



**FEMA**

July 9, 2012

Mr. Elmo E. Collins  
Regional Administrator  
U.S. NRC Region IV  
1600 East Lamar Boulevard, Suite 400  
Arlington, Texas 76011-4511

Dear Mr. Collins:

Enclosed is the final report for the March 26-27, 2012, exercise of offsite radiological emergency response plans, site-specific to the Fort Calhoun Nuclear Station. The participants in this exercise were the Nebraska Emergency Management Agency and Washington County in Nebraska; and the Iowa Homeland Security & Emergency Management Division and Pottawattamie and Harrison Counties in Iowa. The report was prepared by Federal Emergency Management Agency Region VII staff. The final report will be provided to the states of Nebraska and Iowa.

There were no Deficiencies identified as a result of this exercise. There were two Areas Requiring Corrective Action (ARCA's) which were identified. One of the ARCAs was closed following a re-demonstration. The other ARCA remains open pending the review and closure of the related planning issue. Two planning issues were identified, one is closed the other remains open. There was one ARCA identified at the last Quad Cities Nuclear Station exercise, which was successfully re-demonstrated at this exercise and is now closed.

Based on the results of this exercise, the offsite radiological response plans and preparedness for the State of Nebraska, State of Iowa, and affected local jurisdictions 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 states of Nebraska and Iowa in support of the Fort Calhoun Nuclear Station, granted on July 22, 1981, will remain in effect.

Mr. Elmo E. Collins

Page 2

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](mailto:ron.mccabe@fema.dhs.gov).

