Medical Drill
&
Reception Center Exercise Report

Wolf Creek Generating Station

Licensee:	**Wolf Creek Nuclear Operating Corporation**
Exercise Date:	**September 23, 2003**
Report Date:	**November 7, 2003**

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION VII
2323 GRAND BLVD., SUITE 900
KANSAS CITY, MISSOURI 64108-2670

RICHARD HAINJE, REGIONAL DIRECTOR

Table of Contents

I. EXECUTIVE SUMMARY.....2

II. DRILL/EXERCISE EVALUATION AND RESULTS.....3

1. MEDICAL DRILL.....5

1.1 Coffey County Hospital.....5
1.2 Coffey County Ambulance.....5

2. RECEPTION CENTER EXERCISE.....6

2.1 Anderson County Reception Center.....6

2.2 Anderson County Congregate Care.....7
Garnett USD 365 Junior/Senior High School and Garnett Elementary School

List of Appendices

Appendix 1 - Exercise Evaluators and Team Leaders.....8

Appendix 2 – Exercise Criteria and Extent of Play Agreement.....9

I. EXECUTIVE SUMMARY

On September 23, 2003, the Federal Emergency Management Agency (FEMA), Region VII, conducted a medical drill and reception center exercise in the plume emergency-planning zone (EPZ) around the Wolf Creek Generating Station. The purpose of the events was to assess the level of State and local preparedness in responding to a radiological emergency. The medical drill and reception center exercise were held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans and procedures.

The previous drill or exercise for Coffey County Hospital, Coffey County Ambulance, and the Anderson County Reception Center was conducted on February 25, 1997.

The qualifying emergency preparedness exercise for this Generating Station was conducted on November 7, 1984.

FEMA wishes to acknowledge the efforts of the many individuals who participated in these evaluated activities. In the State of Kansas, the risk county of Coffey and the host county of Anderson participated. The efforts of the State and utility should also be commended for their work on training and exercise preparation.

Protecting the public health and safety is the full-time job of some of the exercise 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. A special thank you is once again extended to those wonderful volunteers. Cooperation and teamwork of all the participants were evident during the drill and exercise.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. No Areas Requiring Corrective Action (ARCAs) or Deficiencies were identified as a result of the medical drill. One ARCA was identified at the Anderson County Reception Center. However, on-the spot training was provided to the exercise participants and the ARCA was immediately corrected.

The following evaluation areas contained in FEMA's Exercise Evaluation Methodology were demonstrated during the drill and exercise.

Evaluation Area 1: Emergency Operations Management

Evaluation Area 3: Protective Action Implementation

Evaluation Area 6: Support Operation/Facilities

II. DRILL/EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities that participated in the September 23, 2003, medical drill and reception center exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Wolf Creek Generating Station.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria contained in exercise evaluation areas delineated in Emergency Preparedness Exercise Evaluation Methodology as printed in the Federal Register September 12, 2001 and April 29, 2002. Detailed information on the exercise criteria and the extent-of-play agreement for this drill and exercise is found in Appendix 2 of this report.

This subsection provides information on the evaluation of each participating jurisdiction and functional entity, in a jurisdiction based, issues only format. Presented below is a definition of the terms used in this subsection relative to criteria 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 or drills remain unresolved.

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

Area Requiring Corrective Actions (ARCA) - Listing of the demonstrated exercise criteria under which one or more ARCAs were assessed during the current exercise. Included is a description of the ARCA(s) 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 of ARCAs assessed during previous exercises, which were resolved in this exercise, and the corrective actions demonstrated.

Prior ARCAs - Unresolved - Descriptions of ARCAs assessed during prior exercises, which were not resolved in this exercise. Included is the reason the ARCAs remain 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 are discussed in this report.

* A **Deficiency** is defined by FEMA 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 by FEMA 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."

FEMA has developed a standardized system for numbering exercise issues (Deficiencies and ARCAs). This system is used to achieve consistency in numbering exercise issues between FEMA Regions and site-specific exercise reports within each Region. It is also used to expedite tracking of exercise issues on a nationwide basis.

The identifying number for Deficiencies and ARCAs includes the following elements, with each element separated by a hyphen (-).

* **Plant Site Identifier** - A three-digit number corresponding to the Utility Billable Plant Site Codes.

* **Exercise Year** - The four digits of the year the exercise was conducted.

* **Criterion Number** - A three-digit number corresponding to the criteria numbers in FEMA Exercise Evaluation Areas.

* **Issue Classification Identifier** - (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.

* **Exercise Issue Identification Number** - A separate two (or three) digit indexing number assigned to each issue identified in the exercise.

