U.S. Department of Homeland Security
Region VII
9221 Ward Parkway, Suite 300
Kansas City, MO 64114-3372

FEMA

FEB 09 2012

Mr. Elmo E. Collins
Regional Administrator
U.S. NRC Region IV
612 East Lamar Blvd., Suite 400
Arlington, Texas 76011-4125

Dear Mr. Collins:

Enclosed is a copy of the final report for the November 15, 2011, exercise of the offsite radiological emergency response plans, site-specific to the Wolf Creek Generating Station. The State of Kansas and Coffey County participated during the exercise. The report was prepared by Federal Emergency Management Agency Region VII staff. The final report will be provided to the State of Kansas.

There were no Deficiencies as a result of this exercise. However, there was one Area Requiring Corrective Action (ARCA) identified during an out-of-sequence medical drill. That ARCA was corrected following additional on the spot training and re-demonstration. There were no ARCAs or deficiencies from previous exercises to be addressed in this exercise.

Based on the results of this exercise, the offsite radiological response plans and preparedness for the State of Kansas and the affected local jurisdiction, site-specific to the Wolf Creek Generating Station, can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site. Therefore, the Title 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, granted on April 4, 1989, will remain in effect.

If you have any questions or concerns regarding the report, please contact Mr. Ronald L. McCabe, Regional Assistance Committee Chair, at 816-283-7007 or by email ron.mccabe@fema.dhs.gov.

Sincerely,

Beth Freeman
Regional Administrator

Enclosure

cc: NRC HQ, Document Control Desk
NRC NSIR, electronic
Bill Maier, NRC Region IV, electronic w/o enclosure
Lisa Hamilton, REP HQ, electronic w/o enclosure
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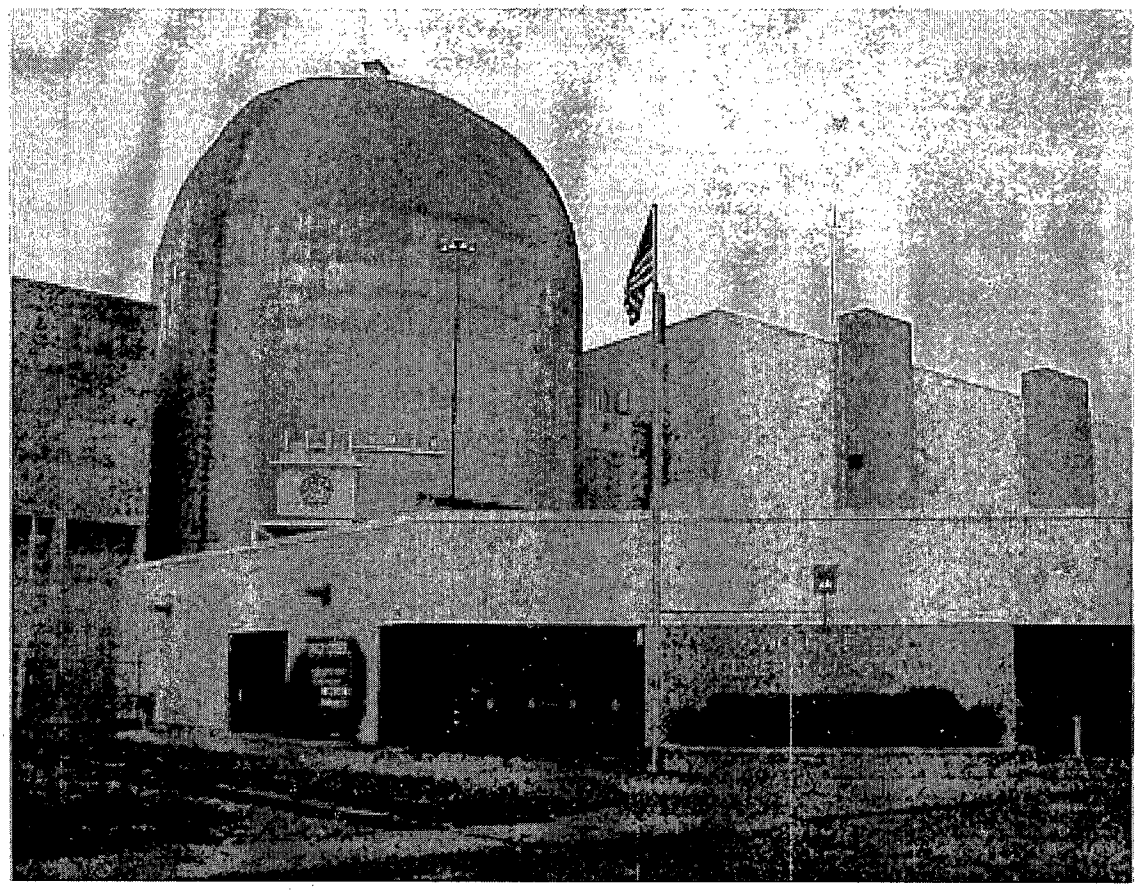

