



Wolf Creek Generating Station After Action Report/ Improvement Plan

Exercise Date – November 14, 2017

Radiological Emergency Preparedness (REP) Program



FEMA

February 8, 2018

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EXECUTIVE SUMMARY

On November 14, 2017, the Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) Region VII conducted a plume exercise in the emergency planning zone (EPZ) around the Wolf Creek Generating Station. In addition, out-of-sequence drills were conducted on October 4, 2017, October 31, 2017, and November 15, 2017. 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 December 8, 2015. 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 Level 1 or Level 2 findings or planning issues identified as a result of this exercise. There were no open findings from the previous exercise in 2015.

For this exercise there were two protective action decisions (PAD) made. The first (PAD) was the closing and evacuation of Coffey County Lake (CCL) and John Redmond Reservoir (JRR). The second PAD was the evacuation of subzones Center (CTR), South 1 (S-1), South 2 (S-2), Southwest 1 (SW-1) and Southwest 2 (SW-2). The evacuation included the city of Burlington and sub division Quail Meadows. Approximately 3,249 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 14, 2017

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 Division of Emergency Management
- Kansas Department of Health & Environment
- Kansas Army National Guard
- Kansas Air National Guard
- Kansas Highway Patrol
- Kansas Department of Wildlife, Parks and Tourism
- Kansas Department for Children and Families
- Kansas Department of Agriculture
- Kansas Department of Transportation
- Kansas Department of Aging
- Kansas GIS Response Team
- Kansas Adjutant General's Department

Risk Jurisdictions

- Coffey County Emergency Management
- Coffey County Road and Bridge
- Coffey County Public Information Officer
- Coffey County Radiological Officer
- Coffey County Sheriff's Department
- Coffey County Agriculture
- Coffey County Engineering Division
- Coffey County Board of Commissioners
- Coffey County Register of Deeds
- Coffey County Treasurer
- Coffey County Appraiser
- Coffey County Fire Department
- Coffey County Health Department
- Coffey County Highway Department
- Coffey County Clerk's Office
- Leroy USD #245

Support Jurisdictions

- Newman Regional Hospital
- Emporia Fire Department
- Lyon County EMS/Ambulance

Private Organizations

- Wolf Creek Generating Station
- American Red Cross

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WIBW Radio
Ellis Bus Company

Federal Organizations

FEMA State Liaison

U.S. Department of Agriculture Farm Service Agency

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 14, 2017 plume 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 exercise 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 exercise. WCGS Emergency Planning personnel developed the scenario with input from Kansas Division of Emergency Management staff. It was initially reviewed by a Health Physicist from the FEMA Technological Hazards Program headquarters, 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 exercise 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.

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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 plume exercise which took place on November 14, 2017.

Initial Conditions

Initial conditions establish the plant is running at 100% power. Plant is at MOL. TDAFW pump is tagged out for bearing replacement and is not due back for another 12 hours. T.S. 3.7.5, Condition B (72 hours) is in effect. For drill purposes, Train 'B' is the protected train. Meteorological conditions are cloudy skies with the wind from the northeast (20°) to the southwest (200°) at ~5 mph, 73°F temperature and stability class 'A'. Forecasts have a cold front moving into the area late afternoon.

Per the FBI, there are NO credible Security threats at this time.

Sequence of Events

0805 – Loss of condensate header leads to a Loss of heat sink. (Leads to feedwater trip, Rx trip / Turbine trip.) XNB01 fault occurs, EDG NE01 fuel line is plugged, MDAFW pump 'B' trips.

This results in an SAE. 5-FEF 1 – Y, 2 – Y, 3 – N, 5-N – SAE. Skip Alert, fast breaker.

T-01 begins when feedwater trip / Rx trip is indicated or reported.

NOTE: 8-SSFM 1 – N, 4 – Y, 5 – Y, 6 – N – SAE is also a valid path and may be used to classify the event.

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~0820+ Turbine Building Watch reports failure conditions of the Non-Safety Aux Feed Pump.

~0900 With the SI initiation, GG HZ 43 (Damper 18) closes and does not reopen. This does not impact the release, but prevents dilution of the radioactive flow past the unit vent.

1010 – 300 gpm SGTR on 'A' S/G.

NOTE: 2-SGTF 1-Y, 2-Y, 3-Y, 4-N, 6-N, 8-N – SAE.