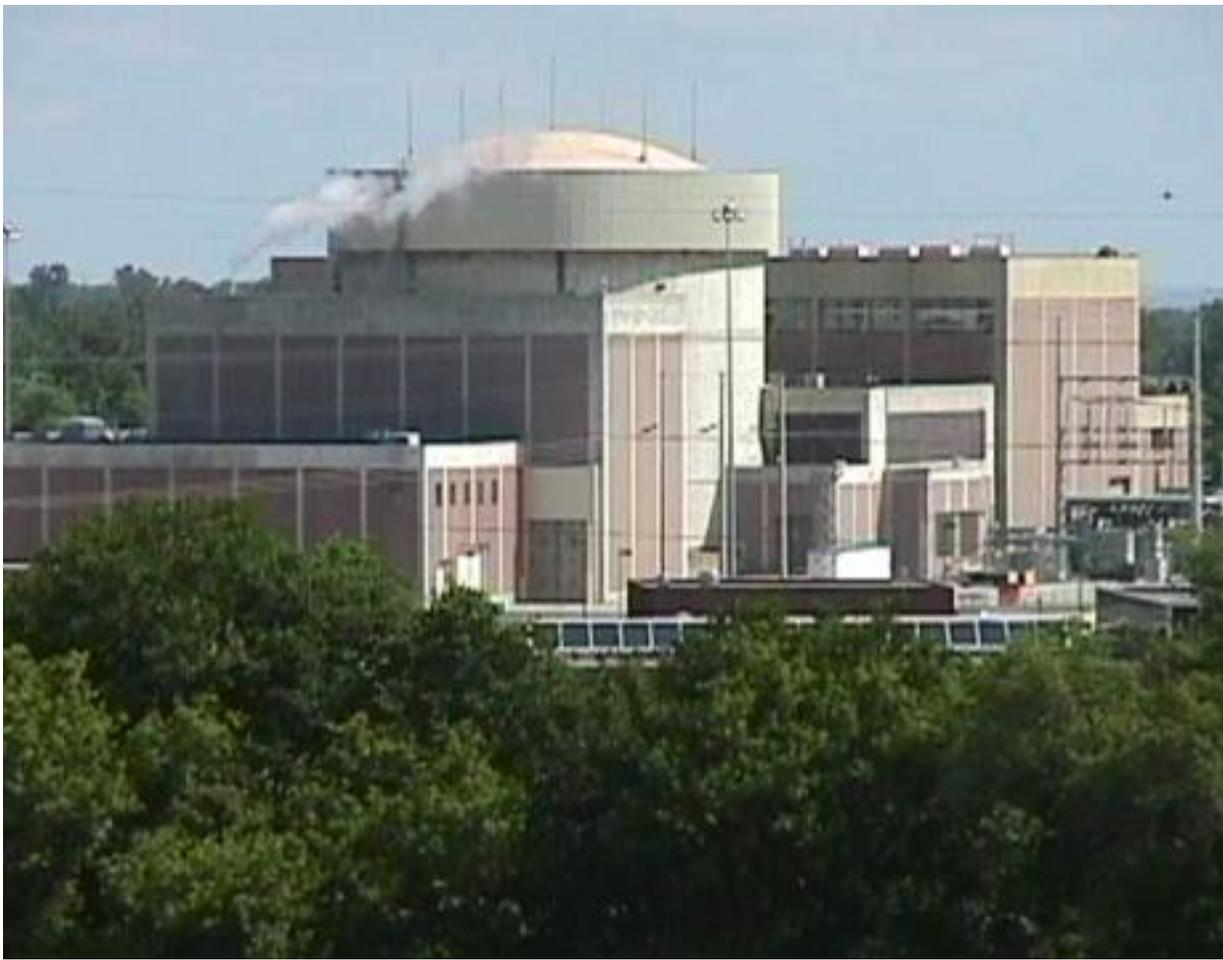
Sincerely,



Beth Freeman  
Regional Administrator

Enclosure

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Fort Calhoun Nuclear Station

# After Action Report/ Improvement Plan

Exercise Date - March 27, 2012

Radiological Emergency Preparedness (REP) Program



**FEMA**

*Published July 09, 2012*

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# Fort Calhoun Nuclear Station After Action Report/Improvement Plan

*Published July 09, 2012*

## Contents

Executive Summary	4
Section 1: Exercise Overview	6
1.1 Exercise Details	6
1.2 Exercise Planning Team Leadership	6
1.3 Participating Organizations	8
Section 2: Exercise Design Summary	10
2.1 Exercise Purpose and Design	10
2.2 Exercise Objectives, Capabilities and Activities	10
2.3 Scenario Summary	11
Section 3: Analysis of Capabilities	14
3.1 Exercise Evaluation and Results	14
3.2 Summary Results of Exercise Evaluation	14
3.3 Criteria Evaluation Summaries	17
3.3.1 Iowa Jurisdictions	17
3.3.1.1 Iowa State Emergency Operations Center	17
3.3.1.2 Iowa Dose Assessment	17
3.3.1.3 Iowa Field Team Coordination	18
3.3.1.4 Iowa Radiological Monitoring Team # 1 - EPZ	18
3.3.1.5 Iowa Radiological Monitoring Team # 2 - EPZ	21
3.3.1.6 Iowa Joint Information Center	22
3.3.2 Risk Jurisdictions	23
3.3.2.1 Harrison County EOC/Forward Command Post	23
3.3.2.2 Missouri Valley School District (Elementary)	24
3.3.2.3 Pottawattamie County EOC	24
3.3.3 Support Jurisdictions	25

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3.3.3.1 Iowa DOT Emergency Worker Decontamination Station	25
3.3.4 Nebraska Jurisdictions	26
3.3.4.1 Nebraska State Emergency Operations Center	26
3.3.4.2 Nebraska Dose Assessment & Field Team Coordination	26
3.3.4.3 Nebraska Radiological Monitoring Team # 1 - EPZ	27
3.3.4.4 Nebraska Radiological Monitoring Team # 2 - EPZ	27
3.3.4.5 Nebraska Joint Information Center	28
3.3.4.6 Nebraska Forward Command Post (GAR)	30
3.3.5 Risk Jurisdictions	30
3.3.5.1 Washington County Emergency Operations Center	30
3.3.6 Private Organizations	31
3.3.6.1 EAS Station KFAB	31
3.3.7 Federal Jurisdictions	33
3.3.7.1 National Weather Service, Valley, Nebraska	33
Section 4: Conclusion	35
Appendix A: Improvement Plan	36
Appendix B: Exercise Timeline	38
Appendix C: Exercise Evaluators and Team Leaders	41