Wolf Creek Generating Station

After Action Report/ Improvement Plan

Exercise Date - November 15, 2011

Radiological Emergency Preparedness (REP) Program

FEMA

Published February 07, 2011

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Wolf Creek Generating Station

After Action Report/Improvement Plan

Published February 07, 2011

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EXECUTIVE SUMMARY

On November 15, 2011, the Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) Region VII, conducted an exercise in the plume emergency planning zone (EPZ) around the Wolf Creek Generating Station. In addition, out-of-sequence drills were conducted on October 13 and October 27, 2011. The purpose of the exercise and drills was to assess the level of State and local preparedness in responding to a radiological emergency. The exercise and drills 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 exercise at this site was conducted on June 3, 2009. The qualifying emergency preparedness exercise was conducted on November 7, 1984.

FEMA wishes to acknowledge the efforts of all who participated in and supported the exercise and drills. Along with the State of Kansas, Coffey County and Lyon County participated along with the various State and local organizations. The staff of the utility should also be commended for their work on the scenario development and exercise preparation.

Protecting the public health and safety is the full-time job of some exercise participants and an additionally assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their community. The cooperation and teamwork of all the participants were evident during this exercise. Thanks to all who participated in this community service.

The State and local organizations demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies as a result of this exercise. However, there was one Area Requiring Corrective Action (ARCA) identified during an out-of-sequence medical drill. That ARCA was corrected following additional on the spot training and re-demonstration. Planning issues that were identified during the exercise are included in this report. There were no ARCAs from the previous Exercise in 2009.

For this exercise, the final protective action decision (PAD) during the emergency phase was an evacuation of the following subzones: Center (CTR), Coffey County Lake (CCL), John Redmond Reservoir (JRR), East-1 (E-1), North-1 (N-1), North-2 (N-2), Northeast-1 (NE-1), Northeast-2 (NE-2), and Northeast-3 (NE-3). This included the cities of New Strawn and Waverly. Approximately 2,228 residents were affected by the evacuation.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Wolf Creek Generating Station

Type of Exercise
Plume

Exercise Date
November 15, 2011

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 exercise:

- State Jurisdictions
  - Kansas Department of Aging
  - Kansas Department of Agriculture
  - Kansas Division of Emergency Management
  - Kansas Department of Health and Environment
  - Kansas Department of Transportation
  - Kansas Department of Wildlife and Parks
  - Kansas Highway Patrol
  - Kansas National Guard
  - Kansas Department of Social and Rehabilitation Services
  - Kansas Adjutant General's Department
- Risk Jurisdictions
  - Coffey County Agriculture
  - Coffey County Board of Commissioners
  - Coffey County Clerks Office
  - Coffey County Emergency Management
  - Coffey County Engineering Division
  - Coffey County Fire Department
  - Coffey County Health and Medical Department
  - Coffey County Public Information Office
  - Coffey County Radiological Officer
  - Coffey County Road and Bridge
  - Coffey County Sheriffs Office
  - Waverly Unified School District #243
- Support Jurisdictions
  - Emporia Fire Department/Lyon County EMS
  - Newman Regional Hospital
- Private Organizations
  - American Red Cross
  - WIBW Radio Station

Wolf Creek Nuclear Operating Corporation

Federal Jurisdictions

Department of Homeland Security/FEMA

Nuclear Regulatory Commission

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

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 WCGS's interaction with Federal, State, and local government agencies as well as private organizations. The Emergency Plan provides for continuous emergency preparedness including the conduct of annual exercises and preparatory drills.

The purpose of the November 15, 2011 exercise was to activate and evaluate portions of the State of Kansas and Coffey County emergency plans and associated implementing procedures, in accordance with 44 CFR 350. Further, these exercises and drills tested 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 this drill provided additional training for emergency response organization personnel and a means to further enhance WCGS emergency response capability.

The scenario was designed to provide the basis for the conduct of a simulated radiological accident at WCGS in Burlington, Kansas, through which the capabilities and effectiveness of the emergency response plans for the utility, the State of Kansas and Coffey County could be evaluated. The scenario was utilized by the exercise controllers/evaluators as the control mechanism for the conduct of the drill. WCGS Emergency Planning personnel developed the scenario; it was initially reviewed by ICF, a FEMA contractor, prior to final review and approval by FEMA Region VII.

The scenario, as driven by the WCGS Control Room Simulator, depicted a simulated sequence of events, which resulted in escalating conditions of sufficient magnitude to warrant mobilization of State and local agencies to respond to the simulated emergency. Whenever practical, the drill incorporated provisions for "free play" on the part of the participants.