1. MEDICAL DRILL

1.1 Coffey County Hospital

The Coffey County Hospital is located in Burlington, Kansas. The hospital was well equipped to deal with the treatment of a radiological contaminated injured individual. The participating hospital staff included the Emergency Room (ER) Supervisor, two ER nurses, a Nurse Practitioner, a Buffer Nurse, a Hospital Technician (monitor), security personnel, and maintenance personnel. The Radiological Emergency Area (REA) was appropriately setup for treatment of the simulated accident victim. All REA staff demonstrated excellent contamination control procedures throughout the drill. The Hospital Technician demonstrated excellent monitoring techniques.

a. **MET:** Criteria 1e1, 3a1, 3b1, 6d1

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 Coffey County Ambulance

The Coffey County Ambulance Service is located at the Coffey County Hospital in Burlington, Kansas. The crew demonstrated sufficient knowledge of exposure limits, turn back values, and procedures for the use of dosimeters and potassium iodide (KI). In addition, they demonstrated good contamination control procedures.

a. **MET:** Criteria 1e1, 3a1, 3b1, 6d1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

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

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

2. RECEPTION CENTER EXERCISE

2.1 Anderson County Reception Center

The Anderson County Reception Center is located at the Anderson County Junior and Senior High School (Garnett USD 365) in Garnett, Kansas. All staff evaluated at this facility performed in an enthusiastic manner. Anderson County Fire Department personnel demonstrated proper procedures for monitoring people and vehicles in accordance with the plan. Volunteers from Anderson County and the American Red Cross demonstrated efficient registration procedures.

a. **MET:** Criteria 1a1, 1c1, 1d1, 1e1, 3a1, 6b1

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** 6a1

Issue No.: 72-2003-6.a.1-A-01

Description: The failure to control contaminated clothing articles resulted in inadvertent cross-contamination of reception center staff in the male decontamination area. A male was directed to a bathroom stall and advised to remove certain items of his clothing prior to decontamination of his skin. He was further advised to place the items in a bag provided. Upon exiting the stall, he handed his shoes to the lead worker who, in turn, passed one of the shoes to his assistant on the other side of the tape demarking the non-contaminated side of the area. Inside both shoes were folded socks. The left sock was used to hide the source material that had been discovered earlier.

Recommendation: Not applicable. See Corrective Action Demonstrated

Corrective Action Demonstrated: The lead worker immediately recognized the error and the potential for cross-contamination, and with the consent of the evaluator and controller, the procedures and practices were re-examined. Specific, recommended actions, identified by the evaluated volunteer workers and agreed upon by the exercise controller and evaluator, were (a) to provide a better explanation/ briefing and set of directions to contaminated individuals, (b) to arrange the disrobing process so as to minimize the potential for limited oversight and the need for assistance, and (c) improved training for all workers (the assistant was undergoing his

first exercise and had only limited experience). These identified recommendations were discussed, reviewed and implemented on-site during the exercise. Decontamination procedures were then discussed and demonstrated (for initial surface contamination) and the individual was re-monitored prior to release to the registration area. This area requiring corrective action is considered closed.

d. **NOT DEMONSTRATED:** None

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

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

2.2 Anderson County Congregate Care – Jr./Sr. High School and Elementary School (Garnett USD 365)

The Anderson County Junior/Senior High School and the Garnett Elementary School, both located in Garnett, Kansas, were evaluated as to their adequacy as congregate care centers. The successful evaluation of these facilities as congregate care centers managed by the American Red Cross establishes a baseline evaluation. No further evaluation of these facilities as congregate care centers are required unless there are substantial changes to the facilities. Both schools have large gymnasiums, several large classrooms, and some wide hallways that could be used for sheltering purposes. The elementary school has a large auditorium for conducting meetings if needed. Both schools have a nurse's office. Each school has its' own cafeteria, both of which are accustomed to serving several hundred meals on a normal school day. Seating space is available in both cafeterias for approximately 200 people at a time. The Junior/Senior High School has approximately 15 useable showers and 30 toilets. The elementary school is equipped with approximately 20 useable showers and nearly 30 toilets. Parking is available around and near the Junior/Senior High School for approximately 500 vehicles and at the elementary school for approximately 200 vehicles.

For the congregate care demonstration at the Junior/Senior High School, the American Red Cross set up approximately 10 cots to demonstrate the space that would be allotted per evacuee.

a. **MET:** Criteria 6c1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

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

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

Appendix 1 - Exercise Evaluators and Team Leaders

The following is a list of the personnel who evaluated the Wolf Creek Medical Drill and Reception Center Exercise on September 23, 2003. The letters "TL" after their name indicates evaluator Team Leader.