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## EXECUTIVE SUMMARY

On March 27, 2012, 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 Fort Calhoun Nuclear Station. In addition, out of sequence drills were conducted for one emergency worker monitoring and decontamination station on March 26, 2012 and one school district on March 27, 2012. 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 plume exercise at this site was conducted on July 21, 2009. The qualifying emergency preparedness exercise was conducted on July 22, 1981.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise. In the State of Nebraska, the state government and the risk county of Washington participated. In the State of Iowa, the risk counties of Harrison and Pottawattamie participated along with the state government. The efforts 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 of the exercise participants and a collateral duty 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 critical volunteers.

This report contains the evaluation of the biennial exercise and out of sequence drills.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures. There were two Areas Requiring Corrective Action (ARCAs) identified as a result of this exercise. One of these ARCAs was successfully re-demonstrated and is now closed. There were no open ARCAs or deficiencies from the previous Fort Calhoun Nuclear Station exercise. There was one ARCA identified during the previous Quad Cities Nuclear Station exercise which was successfully resolved and is now closed. There were two planning issues identified during this exercise, one of which was closed, while one

remains open.

The final protective action decision (PAD) for Nebraska during the emergency phase was an evacuation of sub areas 1, 3, 4 and 5. The Nebraska cities and villages impacted by the evacuation were Fort Calhoun and Nashville, with approximately 5319 residents in Nebraska affected by the evacuation. The final PAD for Iowa during the emergency phase was an evacuation of subareas 10, 13 and 14. Iowa town impacted by the evacuation was Missouri Valley, with approximately 3194 residents in Iowa affected by the evacuation.

# SECTION 1: EXERCISE OVERVIEW

## 1.1 Exercise Details

**Exercise Name**

Fort Calhoun Nuclear Station

**Type of Exercise**

Plume

**Exercise Date**

March 27, 2012

**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 Fort Calhoun Nuclear Station exercise:

### State Jurisdictions

- Iowa Department of Agriculture and Land Stewardship
- Iowa Department of Human Services
- Iowa Department of Inspection and Appeals
- Iowa Department of Natural Resources
- Iowa Department of Public Health
- Iowa Department of Transportation
- Iowa Department on Aging
- Iowa Homeland Security and Emergency Management Division
- Iowa National Guard
- Iowa State Patrol
- Iowa State University Environmental Health and Safety
- Iowa State University Extension Services
- Iowa Utilities Board
- State Hygienic Laboratory at the University of Iowa
- Nebraska Department Health and Human Services
- Nebraska Department of Roads
- Nebraska Emergency Management Agency
- Nebraska Games and Parks Commission
- Nebraska Governor's Office
- Nebraska State Patrol
- Omaha Public Power District, Fort Calhoun Nuclear Station

### Risk Jurisdictions

- Blair Fire Department
- Blair Police Department
- Blair Schools
- City of Blair (Mayor and City Administrator)
- Council Bluffs Fire/EMS
- Harrison County Board of Supervisors
- Harrison County Emergency Management Agency

Harrison County Engineer  
Harrison County Human Services  
Harrison County Public Health  
Harrison County Sheriff's Office  
Missouri Valley School District  
Mondamin Volunteer Fire Department  
Pottawattamie County 911 Center  
Pottawattamie County Buildings and Grounds Department  
Pottawattamie County Board of Commissioners  
Pottawattamie County Community Emergency Response Team  
Pottawattamie County Conservation Department  
Pottawattamie County Emergency Management Agency  
Pottawattamie County Public Health Department  
Pottawattamie County Roads Department  
Pottawattamie County Sheriff's Office  
Washington County Board of Commissioners  
Washington County Sheriff's Office  
Washington County Emergency Management  
Region 5/6 Emergency Management Coordinator

