Wolf Creek Generating Station

After Action Report/ Improvement Plan

Drill Date - September 22, 2010

Radiological Emergency Preparedness (REP) Program

FEMA

Published October 29, 2010

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EXECUTIVE SUMMARY

On September 22, 2010, the Federal Emergency Management Agency (FEMA) evaluated a medical services drill in the plume exposure pathway emergency planning zone (EPZ) around the Wolf Creek Generating Station (WCGS). The purpose of the medical services drill was to assess the ability of offsite agencies in responding to a radiological emergency involving a simulated medical injury to a person with radiological contamination. These events were held in accordance with FEMA policies and guidance concerning the exercise of State and local radiological emergency response plans and procedures.

The previous medical drills at this site was conducted on September 30, 2008. The qualifying emergency preparedness exercise was conducted on November 7, 1984.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this drill including the State of Kansas, and the risk jurisdiction of Coffey County. The efforts of the utility should also be commended for their work on the scenario development and medical drill preparation.

Protecting the public health and safety is the full-time job of some of the medical drill participants and an additional assigned responsibility for others. Still, others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this medical drill.

The State and local organizations demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies or Areas Requiring Corrective Action (ARCAs) identified as a result of this medical drill. There were no Previous ARCAs to be corrected during this medical drill from 2008.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Wolf Creek Generating Station

Type of Exercise
Drill

Exercise Date
September 22, 2010

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 Wolf Creek Generating Station drill:

- State Jurisdictions
  - Kansas Department of Health & Environment
- Risk Jurisdictions
  - Coffey County Emergency Medical Services
  - Coffey County Hospital

Coffey County Radiological Officer

Private Organizations

Wolf Creek Nuclear Operating Corporation

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The purpose of the exercises and drills conducted in association with the Wolf Creek Nuclear Operating Corporation (WCNOC) is to test and provide the opportunity to evaluate emergency plans, associated implementing procedures, facilities, and equipment of the emergency responders and supporting entities in the communities in the immediate vicinity of the Wolf Creek Generating Station(WCGS), specifically within the 10-mile emergency planning zone (EPZ).

Further, these exercises and drills test the WCGS emergency response community's ability to assess and respond to emergency conditions and coordinate efforts with other agencies for protection of the health and safety of the public.

The conduct and evaluation of these exercises and drills provide additional training for emergency response organization personnel as a means to enhance WCGS emergency response capability. The purpose of this particular medical services drill was to activate and evaluate portions of the Coffey County Emergency Plans, and associated implementing procedures, in accordance with 44CFR350.

The scenarios for the medical services drill were developed by personnel of the Wolf Creek Nuclear Operating Corporation, then were reviewed and approved for use by FEMA Region 7. The scenarios were utilized by the exercise controllers and evaluators as the control mechanism for the conduct of the drills.

The scenario for the drill at Coffey County Hospital was designed to depict a simulated accident at WCGS in which a worker was injured and potentially contaminated. A second scenario for the off-site Coffey County Emergency drill depicted a sequence of events during a radiological accident simulation at WCGS, located in Coffey County, Kansas. The scenario results in the need for the assessment and care of an injured and potentially contaminated victim.

The scenario design provided the basis to observe and evaluate the capabilities and effectiveness of the Emergency Response Plans for Coffey County Emergency Medical Services and the Coffey County Hospital.

2.2 Exercise Objectives, Capabilities and Activities

The Wolf Creek Nuclear Operating Corporation (WCNOC) Emergency Preparedness Exercise & Drill Program objectives are based on the Federal requirements delineated in 44 CFR 350, as well as on the priorities and procedures detailed in the Radiological Emergency Preparedness plans for the State of Kansas and Coffey County, Kansas. Additional guidance provided in NUREG-0654, NUREG-0696, and NUREG-0737, was utilized in developing these objectives.

Wolf Creek Generating Station (WCGS) emergency plan describes WCGS's capability to respond effectively to a radiological emergency at the site, and provides a detailed description of WCNOC's interaction with Federal, State, and local government agencies and private organizations. The emergency plan provides for continuous emergency preparedness including the conduct of an annual exercise and preparatory drills.

The objective of this medical services drill was to test the implementation of the plans and procedures of the participating agencies, and the capability of these agencies to conduct operations in accordance with these plans. This objective is further defined by the criteria evaluated for each participant. These criteria are listed in Table 3.1.

The medical services drill was designed to allow Coffey County Emergency Medical Services (EMS) and Coffey County Hospital to: demonstrate the ability to initiate and maintain emergency worker exposure control, show control and treatment of contamination in patients, and illustrate the adequacy of vehicles, equipment and personnel for transporting and treating contaminated patients. Both the ambulance service and the hospital were evaluated based upon the plans and procedures which they have established for use in a radiological emergency.

This drill was performed out-of-sequence, which is not concurrent to a full scale exercise or in synchronized time with other sites. To compensate for the artificiality of an out-of-sequence drill, the activities for each evaluation accepted simulation of some tasks. This allowed for the evaluator to focus on the activities specified in the drill criteria, which are usually those least familiar to the exercise players. None of the simulations compromised the ability to demonstrate and evaluate the objective of the drill.