2.2 Exercise Objectives, Capabilities and Activities

Wolf Creek Generating Station (WCGS) exercises and drills are conducted to test and provide the opportunity to evaluate emergency plans, associated implementing procedures, facilities, and equipment. This exercise tested the WCGS offsite response organizations' ability to assess and respond to emergency conditions as well as coordinate efforts with other agencies for protection of the health and safety of the public.

The WCGS 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 emergency preparedness plans for the State of Kansas and Coffey County. Additional guidance provided in NUREG-0654, NUREG-0696, and NUREG-0737, was utilized in developing these objectives.

The objective of the exercise was to test the implementation of the plans and procedures of participating agencies, along with the capability of these agencies to conduct operations in accordance with these plans. This objective is further defined by the criteria evaluated for each participating location.

The exercise included participation by the State of Kansas, Coffey County, Lyon County, and other associated offsite response organizations. A summary of the specific criteria evaluated for each of the participating organizations is listed in Table 3.1.

2.3 Scenario Summary

The following is the scenario provided by Wolf Creek Generating Station (WCGS) and approved by Department of Homeland Security/FEMA for use during the November 15, 2011 plume exercise.

Initial Conditions

The initial conditions establish the plant is at 100% Reactor power, middle of core life (10,000 MWD/MTU). Diesel Generator 'A' is running and loaded onto the bus using STS KJ-005A following planned maintenance. MDAFW pump 'A' is OOS for emergent work. 'A' train components will be protected during this exercise and actual barriers will be in place to prevent inadvertent work on the 'A' train equipment. For exercise purposes, no actions will be taken in

or near 'A' train components.

Meteorological conditions are cloudy skies with the wind from the southwest (236°) to the northeast (56°) at ~5 mph, 35° temperature and stability class 'B'.

Sequence of Events

At 0740, there is a vehicle accident in Waverly that impacts the VW1 siren located in Waverly. The siren is declared no longer functional and will not be repaired for at least 24 hours.

The first event will be a fire in the 'A' Diesel Generator room due to a fuel oil leak at 0807. Fire alarm will initiate the event. There will be a message from the assigned Diesel Generator watch stander stating there is a fire. The DG will be manually tripped. The FB will respond, hoses and foam will be set up to fight the fire, and consideration given for a triage/rehab area to be established by Security. The fire will have to be put out by the fire brigade. This event will trigger a classification of Alert.

The second event occurs after the fire is out, a fire hose running along the NB02 switchgear room will rupture and spray water onto the NB bus causing a short and the de-energization of the bus at 0838. The isolation valve for the hose rack cannot be closed. Mini scenario to work on restoring power to the bus that allows the return of power after the next event (SAE) is complete.

There is a report that three tractor/trailer units hauling cattle collide with a van at the intersection of Trefoil Road and 25th. The fatality accident closes both roads at this intersection and will take approximately six hours to clear due to the cattle that get loose.

The third event will be a magnitude 3.3 earthquake that causes damage to the fuel and a Loss of Offsite Power at 0937. Trouble in the switchyard will give a report of 1 hour to have power restored. RCS activity will start increasing; Loose Parts monitor will alarm to indicate fuel damage. AB HV-6, SG 'C' Steam Supply to the TDAFWP did not open at the loss of NB02. The loss of the second NB bus for > 15 minutes meets the trigger for a classification upgrade to a Site Area Emergency (SAE).

The fourth event will be the determination that no NB bus can be restored for > 4 hours. This will be the trigger to increase the emergency classification level to General.

The fifth event is a tube rupture in 'B' SG. With both NB buses de-energized, the TDAFWP will be required to feed the SG. With the tube rupture, a release through the pump will be in progress. This will be an unfiltered monitored release at 1100. Off-site power will be restored after the off-site release has occurred and will help terminate the release.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 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 Out-of-Sequence drills on October 13, 2011 and October 27, 2011, and the Full-scale Plume Exercise held on November 15, 2011, to test the offsite emergency response capabilities of State and local governments in the 10-mile plume EPZ surrounding the Wolf Creek Nuclear Generating Station.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of the criteria 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 Exercise Evaluation

The matrix presented in Table 3.1 presents the status of all exercise criteria, which were scheduled for demonstration during this exercise, 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(s) Requiring Corrective Action (ARCA) assessed and or unresolved ARCA(s) from prior exercise(s)