Support Jurisdictions

Cooper Nuclear Station

Private Organizations

American Red Cross  
KFAB Radio  
Radio Amateur Civil Emergency Service

Federal Jurisdictions

US Dept of Homeland Security, Federal Emergency Management Agency  
US Dept of Commerce, National Oceanic and Atmospheric Administration,  
National Weather Service  
US Dept of Agriculture, Farm Service Agency

## **SECTION 2: EXERCISE DESIGN SUMMARY**

### **2.1 Exercise Purpose and Design**

The purpose of the March 27, 2012, exercise with the Fort Calhoun Nuclear Station (FCNS) was to activate and evaluate portions of the State and local offsite response organizations' emergency plans and associated implementing procedures, in accordance with 44 CFR 350. Further, this exercise tested the FCNS 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 FCNS emergency response capability.

FCNS Emergency Planning staff developed the exercise scenario that was utilized by the exercise controllers and evaluators as the control mechanism for the conduct of the exercise. It was reviewed by a subject matter expert contracted by FEMA prior to final review and approval by FEMA Region VII.

The scenario was designed to provide the basis for the conduct of a simulated radiological accident at the Fort Calhoun Nuclear Station, located near Fort Calhoun in Washington County, Nebraska. The scenario allowed for the evaluation of the capabilities and effectiveness of the emergency response plans and associated implementing procedures for the utility, the states of Nebraska and Iowa, and Washington, Harrison and Pottawattamie Counties.

The scenario, as driven by the FCNS Control Room Simulator, depicted a simulated sequence of events that 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**

The Fort Calhoun Nuclear Station (FCNS) 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 FCNS 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 FCNS Emergency Preparedness Exercise & Drill Program objectives are based on the Federal requirements delineated in 44 CFR 350, as well as on the priorities and procedures detailed in the Radiological Emergency Preparedness plans for the State of Nebraska; the State of Iowa; Washington County in Nebraska; and Pottawattamie and Harrison Counties in Iowa. Additional guidance, provided in NUREG-0654, NUREG-0696, and NUREG- 0737, was utilized in developing these objectives.

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

The objective of this exercise was to test the implementation of the plans and procedures of the participating agencies, and the capability of these agencies to conduct operations in accordance with these plans. This objective is further defined by the criteria evaluated for each participant. A summary of the specific criteria evaluated for each of the participating organizations is listed in Table 3.1.

In addition to the full scale exercise, drills were performed out-of-sequence, which is not concurrent to a full scale exercise, nor synchronized in time with other sites. To compensate for the artificiality of an out-of-sequence drill, the activities for each evaluation included an allowance for simulation. This allowed for the evaluators to focus on the activities specified in the drill criteria.

## **2.3 Scenario Summary**

The following is the scenario provided by Fort Calhoun Nuclear Station (FCNS) and approved by Department of Homeland Security/FEMA for use during the March 27, 2012 plume exercise.

### **Initial Conditions**

The initial conditions establish the plant is operating at 100% Power. FW-10 is tagged out for replacement of the worm gear driving governor. T1A1 is tagged out of service for maintenance. HCV-150 (PCV-102-2 block valve) is closed and caution tagged. TS 2.5 (1) B. entered at 0400

this morning for loss of AFW train. This is a 24 hour LCO. Work on the governor has commenced and is expected to be completed in 5 hours. 72 Hour LCO for T1A-1 and FW-10 being inoperable per TS 2.7(2) b. Control Room has been notified about Sirens 134 and 37 being out of service. Communications and the Washington and Harrison County Sheriffs have been notified.