1030 – Fault on 'A' S/G outside CTMT, in Area 5. Unmonitored release begins.

This results in a General Emergency. 2-SGTF 1-Y, 2-Y, 3-Y, 4-Y, 5-Y – GE.

T-01 begins when Main Steam line Break / Leak is indicated or reported, i.e., steam entering the turbine building from Area 5.

Due to the presence of steam, the Turbine Building will no longer be habitable.

Note: 4-MSLB 1-Y, 2-Y, 3-Y, 4-Y GE is also a valid path and may be used to classify the event.

Anytime – Collect environmental samples (soil / H₂O).

~1400⁵ – Exercise is terminated.

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 4, 2017, October 31, 2017, and November 15, 2017 and the full-scale plume exercise held on November 14, 2017. These drills and exercise tested the offsite emergency response capabilities of state and local governments in the 10-mile plume emergency planning zone 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 FEMA's Radiological Emergency Preparedness Program Manual, dated January 2016.

3.2 Summary Results of Exercise Evaluation

Table 3.1 presents all the exercise criteria which were scheduled for demonstration during this exercise and 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 Findings assessed and no unresolved Findings from prior exercises)

1– Level 1 Finding assessed

2– Level 2 Finding assessed

P - Planning Issues

N- Not Demonstrated

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DATE: 2017-11-14 SITE: Wolf Creek Generating Station M: Met, L2: Level 2 Finding, L1: Level 1 Finding, P: Plan Issue, N: Not Demonstrated			KS SEOC	Coffey Co. EOC	WC EOP	Dose Assess./FTC	KS RMT #1	KS RMT #2	KS JIC	FSA	WIBW	EWMD	Emporia Fire/EMS	Newman Hospital	Leroy USD #245
Emergency Operations Management															
Mobilization	1a1	M	M	M	M	M	M	M	M	M		M			
Facilities	1b1											M			
Direction & Control	1c1	M	M	M						M		M			
Communications Equipment	1d1	M	M	M	M	M	M	M	M	M		M			
Equipment and Supplies	1e1	M	M	M	M	M	M	M	M	M		M	M	M	M
Protective Action Decision Making															
EW Exp. Control Decisions	2a1		M	M	M										
PARs	2b1	M			M										
PADs	2b2	M	M	M	M										
PADs for Disabled/Functional Needs	2c1		M												
Ingestion PADs	2d1														
RRR Decisions	2e1														
Protective Action Implementation															
EW Exp. Control Implementation	3a1	M	M	M	M	M	M	M		M		M	M	M	M
KI Public/Institutionalized	3b1		M	M											
PAD Imp. Disabled/Functional Needs	3c1		M												
PAD Imp. Schools	3c2														M
TACP Establishment	3d1	M	M							M					
Impediments to Evacuation	3d2	M	M							M					
Implementation of Ingestion PADs	3e1														
Ingestion Strategies and Information	3e2														
Imp. of RRR Decisions	3f1														
Field Measurement and Analysis															
RESERVED	4a1														
Field Team Management	4a2				M										
Field Team Operations	4a3					M	M								
Field Team Sampling	4b1														
Laboratory Operations	4c1														
Emergency Notification and Public Info															
Initial Alert & Notification	5a1	M	M								M				
RESERVED	5a2														
Backup Alert & Notification	5a3														
Exception Area Alerting	5a4														
Subsequent Public Information	5b1	M	M						M		M				
Support Operations/Facilities															
Reception Center Operations	6a1														
EW Monitoring & Decon	6b1											M			
Congregate Care	6c1														
Contaminated Injured Transport & Care	6d1												M	M	

3.3 Criteria Evaluation Summaries

3.3.1 State Jurisdictions

3.3.1.1 Kansas State Emergency Operations Center

The Kansas State Emergency Operations Center (SEOC), located in Topeka, Kansas, had nine State agencies participate in the November 14, 2017 Wolf Creek Generating Station (WCGS) Exercise. In addition, the American Red Cross, FEMA, NRC and Coffey County Emergency Management all had liaisons in the SEOC. All eleven criteria at this location were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

Excellent communication was observed between the State Policy Group and Coffey County Emergency Operations Center. Utilizing an open conference line, this allowed discussion and concurrence of Protection Action Decisions (PADs) to take place in a timely manner.