2.3 Scenario Summary

The scenario utilized for the Coffey County Hospital medical services drill stemmed from an employee accident at Wolf Creek Generating Station (WCGS): A WCGS employee, diabetic, begins to feel weak and lightheaded while working on the 1988 level of the Auxiliary Building. Earlier, she commented to her co-worker that she felt light-headed. When the diabetic woman begins to lose consciousness, she falls, hits her head on the Radiological Waste Storage Tank (RWST) pipe causing a contusion to her forehead. She then slumps over on the floor, semi-conscious and confused. Due to the location of the fall, there is a high risk that the employee could be contaminated.

A separate scenario was used for the Coffey County Ambulance medical services drill: A 40 year old female is evacuating her Coffey County residence with her sister due to a radioactive release at WCGS. The 40 year old female begins to feel dizzy and ill, so her sister stops the car at the Burlington Fire Station. As they exited the vehicle, the 40 year old female suddenly falls. She lands hard on the ground but her sister managed to prevent her head from hitting the ground. The sister immediately called 9-1-1. When EMS arrives, the patient is barely conscious and very confused. The patient has bloating around her wrists and ankles. Her skin is pale.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Drill Evaluation and Results

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities which participated in the September 22, 2010 out-of-sequence medical services drill. The drill events tested the offsite emergency response capabilities of State and local governments within the 10-mile EPZ surrounding the Wolf Creek Generating Station.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of the criteria contained in the exercise evaluation areas delineated in Emergency Preparedness: Exercise Evaluation Methodology as printed in the Federal Register September 12, 2001 and April 25, 2002.

3.2 Summary Results of Drill Evaluation

The matrix presented in Table 1, on the following pages, presents the status of all exercise criteria, which were scheduled for demonstration during these Medical Services Drills, at all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status of those criteria is indicated by the use of the following letters:

M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)
D - Deficiency assessed
A - Area Requiring Corrective Action (ARCA) assessed or unresolved ARCA(s) from prior exercises)
N - Not Demonstrated (Reason explained in subsection B)

Table 3.1 - Summary of Drill Evaluation

DATE: 2010-09-22 SITE: Wolf Creek Generating Station, KS M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Coffey County Amb.	Coffey County Hospital
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications Equipment	1d1		
Equip & Supplies to support operations	1e1	M	M
Protective Action Decision Making			
Emergency Worker Exposure Control	2a1		
Radiological Assessment and PARs	2b1		
Decisions for the Plume Phase -PADs	2b2		
PADs for protection of special populations	2c1		
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1		
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1		
Protective Action Implementation			
Implementation of emergency worker exposure control	3a1	M	M
Implementation of KI decision	3b1	M	M
Implementation of protective actions for special populations - EOCs	3c1		
Implementation of protective actions for Schools	3c2		
Implementation of traffic and access control	3d1		
Impediments to evacuation are identified and resolved	3d2		
Implementation of ingestion pathway decisions - availability/use of info	3e1		
Materials for Ingestion Pathway PADs are available	3e2		
Implementation of relocation, re-entry, and return decisions.	3f1		
Field Measurement and Analysis			
Adequate Equipment for Plume Phase Field Measurements	4a1		
Field Teams obtain sufficient information	4a2		
Field Teams Manage Sample Collection Appropriately	4a3		
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		
Activation of the prompt alert and notification system - Fast Breaker	5a2		
Activation of the prompt alert and notification system - Exception areas	5a3		
Emergency information and instructions for the public and the media	5b1		
Support Operations/Facilities			
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1		
Mon / decon of emergency worker equipment	6b1		
Temporary care of evacuees	6c1		
Transportation and treatment of contaminated injured individuals	6d1	M	M

3.3 Criteria Evaluation Summaries

3.3.1 Risk Jurisdictions

3.3.1.1 Coffey County Ambulance

These criteria were demonstrated by the Emergency Medical Services in Burlington, KS. The Coffey County Emergency Medical Services (EMS) team showed a high level of competence in both the treatment of patient injuries and management of contamination. The EMS team was well equipped and personnel demonstrated uses of material and methods needed to provide the appropriate patient care.

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.d.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 Coffey County Hospital

These criteria were demonstrated by the Coffey County Hospital Staff in Burlington, Kansas. The Coffey County Hospital staff was well trained and equipped to treat the patient's injuries and manage contamination. The Hospital staff maintained a positive attitude and worked very effectively as a team, helping each other when the situation warranted.

It was recommended that a formal briefing be performed for emergency workers prior to patient arrival. Although each worker was informally briefed and have available job aid sheets, a formal briefing would allow for important information to be communicated to all workers. Such a briefing would include: current patient and radiological conditions, a review of exposure limits, dosimetry reading, delegated staff duties, any special circumstances or instructions.

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.d.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

SECTION 4: CONCLUSION

Based on the results of the September 22, 2010 medical services drill, the offsite radiological emergency response plans and preparedness, the State of Kansas and the affected local jurisdictions are deemed adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public in the event of a radiological emergency. Therefore, 44 CFR Part 350 approval of the offsite radiological emergency response plans and preparedness for the State of Kansas, site-specific to the Wolf Creek Generating Station, will remain in effect.

APPENDIX A: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2010-09-22, SITE: Wolf Creek Generating Station, KS

LOCATION	EVALUATOR	AGENCY
Coffey County Ambulance	*David Jacobson	ICF
Coffey County Hospital	*David Jacobson	ICF
* Team Leader		

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