Meteorological conditions are partly cloudy skies with the wind from the west by northwest (295°) to the east by southeast (115°) at 5-10 mph, 64° temperature.

### Sequence of Events

At 0730 Siren #134 and Siren #37 are reported as non-operational due to an as yet undetermined mechanical issue. Technicians have been contacted by Fort Calhoun Station and are expected to perform maintenance later this afternoon.

The first event will be an RCS leak (unidentified) at 0740 in containment at 14 gpm. Expect SU5 to be called. A Notification of Unusual Event with ERO activation will be triggered. Leakage is from an RCS loop root valve packing leak. After the FW-19 manway is repaired, if an operator is sent out to fill FW-19, Emergency Feed Water Storage Tank, using condensate. FW-663 will have a severe leak from the packing due to the packing gland stud breaking and falling out when the valve is opened.

An FW-19 low level alarm goes off at 0810. At 0815, the PCV-910 the Turbine Bypass Valve, fails to open. At 0830 there is a Feedwater Header Rupture in Room 81. FW-54 fails to start. FW-6 starts but then the bearing gets wiped and it trips.

These events comprise the second event, and meet the Explosion Criteria, triggering a classification of Alert, HA2, EAL1.

At 0830, the Reactor Protection System fails to automatically trip the reactor due to low S/G levels; manual trips at CB4 are successful. This meets the conditions for IC SA2. This would trigger an Alert, if not already called for HA2 above.

A Power Operated Relief Valve, PCV-102-2, fails shut due to thermal binding. HCV-151 is stuck in the shut position. Once-through-cooling cannot be initiated.

The third event occurs when containment radiation levels exceed 40 R/hr and for chemistry sample recirculation line radiation levels exceed 12.1 Rem/hr. This will be the initiating conditions for FS1, Site Area Emergency. Depending on dose assessment, AS1 EAL2 may be called as well.

When sirens are activated for SAE, sirens #258 and #9 do not sound.

With no heat sink Reactor Coolant System temperatures and pressures will rise causing the lifting of the Code Safety Valves RC-141 and RC-142. The Quench Tank Rupture Disk will rupture releasing RCS coolant to the Containment Building. This will result in increased radiation levels inside the Containment Building. RCS sub-cooling will be lost resulting in forming a steam bubble in the reactor vessel and core uncover. Core damage will occur.

At 1045, a dump truck near Logan carrying boulders and quarry rocks lost control and was involved in a single vehicle accident.

By 1100, fuel damage causes hydrogen buildup in CTMT. Explosion causes a breach in a CTMT penetration in Room 69. FG1, General Emergency, conditions are met. AG1 EAL 2 values for dose assessment will be met shortly after 1100.

A vehicle hits a deer on highway 75 between Fort Calhoun and Nashville at 1115. Traffic backs up on Highway 75.

A wind shift at 1230 will trigger a change in PARS.

At or about 1330, controllers will announce the conclusion of the scenario. Restore all facilities.

## **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 March 26-27, 2012 and the full-scale plume exercise held on March 27, 2012 to test the offsite emergency response capabilities of State and local governments in the 10-mile plume EPZ surrounding the Fort Calhoun Nuclear 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. Due to the modification of the report producing software prior to the publication of the final report, the format for reporting the evaluation matches the format as designed in the REP Program Manual October 2011.