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.a.1, 3.d.1, 3.d.2, 5.a.1, 5.b.1
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.2 Wolf Creek Emergency Operations Facility

The Wolf Creek Emergency Operations Facility (EOF) is located outside the 10 mile plume EPZ near the junction of State highway 75 and Interstate 35. Personnel at the EOF include staff from Wolf Creek Generating Station (WCGS), Kansas Department of Health & Environment (KDHE), Kansas Division of Emergency Management (KDEM) and Coffey County. These personnel make up a coordination effort to monitor and assess emergency situations at WCGS. All eight criteria in this area were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

During the November 14, 2017 WCGS exercise, the communication and coordination between KDEM and KDHE for Protective Action Recommendations (PARs) was excellent. Communication between the State Emergency Operations Center (SEOC) and the EOF was seamless and very efficient.

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

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- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 3.a.1, 3.b.1
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.3 Kansas Dose Assessment & Field Team Coordination

The Dose Assessment & Field Team Coordination were conducted out of the Wolf Creek Emergency Operations Facility (EOF). With the utilization of joint monitoring teams, dose assessment and field team coordination is a partnership with staff consisting of Kansas Department of Health & Environment (KDHE) and Wolf Creek Generating Station (WCGS). All eight criteria assigned were adequately demonstrated in accordance with the plans, procedures and extent of play agreement.

Excellent communication was observed between KDHE and WCGS field team members while in the field. KDHE dose assessment staff utilized a spreadsheet to calculate field team member dose and then used that calculation to determine the need and recommendation for donning of respirators. This was observed to be very unique and an excellent practice.

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, 4.a.2
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.4 Kansas Joint Radiological Monitoring Team #1

Joint Radiological Monitoring Teams (JRMTs) are dispatched from the Wolf Creek Emergency Operations Facility (EOF). Upon arrival at the EOF, Kansas Department of Health & Environment (KDHE) staff join with Wolf Creek Generating Station (WCGS) staff to form JRMTs. These teams are briefed and deployed to predetermined locations. During the November 14, 2017 exercise, two JRMTs were each evaluated for five criteria. JRMT #1

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adequately demonstrated all five criteria in accordance with the plans, procedures and extent of play agreement.

JRMT #1 communicated and worked well together as a team. Team members demonstrated the ability to be creative and overcome adversity in the field due to misplaced maps and clipboard.

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, 4.a.3
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: 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 Radiological Monitoring Team #2

Joint Radiological Monitoring Teams (JRMTs) are dispatched from the Wolf Creek Emergency Operations Facility (EOF). Upon arrival at the EOF, Kansas Department of Health & Environment (KDHE) staff join with Wolf Creek Generating Station (WCGS) staff to form JRMTs. These teams are briefed and deployed to predetermined locations. During the November 14, 2017 exercise, two JRMTs were each evaluated for five criteria. JRMT #2 adequately demonstrated all five criteria in accordance with the plans, procedures and extent of play agreement.

JRMT #2 demonstrated excellent communications with the field team coordinator. Team members were very familiar with procedures and used them extensively throughout the exercise.

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, 4.a.3
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

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3.3.1.6 Kansas Joint Information Center

The Kansas Joint Information Center (JIC) is located with the Kansas State Emergency Operations Center (SEOC) in Topeka. In addition to the Lead State Public Information Officer (PIO) and State PIO staff, Coffey County and Wolf Creek Generating Station (WCGS) have PIO staff that report to the JIC. Four criteria at the JIC were adequately demonstrated in accordance with the plans, procedures and extent of play agreement.

Staff worked efficiently to prepare and disseminate information as quickly as possible. Excellent demonstration of collaboration between the Lead State PIO and other staff.

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. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.7 Forward Staging Area

The Forward Staging Area (FSA) is located at the junction of Highway 75 and Old State Highway 50, approximately 1.5 miles south of I-35. The State of Kansas deploys three state agencies to this location to stage State resources. These agencies include the Kansas National Guard, Kansas Highway Patrol and the Kansas Department of Wildlife, Parks and Tourism. This location adequately demonstrated seven criteria in accordance with the plans, procedures and extent of play agreement.

An outstanding job was done of organizing the layout of the staging area making it completely functional for all purposes of the November 14, 2017 exercise. All State agencies worked cooperatively in staffing the staging area making it extremely efficient.