EVALUATION SITE	EVALUATOR	ORGANIZATION
Coffey County Hospital	Norm Valentine, TL	FEMA
	Audie Canida	FEMA
Coffey County Ambulance	Joseph Schulte	FEMA
	David Smith	FEMA
Anderson County Reception Center:		
Anderson County Junior & Senior High School	Norm Valentine, TL	FEMA
	Audie Canida	FEMA
	Joseph Schulte	FEMA
	David Smith	FEMA
Garnett Elementary School	Norm Valentine, TL	FEMA

Appendix 2 - Exercise Criteria and Extent of Play Agreement

This appendix lists the exercise criteria, which were scheduled for demonstration during the Wolf Creek Generating Station medical drill and reception center exercise September 23, 2003.

Site-specific information was negotiated in the extent-of-play agreements approved by FEMA Region VII for the State of Kansas on January 22, 2003.

The exercise criteria contained in FEMA Exercise Evaluation Areas and Criterion as published in the Federal Register September 12, 2001, and April 29, 2002, represent a functional translation of planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980.

Because the exercise criteria are intended for use at all nuclear power plant sites and because of variations among offsite plans and procedures, an extent-of-play agreement was prepared by FEMA Region VII and provided to the State of Kansas for further clarification of expected demonstration of the criteria.

Listed below are the REP criteria scheduled for demonstration during this exercise and the site-specific extent-of-play agreement, if applicable.

EXERCISE CRITERION and EXTENT-OF-PLAY

Evaluation Criterion 1.a.1. – Mobilization: The State of Kansas has requested, and it has been approved, for the pre-positioning of the following groups for the May 21, 2003, exercise:

- Kansas Department of Emergency Management (KDEM), Kansas Department of Health and Environment (KDHE), and Coffey County personnel will pre-stage at Beto Junction, Kansas, prior to deploying to the Wolf Creek Nuclear Operations Corporation Emergency Operations Facility.

- Wolf Creek Public Information personnel will pre-stage at the State Emergency Operations Center.

- Kansas National Guard Bureau, Kansas Highway Patrol, and Kansas Wildlife and Parks will pre-stage at the Forward Staging Area.

- KDEM's Coffey County Liaisons will pre-stage at the Coffey County Emergency Operations Center.

All staff that have been approved for pre-positioning cannot arrive at their respective facility until one hour after receipt of the ALERT emergency classification level.

Pre-positioning of any additional staff is not authorized, except by written approval from this

office prior to the exercise. Your request must include which staff positions will be pre-positioned and the facility (ies) that will be affected.

Although demonstration of a shift change is not required, all evaluated facilities and functions shall provide current rosters identifying the individuals that will maintain around the clock operation. A current roster for 24-hour staffing must be provided to the evaluation team at each location.

Evaluation Criterion 1.a.1. – Mobilization: Although demonstration of a shift change is not required, all evaluated facilities and functions shall provide current rosters identifying the individuals that will maintain around the clock operation. A current roster for 24-hour staffing must be provided to the evaluation team at each location.

Evaluation Criterion 1.c.1. - Direction and Control: No Modifications at this time.

Evaluation Criterion 1.d.1. – Communications Equipment: All facilities and field teams that are evaluated must demonstrate communications capability. The evaluators will request copies of all messages and logs of message traffic at each site.

Evaluation Criterion 1.e.1. – Equipment and Supplies to Support Operations: Verification of dosimeters and KI supplies, as applicable, will occur at the State Emergency Operations Center, State Forward Staging Area, Wolf Creek Emergency Operations Facility, the Coffey County EOC, LeRoy USD 245, Anderson County Reception Center, Coffey County ambulance and Coffey County hospital, and all other facilities that maintain dosimeters and KI supplies in accordance with the plan.

The issuance of radiological instrumentation and operability checks at the Anderson County Reception Center must not be accomplished prior to the evaluators' arrival.

The issuance of radiological instrumentation and operability checks at the Coffey County Ambulance and Coffey County Hospital must not be accomplished prior to the evaluators' arrival.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Evaluation Criterion 3.a.1. – Implementation of Emergency Worker Exposure Control: Emergency workers must wear appropriate direct reading and permanent record dosimeters and have access to a dosimeter charger in accordance with state and local plans and procedures. In addition, they must be able to demonstrate basic knowledge of dosimeters, radiation exposure limits, and turn-back exposure limits through an interview process. Procedures to monitor and record dosimeter readings and to manage radiological exposure control must be demonstrated.