### **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 (2 pages)

DATE: 2012-03-27 SITE: Fort Calhoun Nuclear Station, NE  M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Iowa State EOC	IA Dose Assess,	Iowa FTC	IA Rad Tm # 1	IA Rad Tm # 2	IA Joint Info. Ctr	Harrison Cty EOC/FCP	MO Valley School Dist.	DOT EW Decon. Ctr	Pott. County EOC
Emergency Operations Management											
Mobilization	1a1	M	M	M	M	M	M	M		M	M
Facilities	1b1										
Direction & Control	1c1	M						M		M	M
Communications Equipment	1d1	M	M	M	M	M	M	M		M	M
Equipment and Supplies	1e1	M	M	M	M	M	M	M	M	M	M
Protective Action Decision Making											
EW Exp. Control Decisions	2a1		M	M				M			M
PARs	2b1		M	M							
PADs	2b2	M	M					M			M
PADs for Disabled/Functional Needs	2c1							M			M
Ingestion PADs	2d1										
RRR Decisions	2e1										
Protective Action Implementation											
EW Exp. Control Implementation	3a1			M	M	M		M	M	M	M
KI Public/Institutionalized	3b1							M	M		M
PAD Imp. Disabled/Functional Needs	3c1							M			M
PAD Imp. Schools	3c2							M	M		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				P	M					
Field Team Sampling	4b1										
Laboratory Operations	4c1										
Emergency Notification and Public Info											
Initial Alert & Notification	5a1							M			M
RESERVED	5a2										
Backup Alert & Notification	5a3							M			M
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										

Table 3.1 - Summary of Exercise Evaluation (Continued. page 2/2)

DATE: 2012-03-27 SITE: Fort Calhoun Nuclear Station, NE M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Nebraska EOC	NE DA/FTC	NE FT # 1	NE FT # 2	Nebraska JIC	NE FCP (GAR)	KFAB EAS	Natl Weather	Wash. Cty EOC
Emergency Operations Management										
Mobilization	1a1	M	M	M	M	M	M			M
Facilities	1b1									
Direction & Control	1c1	M					M			M
Communications Equipment	1d1	M	M	M	M	M	M			M
Equipment and Supplies	1e1	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			M
Ingestion PADs	2d1									
RRR Decisions	2e1									
Protective Action Implementation										
EW Exp. Control Implementation	3a1		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
Impediments to Evacuation	3d2	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									M
Exception Area Alerting	5a4									
Subsequent Public Information	5b1	M				M	M	A		M
Support Operations/Facilities										
Reception Center Operations	6a1									
EW Monitoring & Decon	6b1									
Congregate Care	6c1									
Contaminated Injured Transport & Care	6d1									

## 3.3 Criteria Evaluation Summaries

### 3.3.1 Iowa Jurisdictions

#### 3.3.1.1 Iowa State Emergency Operations Center

The Iowa State Emergency Operations Center (SEOC), part of the Iowa Homeland Security and Emergency Management Division (HSEMD), is located at Johnston, Iowa.

Ten state agencies participated in the March 27, 2012 Fort Calhoun Nuclear Station (FCNS) exercise. In addition, the American Red Cross, Federal Emergency Management Agency, and the National Weather Service each had liaisons in the SEOC. All criteria at this location were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

Evaluators noted that the Public Information Office staff ensured continuity of communication among multiple locations, and praised Iowa State Patrol's MACH system which provided excellent tracking of personnel and road conditions.

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.2, 3.d.1, 3.d.2, 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 Iowa Dose Assessment

Iowa Dose Assessment is conducted at the State Emergency Operations Center (SEOC) in Johnston, Iowa. All six of the criteria in this area were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. The Iowa Dose Assessment staff were noted for their use of Virtual Private Network (VPN) for sharing dose information with great efficiency and for the excellent use of evacuation time estimates in evacuation decision-making.

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.
- 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 Iowa Field Team Coordination**

Iowa Field Team Coordination is conducted at the Omaha Public Power District Emergency Operating Facility. All seven criteria in this area were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

The Field Team Coordination staff were noted as experienced team members who are knowledgeable of procedures, and demonstrated great coordination with Nebraska and licensee field teams.

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, 3.a.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

### **3.3.1.4 Iowa Radiological Monitoring Team # 1 - EPZ**

All Iowa Field Monitoring Teams reported to and were dispatched from Omaha Public Power District's Emergency Operating Facility by the Iowa Field Team Coordinator. Iowa Radiological Monitoring Team # 1 adequately demonstrated four of its five criteria in accordance with the plans, procedures, and extent of play agreement.