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, 3.a.1, 3.d.1, 3.d.2
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None

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- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.8 EAS Station – WIBW

WIBW 580 AM and WIBW 94.5 FM out of Topeka, Kansas are used for the activation of the tone alert radios within the 10-mile plume Emergency Planning Zone (EPZ). 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.

WIBW staff member interviewed was knowledgeable of procedures and station operations.

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

- a. MET: 5.a.1, 5.b.1
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: 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 the Coffey County Courthouse in Burlington, Kansas. There were representatives from numerous County agencies present to assist the Emergency Management staff in the EOC. Coffey County EOC adequately demonstrated all fourteen criteria in accordance with plans, procedures and the extent of play agreement.

Each county agency duty station had available checklists which referenced the location within the county plans and procedures pertinent to each step taken during an emergency exercise. Coffey County also successfully demonstrated the use of the Integrated Public Alert & Warning System (IPAWS) for alert and notification of the public.

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.d.1, 3.d.2, 5.a.1, 5.b.1

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- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.2 Coffey County Emergency Worker Monitoring & Decontamination Center

Coffey County Emergency Worker Monitoring & Decontamination Center (EWMDC) utilizes the Coffey County Road and Bridge Shop located in Burlington Kansas. EWMDC is used to monitor and decontaminate emergency workers and vehicles during a Wolf Creek Generating Station (WCGS) event. Coffey County EWMDC adequately demonstrated all seven criteria in accordance with plans, procedures and the extent of play agreement.

An excellent demonstration of vehicle and personnel monitoring occurred. Staff were thorough and meticulous in their survey techniques.

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

- a. MET: 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.b.1
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.3 Leroy USD #245

Leroy Unified School District (USD) #245 is located within the Wolf Creek Generating Station (WCGS) 10-mile plume Emergency Planning Zone (EPZ). There were three criteria adequately demonstrated by Leroy USD #245.

Staff were extremely knowledgeable of radiological plans and procedures and had ample resources to protect the health and safety of all students.

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

- a. MET: 1.e.1, 3.a.1, 3.c.2
- b. LEVEL 1 FINDINGS: None

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- c. LEVEL 2 FINDINGS: 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 Emporia Fire Department/Lyon County EMS-Ambulance

Emporia Fire Department/Lyon County EMS is located in the host community of Emporia, Kansas. All three criteria were adequately demonstrated in accordance with the plans, procedures and extent of play agreement.

Personnel demonstrated excellent awareness and contamination control throughout the demonstration. Staff followed procedures for patient assessment and transport.

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

- a. MET: 1.e.1, 3.a.1, 6.d.1
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.3.2 Newman Regional Health – REA

Newman Regional Health is located in the host community of Emporia, Kansas. All three criteria were adequately demonstrated in accordance with the plans, procedures and extent of play agreement.

Staff did an excellent job preventing cross-contamination and demonstrated required task with as much realism as possible. Numerous peer checks were made throughout demonstration and communication was very smooth.

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

- a. MET: 1.e.1, 3.a.1, 6.d.1
- b. LEVEL 1 FINDINGS: None
- c. LEVEL 2 FINDINGS: None

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

SECTION 4: CONCLUSION

Based on the results of the November 14, 2017 plume exercise, the offsite radiological emergency response plans and preparedness for the State of Kansas and 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.

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APPENDIX A: 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 plume exercise held on December 8, 2015. A disparity in times is normal given the need for message transmissions and decision-making at the various locales.

Date & Site: November 14, 2017

Wolf Creek Generating Station - Time Line

Emergency Classification Level or Event	Time Utility Declared						
		Coffey	Kansas	Dose	Kansas	Kansas	Wolf
		County	EOF	and	JIC	State	Creek
		EOC		FT Coord.		EOC	FSA
Unusual Event (NOUE)							
Alert (ALERT)							
Site Area Emergency (SAE)	819	835	835	835	919	835	845
General Emergency (GE)	1032	1044	1033	1033	1044	1044	1044
Radiation Release Started	1028	1044	1033	1033		1044	
Radiation Release Terminated							
Facility Declared Operational		855	925		935	933	930
Governor Declared State of Emergency - county		855	1006		934	851	851
1st JRR, CCL - Evacuate		852	902	902		852	
2nd Relocate EW Decon/Road Equipment		930					
1st Protective Action Decision- Evacuate CTR, S1, S2, SW1, SW2		1050	1055	1054		1052	
1st IPAWS Message, Lakes Incident		859				859	
2nd IPAWS Message Evac. CTR, S1, S2, SW1, SW2		1055				1058	
1st Special News Broadcast		1207	1207	1207		1210	
KI Approved		1216				1201	
Exercise Terminated		1301	1302	1300	1300	1300	1300