P - Plan Issue

N - Not Demonstrated

Table 3.1 - Summary of Exercise Evaluation

DATE: 2011-11-15 SITE: Wolf Creek Generating Station, KS M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		KS State EOC	DA & FTC	KS Field Tm 2	KS Field Tm 1	Kansas JIC	Frwd Staging	KS EOF	EAS - WIBW	Coffey EOC	Waverly # 243	Cty R & B	Newman Hlth	Emporia Fire
Emergency Operations Management														
Mobilization	1a1	M	M	M	M	M	M	M		M		M		
Facilities	1b1													
Direction and Control	1c1	M					M	M		M		M		
Communications Equipment	1d1	M	M	M	M	M	M	M		M		M		
Equip & Supplies to support operations	1e1	M	M	M	M	M	M	M		M	M	M	M	M
Protective Action Decision Making														
Emergency Worker Exposure Control	2a1		M				M	M		M		M		
Radiological Assessment and PARs	2b1	M	M					M						
Decisions for the Plume Phase -PADs	2b2	M	M					M		M				
PADs for protection of special populations	2c1									M				
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	M		M	M		M	M	M	M	P
Implementation of KI decision	3b1		M	M	M		M	M		M	M	M		M
Implementation of protective actions for special populations - EOCs	3c1									M		M		
Implementation of protective actions for Schools	3c2									M	M			
Implementation of traffic and access control	3d1	M					M			M		M		
Impediments to evacuation are identified and resolved	3d2	M					M			M		M		
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			M	M									
Field Teams obtain sufficient information	4a2		M											
Field Teams Manage Sample Collection Appropriately	4a3			M	M									
Post plume phase field measurements and sampling	4b1													
Laboratory operations	4c1													
Emergency Notification and Public Info														
Activation of the prompt alert and notification system	5a1	M							M	M				
Activation of the prompt alert and notification system - Fast Breaker	5a2													
Activation of the prompt alert and notification system - Exception areas	5a3									M				
Emergency information and instructions for the public and the media	5b1	M				M			M	M				
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												P	M

3.3 Criteria Evaluation Summaries

3.3.1 Kansas Jurisdictions

3.3.1.1 Kansas State Emergency Operations Center

The Kansas State Emergency Operations Center (SEOC), located in Topeka, KS, had nine State agencies participate in the November 15, 2011 Wolf Creek Generating Station (WCGS) Exercise. In addition, the American Red Cross, FEMA, and the NRC all had liaisons in the SEOC. All 10 criteria at this location were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

Direction and control regarding the protective action recommendations (PARs) and Emergency Alert System messages was excellently demonstrated at the SEOC. Also, evaluators at this location noticed the overall low noise level in the SEOC, which allowed for good communications.

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

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

3.3.1.2 Dose Assessment & Field Team Coordination

The dose assessment and field team coordination are conducted out of the Emergency Operations Facility in Burlington, KS. It is a coordinated effort facilitated by Kansas Department of Health & Environment (KDHE) in partnership with staff from WCGS, Kansas Division of Emergency Management (KDEM), and Coffey County. All nine criteria in this area were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

When asked to determine the amount of time emergency workers had to assist in a Waverly traffic accident, based on area radiological conditions, the KDHE dose assessment staff was able

to quickly and successfully establish that amount of time. The KDHE State Radiological Assessment Manager (SRAM) and the assistant SRAM also demonstrated outstanding team work as they worked closely with the KDEM, utility, and Coffey County liaisons to ensure PARs were appropriate to protect the public's health and safety.

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

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

3.3.1.3 Kansas Radiological Monitoring Team # 2 - Blue

For exercises and emergencies at WCGS, radiological monitoring team staff from the State of Kansas and Coffey County joins with the utility staff to make four Joint Radiological Monitoring Teams (JRMTs), which deploy out of the EOF. During the November 15, 2011 exercise, two of the teams were evaluated by FEMA. Evaluators assessed each JRMT based on seven criteria. The Blue JRMT team adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. Each team member demonstrated that they are cross-trained very well in every aspect of the monitoring duties.

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

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

3.3.1.4 Kansas Radiological Monitoring Team # 1 - Green

For exercises and emergencies at WCGS, radiological monitoring team staff from the State of Kansas and Coffey County joins with the utility staff to make four Joint Radiological Monitoring Teams (JRMTs), which deploy out of the EOF. During the November 15, 2011 exercise, two of the teams were evaluated by FEMA. Evaluators assessed each JRMT based on seven criteria. The Green JRMT team adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. The team worked extremely well together and was very knowledgeable.

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

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

3.3.1.5 Kansas Joint Information Center

The Kansas Joint Information Center (JIC) is located in an adjoining room to the Kansas SEOC. In addition to the Lead State Public Information Officer (PIO) and State PIO staff, Coffey County and WCGS have PIO staff that report to the JIC. There is also a public inquiry hotline that is staffed with operators when there is an emergency. All four criteria in the JIC were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

The Lead State PIO did an outstanding job of assessing and organizing emergency public information and protective action decisions (PADs) that were being sent to her in a rapid succession. The partnership among the State, County, and WCGS PIO staffs proved very effective in the swift distribution of accurate information to the public.

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

a. MET: 1.a.1, 1.d.1, 1.e.1, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None

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

3.3.1.6 Forward Staging Area

The Forward Staging Area (FSA) is located in Coffey County near Waverly, KS off U.S. Highway 75. The State of Kansas will deploy three State agencies to this location to stage State resources in the event of a radiological release from the WCGS. State agencies that report here are: Kansas National Guard (KNG), Kansas Highway Patrol (KHP), and Kansas Department of Wildlife and Parks (KDWP).

