3) the purpose and use of KI. This would provide consistency in the information provided to the emergency workers.

McMINN COUNTY RECEPTION AND CONGREGATE CARE CENTER

1. Signs may be a useful addition to the shelter. Although staff is on hand to assist folks, this would be a stressful and confusing experience. For example, the corridor leading to the decontamination areas is split down the middle separating clean from contaminated pathways. The red tape clearly separates the hall, but the contaminated victim in the drill crossed the line several times despite his escort telling him to stay on the left side of the line. Signs here indicating contaminated and non contaminated may help.

2. If extra personnel may be required to monitor the expected number of evacuees in a timely manner, they should be coordinated and allocated in advance and listed in the plan.

RHEA COUNTY EMERGENCY OPERATIONS CENTER

1. EAS message #7 did not include all of the schools in Rhea County that were evacuated. The State needs to review all EAS messages and insure they include any new schools, or other institutions.

2. Documents available in the EOC for all agencies to use are compiled and updated by TEMA. The Director said TEMA has updated the documents, but the date on the Cover page is dated 1995. It is recommended that TEMA review all SOPs in the counties and insure they have been updated and provide a cover page that reflects the last time they were reviewed.