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APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS

DATE: 11/14/17

SITE: Wolf Creek Generating Station

LOCATION	TEAM LEADER	AGENCY
Coffey County Emergency Operations Center	*Brad Dekorte Larry Broockerd Marcy Campbell Janet Hlavaty-LaPosa	FEMA R6 FEMA HQ ICF FEMA R10
Coffey County Decontamination Center	*Jeff Clark	FEMA R7
EAS Station - WIBW	*Jeff Clark	FEMA R7
Emporia Fire Dept/Lyon County EMS-Ambulance	*Norm Valentine	FEMA R7
Kansas Dose Assessment & Field Team Coordination	*Nan Williams Chuck Hooper	FEMA R6 EPA
Kansas Joint Information Center	*Judy Dodgen Mark Dalton	FEMA R7 ICF
Kansas Joint Radiological Monitoring Team #1	*Timothy Pflieger	FEMA R6
Kansas Joint Radiological Monitoring Team #2	*Lori Harris-Franklin	State of Missouri
Kansas State Emergency Operations Center	*Dan Kanakares Darren Bates Elsa Lopez	FEMA R7 FEMA HQ FEMA R6
Leroy USD #245	*Jeff Clark	FEMA R7
Newman Regional Health - REA	*Jeff Clark	FEMA R7
Wolf Creek Emergency Operations Facility	*Dan Feighert Jill Leatherman	FEMA R8 ICF
Forward Staging Area	*Scott Flowerday	FEMA R6
*Team Leader		

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APPENDIX C: ACRONYMS AND ABBREVIATIONS

Acronym	Description
ANS	Alert and Notification System
CCL	Coffey County Lake
CFR	Code of Federal Regulations
CTMT	Containment
CTR	Center
DA	Dose Assessment
DHS	Department of Homeland Security
DRD	Direct Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMS	Emergency Medical Service
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Extent of Play
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
EW	Emergency Worker
EWMD	Emergency Worker Monitoring and Decontamination Center
FBI	Federal Bureau of Investigation
FEF	Fuel Element Failure
FEMA	Federal Emergency Management Agency
FSA	Forward Staging Area
FTC	Field Team Coordinator
GE	General Emergency
HAB	Hostile Action Based
IC	Incident Commander
ICF	FEMA Contractor
ICP	Incident Command Post
IPAWS	Integrated Public Alert & Warning 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 & Environment
KDWPT	Kansas Department of Wildlife, Parks, and Tourism
KHP	Kansas Highway Patrol

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KI	Potassium Iodide
KNG	Kansas National Guard
MOL	Middle of Life
MDAFW	Motor Driven Auxillary Feedwater
MS-1	Medical Service
MSLB	Main Steam Line Break
NRC	Nuclear Regulatory Commission
OCA	Owner Controlled Area
OOS	Out Of Sequence
ORO	Offsite Response Organization
PAB	Protected Area Boundary
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PIGI	Public Information/Geographic Information System
PIO	Public Information Officer
PPE	Personal Protective Equipment
RCA	Radiological Controlled Area
REA	Radiological Emergency Area
REP	Radiological Emergency Preparedness
RMS	Radiation Monitoring System
RMT	Radiological Monitoring Team
RO	Radiological Officer
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
SFP	Spent Fuel Pool
SGTR	Steam Generator Tube Rupture
SI	Safety Injection
SNB	Special News Broadcast
SRT	Special Response Team
SSFM	Safety System Failure Malfunction
T/ACP	Traffic/Access Control Point
TDAFW	Turbine Driven Auxillary Feedwater
TEDE	Total Effective Dose Equivalent
TLD	Thermoluminescent Dosimeter
WCGS	Wolf Creek Generating Station
WCNOC	Wolf Creek Nuclear Operating Corporation

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