All nine criteria for this location were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. The flow of information among the three agencies at the FSA was excellent and a key to the success of a coordinated response.

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

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2.
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

3.3.1.7 Kansas Emergency Operations Facility

The Emergency Operations Facility (EOF) is located in Burlington, KS near the Wolf Creek Generating Station (WCGS). There is coordinated effort to monitor and assess the emergency situations at WCGS. This coordination is a partnership of WCGS, KDHE, KDEM, and Coffey County personnel. All nine criteria in this area were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

During the November 15, 2011 WCGS exercise, the communication between the agencies on

PARs was seamless. The KDHE was responsible for working closely with WCGS and the JRMTs to form PAR conclusions. Once those conclusions were drawn they were quickly discussed with the County and KDEM representatives in the EOF to be distributed out to the appropriate facilities.

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

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

3.3.1.8 EAS Station - WIBW

The primary emergency alert system (EAS) station for incidents at WCGS is WIBW 580 AM and WIBW 94.5 FM out of Topeka, KS. WIBW has the capability to receive and broadcast EAS messages 24 hours a day. Both criteria for this location were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. There was excellent coordination between the WIBW control room operator and the Kansas SEOC for the activation of the EAS system and broadcast of emergency information.

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

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

3.3.2 Risk Jurisdictions

3.3.2.1 Coffey County Emergency Operations Center

The Coffey County Emergency Operations Center (EOC) is located in Burlington, KS within 10-mile Emergency Planning Zone (EPZ). A number of County agencies accompany the Emergency Management staff in the EOC during emergencies.

At the Coffey County EOC, 16 criteria were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. There was exceptional team work demonstrated among the County organizations. In addition, the EOC team demonstrated efficient processes in facility security and administrative tasks.

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

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

3.3.2.2 Waverly USD 243

The Waverly Unified School District (USD) #243 is located within the emergency planning zone of the WCGS. The emergency plans and associated procedures were evaluated through an out-of-sequence interview on October 13, 2011. There were four criteria adequately demonstrated by Waverly USD #243. The staff was very knowledgeable on the radiological procedures established to protect the health and safety of the students.

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, 3.c.2.
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

3.3.2.3 Coffey County Road and Bridge Department

The Coffey County Road and Bridge Department is located in Burlington, KS. Deployed from this location are staff and equipment that are vital to the establishment of road blocks and traffic and access control points. During the WCGS exercise, 10 criteria were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. County Road and Bridge staff was knowledgeable of the procedures. Additionally, the staff was well cross-trained.

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

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2
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

3.3.3 Support Jurisdictions

3.3.3.1 Newman Regional Health

The Newman Regional Hospital is located in Emporia, KS, the host county for the WCGS. The hospital staff demonstrated outstanding cross contamination awareness especially in their procedures and techniques of donning/doffing of protective equipment. Three criteria were evaluated during the out-of-sequence drill conducted on October 27, 2011. Criteria were adequately demonstrated, with no ARCAs or Deficiencies identified. One Planning issue was documented, details below.

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

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

ISSUE NO.: 72-11-6d1-P-01

CRITERION: Facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2., H.10., K.5.a.b., L.1., 4)

CONDITION: The Newman Regional Hospital staff failed to demonstrate methods of sample collection for analysis or bioassay.

POSSIBLE CAUSE: The hospital staff's procedures and job aides only reference to save any samples taken. The job aides do not instruct the staff to take samples or what to do with samples after collection.

REFERENCE: NUREG-0654/FEMA-REP1; K.5.a,b;L.1;4

EFFECT: Without taking samples, there is a possibility of internal contamination of the patient that would go undiagnosed and treated.

RECOMMENDATION: The hospital's procedures and job aides need to be corrected to instruct hospital staff to take appropriate samples from the patient for the possibility of internal contamination. In addition, instruction needs to be included for the process of sample transfer in order to direct the samples to the laboratory for proper analysis.

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

3.3.3.2 Emporia Fire Department/Lyon County EMS

The Emporia Fire Department/Lyon County EMS is located in Emporia, KS, the host county for the WCGS. The ambulance crew worked well as a team. Four criteria were evaluated during the out-of-sequence drill conducted on October 27, 2011. One ARCA was identified; however training and re-demonstration were successful during the drill to close the ARCA. The details of the ARCA as well as a Planning issue are listed below.

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

a. MET: 1.e.1, 3.b.1, 6.d.1
b. AREAS REQUIRING CORRECTIVE ACTION: 3.a.1

ISSUE NO.: 72-11-3a1-A-02

CRITERION: OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers IAW plans and procedures. Emergency workers periodically and at the end of each mission read and record dosimeter reading. (NUREG-0654, K.3)

CONDITION: The Emporia Fire Department/Lyon County EMS crew failed to utilize adequate contamination control procedures while preparing the injured person for transportation to Newman Regional Hospital.