For the medical drill on September 23, 2003, the responding Coffey County ambulance and the staff at Coffey County Hospital must have dosimeters and a dosimeter charger available for this demonstration and be knowledgeable of procedures for their use and of their exposure limits

For the Anderson County reception center drill on the evening of September 23, 2003, emergency workers must demonstrate their knowledge of emergency worker exposure control. Workers must have dosimeters and a dosimeter charger available for this demonstration and be knowledgeable of procedures for their use and of their exposure limits.

Evaluation Criterion 3.b.1. – Implementation of KI Decision: Although the decision to recommend the use of KI is not due for demonstration during this exercise, it is possible that the scenario could require it. If the decision to use KI is made, the instructions must be appropriately disseminated to all personnel including those deployed (simulated) for traffic and access control and other missions. However, if the decision to use KI is not required by the scenario, all emergency workers, at all facilities, will be expected to demonstrate this criterion through an interview of their knowledge of the procedures for the authorization and the use of KI. Actual administration of KI will be simulated.

During the medical drill, the responding ambulance crew must have KI available and be knowledgeable of procedures for the authorization and use of KI.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Evaluation Criterion 6.a.1 – Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees: This demonstration will occur on September 23, 2003, in the evening. The number of evacuees that must be monitored within twelve hours at the Anderson County reception center is 391 (20% of the evacuees assigned to the center). According to the plan, a portal monitor will be used at this facility. Therefore, one monitoring team for the portal monitor must be demonstrated. In the event that the portal monitor does not function, then according to the plan and based on a monitoring time of four minutes per person, three (3) monitoring teams (2 individuals each) will be required to monitor this number of evacuees within twelve hours. At least one third of this total (one team) must be available for demonstration.

Two additional monitoring teams must be available for evacuee (male/female) decontamination. Therefore, at least three teams must be available for demonstration. The Anderson County Fire Department and Anderson County volunteers provide the monitors for this facility. Therefore, the monitoring resources should be from this organization and the identified volunteers.

The facilities at Anderson County utilized for monitoring and decontamination of evacuees must be set up for evaluation. This will require full staffing of personnel required to accomplish monitoring and decontamination of evacuees. At least six evacuees must be processed to demonstrate registration, monitoring, and decontamination capabilities. Monitoring and decontamination procedures should be initiated for at least one male and one female evacuee. Decontamination may be simulated and completed through an interview process.

As this facility could be used for emergency worker vehicle monitoring and decontamination, at least one vehicle must be monitored. Decontamination of the vehicle is not required according to

the evaluation criterion. This component of the demonstration may be completed through an interview process.

The individuals who perform monitoring must demonstrate an operational check of the instruments, utilizing a check source, prior to monitoring. Information on the proper reading or range of readings should be attached to or accompany the instrument.

All organizations that, per the plans, provide support of registration center activities must be present for evaluation at the Anderson County Reception Center.

Evaluation Criterion 6.c.1 - Temporary Care of Evacuees: This will be demonstrated at the Anderson-Garnett Junior/Senior High School and Anderson-Garnett Elementary School on September 25, 2003. Successful demonstration will fulfill the baseline requirements for evaluation of these facilities. They will not need to be demonstrated again unless there is a significant change made to the facilities that would affect the ability to care for evacuees as stated under the current plan.

According to the plans, Anderson County Emergency Preparedness, Anderson County Sheriff's Department and the Superintendent of Schools USDA 365 and 479, the American Red Cross and the Salvation Army provide personnel to staff the registration center. Therefore, a representative from each of these organizations must be present during the evaluation.

Evaluation Criterion 6.d.1 - Transportation and Treatment of Contaminated Injured Individuals: Coffey County ambulance and Coffey County Hospital will demonstrate this out of sequence. The use of flashing lights and sirens are not necessary during this exercise. A non-specialized vehicle may be used to transport the simulated victim to the medical facility. However, should the ambulance portion of the drill terminate prior to actual transportation to the medical facility, communications between the ambulance and the receiving medical facility must be demonstrated as in the discussion in the generic (national) extent of play.

The ambulance and crew must be monitored before release back into service. In addition, the crew will be interviewed as to their knowledge of where monitoring and decontamination of their vehicle will be accomplished.

On September 23, 2003, the hospital portion will be demonstrated by Coffey County Hospital.

In the event that during an out-of-sequence demonstration an evaluator identifies an exercise issue, the evaluator will discuss it with the Team Leader, Controller, and Trainer (state or utility representative). If possible, the trainer will provide immediate instruction and a re-demonstration will occur to correct the issue. The exercise report will reflect the exercise issue and that it has been corrected.