POSSIBLE CAUSE: Upon arrival at the scene, the crew did not establish a clean zone around the victim. When cutting away outer clothing of the patient, the crew did not change gloves before using their hands to support the injured person.

REFERENCE: NUREG-0654, Section II, paragraphs K., L.1., & L.4.

EFFECT: The lack of contamination control can lead to the spread of radiological materials on the patient as well as the ambulance crew.

CORRECTIVE ACTION DEMONSTRATED: After stopping the evaluation, additional training was provided to the ambulance crew on proper contamination control procedures. The ambulance crew then re-demonstrated and simulated

minimizing cross contamination adequately which successfully closed this issue.

c. DEFICIENCY: None

d. PLAN ISSUES: 3.a.1.

ISSUE NO.: 72-11-3a1-P-03

CRITERION: OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers IAW plans and procedures. Emergency workers periodically and at the end of each mission read and record dosimeter reading. (NUREG-0654, K.3)

CONDITION: The Emporia Fire Department/Lyon County EMS crew failed to utilize adequate contamination control procedures while preparing the injured person for transportation to Newman Regional Hospital.

POSSIBLE CAUSE: Upon arrival at the scene, the Emporia Fire Department/Lyon County EMS crew did not establish a clean zone around the victim. The crew wore only protective shoe covers and double gloves when cutting away outer clothing of the patient. Additionally, they did not change gloves before using their hands to support the injured person. Although the ambulance crew followed their procedures and job aid, some of the procedures/job aid could be strengthened to enhance contamination control.

There is concern that the process of cutting off a patient's clothing creates a higher risk of transferring of contaminated materials to the EMS personnel. During the evaluated drill, a Tyvec suit was used to cut away from the injured person. If this person would have been wearing tight/heavy clothing, it would be difficult to remove clothing without contaminating the responders dressed in only shoe covers and gloves.

REFERENCE: NUREG-0654, Section II, paragraphs K., L.1., & L.4.

EFFECT: With the lack of contamination control, contamination was potentially spread on the injured individual. During the process of cutting the clothing from the

injured person the ambulance crew also potentially contaminated themselves.

RECOMMENDATION: The following changes/additions to the Emporia Fire Department/Lyon County EMS procedures are recommended:

a. The job aid for the EMS crew should be edited to include the establishment of a clean area around the injured person to help protect against cross contamination. A clean area can be established using blankets or some other type of ground covering.

b. The procedure of minimal protective clothing (gloves/booties) should only be used when the process is to stabilize and wrap the injured person for quick transportation. When the procedure includes monitoring, decontamination (clothing removal), and stabilization, then protective clothing should increase to full body protection. It is suggested that either the process of cutting off a patient's clothing is removed from the job aid, or if that process is maintained, then the crew's personal protective clothing should be more substantial.

c. The EMS crew should increase quantity and variety of protective equipment they take to a response site. A box of gloves would facilitate quick glove changes. Larger protective shoe coverings are necessary to fit over boots. It is recommended that a wide variety of shoe covering sizes be included in the crew's kit.

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

SECTION 4: CONCLUSION

Based on the results of this exercise and out-of-sequence drills, the offsite radiological emergency response plans and preparedness for 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 Wolf Creek Generating Station will remain in effect.

APPENDIX A: IMPROVEMENT PLAN

Issue Number: 72-11-3a1-P-03	Criterion: 3a1
ISSUE: The Emporia Fire Department/Lyon County EMS crew failed to utilize adequate contamination control procedures while preparing the injured person for transportation to Newman Regional Hospital.	
RECOMMENDATION: The following changes/additions to the Emporia Fire Department/Lyon County EMS procedures are recommended: a. The job aid for the EMS crew should be edited to include the establishment of a clean area around the injured person to help protect against cross contamination. A clean area can be established using blankets or some other type of ground covering. b. The procedure of minimal protective clothing (gloves/booties) should only be used when the process is to stabilize and wrap the injured person for quick transportation. When the procedure includes monitoring, decontamination (clothing removal), and stabilization, then protective clothing should increase to full body protection. It is suggested that either the process of cutting off a patient's clothing is removed from the job aid, or if that process is maintained, then the crew's personal protective clothing should be more substantial. c. The EMS crew should increase quantity and variety of protective equipment they take to a response site. A box of gloves would facilitate quick glove changes. Larger protective shoe coverings are necessary to fit over boots. It is recommended that a wide variety of shoe covering sizes be included in the crew's kit.	
CORRECTIVE ACTION DESCRIPTION: a. The State of Kansas will add this recommended information into the 2012 Emporia Fire Department/Lyon County EMS job aids and include it in the training. b. The State of Kansas will not be incorporating this recommended information into the training materials because their process utilizes monitoring of EMS personnel and decontamination as appropriate after the patient is transferred to hospital personnel. The State will continue to emphasize the use of double gloves and booties in the annual training. c. The State of Kansas reports that new booties have recently been purchased that are more substantial and will effectively stretch over the larger size shoes. The practice of glove changes will be stressed in the annual training by the State. In their annual training, the State will stress that additional gloves need to be carried in their pockets so glove changes are possible. It is EMS crewmembers' routine practice to carry a supply of gloves within their clothing. They do not want to add a box of gloves to the supplies, because one size of gloves does not fit all responders. ADDITIONAL CAPABILITY ELEMENT – Training PRIMARY RESPONSIBLE AGENCY – Kansas Department of Health and Environment AGENCY POC: Kimberly Steves AGENCY POC PHONE: 785-296-4359 START DATE: 2012-04-01 ESTIMATED COMPLETION DATE: 2012-10-31	
CAPABILITY: Weapons of Mass Destruction (WMD) and Hazardous Materials (HazMat) Response and Decontamination	PRIMARY RESPONSIBLE AGENCY: Kansas Division of Emergency Management
CAPABILITY ELEMENT: Planning	START DATE: 2012-02-01
AGENCY POC: Jennifer Clark 785-274-1394	ESTIMATED COMPLETION DATE: 2012-03-31

Issue Number: 72-11-6d1-P-01	Criterion: 6d1
ISSUE: The Newman Regional Hospital staff failed to demonstrate methods of sample collection for analysis or bioassay.	
RECOMMENDATION: The hospital's procedures and job aides need to be corrected to instruct hospital staff to take appropriate samples from the patient for the possibility of internal contamination. In addition, instruction needs to be included for the process of sample transfer in order to direct the samples to the laboratory for proper analysis.	
CORRECTIVE ACTION DESCRIPTION: The State of Kansas will incorporate the recommended information into the Job Aids for both Newman and Coffey County hospitals. Instruction will also be provided for the process of sample transfer. ADDITIONAL CAPABILITY ELEMENT – Training PRIMARY RESPONSIBLE AGENCY – KS Department of Health and Environment AGENCY POC: Kimberly Steves AGENCY POC PHONE: 785-296-4359 START DATE: 2012-04-01 ESTIMATED COMPLETION DATE: 2012-10-31	
CAPABILITY: Laboratory Testing	PRIMARY RESPONSIBLE AGENCY: Kansas Division of Emergency Management
CAPABILITY ELEMENT: Planning	START DATE: 2012-02-01
AGENCY POC: Jennifer Clark 785-274-1394	ESTIMATED COMPLETION DATE: 2012-03-31

APPENDIX B: EXERCISE TIMELINE

Table 1, on the following pages, presents the times recorded for various activities and decisions at each of the evaluated locations during the Wolf Creek Generating Station exercise held on November 15, 2011. A disparity in times is normal given the need for message transmissions and decision-making at the various locales.

Table 1 - Exercise Timeline
DATE: 2011-11-15, SITE: Wolf Creek Generating Station, KS

Emergency Classification Level or Event	Time Utility Declared	KS State EOC	DA & FTC	KS Field Tm 2	KS Field Tm 1	Kansas JIC	Frwd Staging
Unusual Event	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Alert	812	819	816	816	816	821	852
Site Area Emergency	946	954	946	956	956	950	1005
General Emergency	1013	1015	1014	1013	1013	1021	1035
Simulated Rad. Release Started	1111	1119	1113	1113	1113	n/a	n/a
Simulated Rad. Release Terminated	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Facility Declared Operational		903	852	n/a	n/a	923	936
Declaration of State of Emergency		916	n/a	n/a	n/a	916	n/a
1st Precautionary and/or Protective Action Decision- Evacuation JRR, CCL:		1001	950	n/a	n/a	n/a	n/a
1st Siren Activation		1009	n/a	n/a	n/a	n/a	n/a
Initial EAS Message and Special News Broadcast		1011	n/a	n/a	n/a	n/a	n/a
2nd Protective Action Decision: Evacuation, CTR, JRR, CCL		1028	1021	n/a	n/a	n/a	n/a
2nd Siren Activation		1035	n/a	n/a	n/a	n/a	n/a
2nd EAS Message and Special News Broadcast		1037	n/a	n/a	n/a	n/a	n/a
3rd Protective Action Decision: Evacuation, CTR, JRR, CCL E-1, N-1, N-2, NE-1, NE-2, NE-3		1149	1138	n/a	n/a	n/a	n/a
3rd Siren Activation		1159	n/a	n/a	n/a	n/a	n/a
3rd EAS Message and Special News Broadcast		1202	n/a	n/a	n/a	n/a	n/a
KI Administration Decision:		1127	1119	1123	1123	n/a	1140
Exercise Terminated:		1230	1230	1235	1235	1230	1242

Table 1 - Exercise Timeline
DATE: 2011-11-15, SITE: Wolf Creek Generating Station, KS

Emergency Classification Level or Event	Time Utility Declared	KS EOF	EAS - WIBW	Coffey EOC	Cty R & B
Unusual Event	n/a	n/a	n/a	n/a	n/a
Alert	812	812	n/a	824	843
Site Area Emergency	946	946	n/a	956	957
General Emergency	1013	1013	n/a	1024	1116
Simulated Rad. Release Started	1111	1111	n/a	1145	n/a
Simulated Rad. Release Terminated	n/a	1230	n/a	n/a	n/a
Facility Declared Operational		n/a	n/a	849	n/a
Declaration of State of Emergency		916	n/a	930	n/a
1st Precautionary and/or Protective Action Decision- Evacuation JRR, CCL:		946	n/a	1001	n/a
1st Siren Activation		n/a	n/a	1009	n/a
Initial EAS Message and Special News Broadcast		n/a	1011	n/a	n/a
2nd Protective Action Decision: Evacuation, CTR, JRR, CCL		1033	n/a	1028	n/a
2nd Siren Activation		n/a	n/a	1035	n/a
2nd EAS Message and Special News Broadcast		n/a	1037	n/a	n/a
3rd Protective Action Decision: Evacuation, CTR, JRR, CCL E-1, N-1, N-2, NE-1, NE-2, NE-3		1133	n/a	1149	n/a
3rd Siren Activation		n/a	n/a	1159	n/a
3rd EAS Message and Special News Broadcast		n/a	1202	n/a	n/a
KI Administration Decision:		1122	n/a	1127	1152
Exercise Terminated:		1230	n/a	1230	1243

APPENDIX C: EXERCISE EVALUATORS AND TEAM LEADERS

The evaluation team for this exercise and out-of-sequence drills consisted of DHS/FEMA Radiological Emergency Preparedness Program (REPP) personnel and Regional Assistance Committee (RAC) members from various Federal agencies.

DATE: 2011-11-15, SITE: Wolf Creek Generating Station, KS

LOCATION	EVALUATOR	AGENCY
Kansas State Emergency Operations Center	Jeffry McSpaden Laurel Ryan *Joe Schulte	US DOT FEMA RVII FEMA RVII
Dose Assessment & Field Team Coordination	*Chuck Hooper	EPA
Kansas Radiological Monitoring Team # 2 - Blue	Scotty Hargrave	FDA
Kansas Radiological Monitoring Team # 1 - Green	*Jeff Clark	FEMA RVII
Kansas Joint Information Center	*Brian Hasemann Miriam Weston	FEMA RII FEMA RII
Forward Staging Area	*Dan Feighert	FEMA RVIII
Kansas Emergency Operations Facility	*Reggie Cope	FDA
EAS Station - WIBW	*Rex Jennings	FEMA RVII
Coffey County Emergency Operations Center	*Audie Canida William Maier Sharron McDuffie Ron Williams	FEMA RVII NRC FEMA RVII US DOT
Waverly USD 243	*Sharron McDuffie	FEMA RVII
Coffey County Road and Bridge Department	*Judy Dodgen	FEMA RVII
Newman Regional Health	Jeff Clark	FEMA RVII
Emporia Fire Department/Lyon County EMS	*Audie Canida	FEMA RVII
* Team Leader		

APPENDIX D: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ARCA	Area Requiring Corrective Action
CCE	Coffey County Engineer
CCEOC	Coffey County Emergency Operations Center
CCL	Coffey County Lake
CS	Communication Specialist
DHS	Department of Homeland Security
DOT	Department of Transportation
DRD	Direct Reading Dosimeter
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMD	Emergency Management Director
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ESU	Emporia State University
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FSA	Forward Staging Area
FTC	Field Team Communicator
GE	General Emergency
GPS	Global Positioning System
JIC	Joint Information Center
JRMT	Joint Radiological Monitoring Team
JRR	John Redmond Reservoir
KDEM	Kansas Division of Emergency Management
KDHE	Kansas Department of Health and Environment
KDWP	Kansas Department of Wildlife and Parks
KHP	Kansas Highway Patrol
KMAP	Kansas Mapping Application Program
KNG	Kansas National Guard
NOUE	Notification Of Unusual Event
NPIS	Nuclear Plant Information System

NRC	Nuclear Regulatory Commission
NUE	Notification Of Unusual Event
ORO	Off-site Response Organization
PA	Public Address
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PIO	Public Information Officer
PIPT	Public Inquiry Phone Team
PTM	Phone Team Manager
RAC	Regional Assistance Committee
REA	Radiation Emergency Area
REPP	Radiological Emergency Preparedness Program
RO	Radiological Officer
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
SRAM	State Radiological Assessment Manager
WCGS	Wolf Creek Generating Station
WCNOC	Wolf Creek Nuclear Operating Corporation

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