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Iowa Radiological Monitoring Team # 1 was described as a cohesive team equipped with maps which are both current and easy to read.

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.
- b. AREAS REQUIRING CORRECTIVE ACTION: 4.a.3.

ISSUE NO.: 25-12-4a3-A-01

**CRITERION:** Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low-background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media.

**CONDITION:** The Iowa Radiological Monitoring Team #1 (Blue Team), did not use appropriate contamination controls when removing the iodine sample media from the air sample head. The iodine sample cartridge was handled with potentially contaminated gloves.

**POSSIBLE CAUSE:** The Radiological Monitoring Team's Air Sampling Procedure did not specify how to disassemble the sample head and handle sample media to prevent cross-contamination of the sample. In addition, the team was not adequately trained on how to accomplish this task.

**REFERENCE:** NUREG 0654, I.9; Field Team Procedure Manual, Air Sampling Procedures, 09-2010

**EFFECT:** A cross-contaminated sample could result in falsely elevated counts when the sample was analyzed. The inaccurate iodine sample result could be used in making dose projections and subsequent protective action recommendations.

**CORRECTIVE ACTION DEMONSTRATED:** A timeout was called to discuss the importance of sample handling techniques and the need to take measures to prevent cross-contamination of sample media. Radiological Monitoring Team members

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discussed various methods that could be used to ensure the charcoal cartridge was not touched with potentially contaminated gloves. The team then re-assembled the air sample head and redemonstrated iodine sample media handling and packaging. The team member who disassembled the air sample head appropriately changed gloves before removing and touching the iodine sample media. He then carefully handled the sample while transferring to a clean plastic bag. The demonstrated practice was appropriate to ensure the iodine sample would not be cross-contaminated while handling. This issue is considered corrected and closed.

- c. DEFICIENCY: None
- d. PLAN ISSUES: 4.a.3.

ISSUE NO.: 25-12-4a3-P-02

CRITERION: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low-background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media.

CONDITION: The Iowa Radiological Monitoring Team #1 (Blue Team) did not take ground level open/closed window readings with the side window Geiger-Muller detector "open window" facing the ground. When taking ground level measurements, one individual pointed the window up; the other team member pointed the window sideways.

POSSIBLE CAUSE: The Iowa Radiological Monitoring Team #1 (Blue Team) survey procedure does not specify which way the detector window should be oriented when taking open and closed window readings at waist and ground level.

REFERENCE: NUREG 0654, I.11; Field Team Procedure Manual, Ludlum 2241-3 Survey Meter Operation, 02-2012

EFFECT: There was no effect during this exercise, as the RMT was never in the plume deposition area. If the team was in the plume deposition area and the detector

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was not oriented properly while taking measurements, the ground level measurement would not provide a reading that could be used to accurately assess whether there was ground contamination resulting in “ground shine.”

RECOMMENDATION: Modify the Radiological Monitoring Team procedure to include guidance on which way to orient the side window Geiger-Muller detector when taking open and closed window radiation measurements. When taking a ground level measurement, the Geiger-Muller detector “open window” measurement should be taken with the open window facing the ground.

**SCHEDULE OF CORRECTIVE ACTIONS:**

The planning issue identified for the Iowa Radiological Monitoring Team #1 (Blue Team) concerning the failure to take ground level open/closed window readings with the side window Geiger-Muller detector "open window" facing the ground, will be addressed in a modification to the standard operating procedure (SOP). The modification will be made to the SOP on or before October 1, 2012.

FEMA must review and approve the modified procedure in order for this issue to be closed.

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

### **3.3.1.5 Iowa Radiological Monitoring Team # 2 - EPZ**

All Iowa Field Monitoring Teams reported to and were dispatched from Omaha Public Power District's Emergency Operating Facility by the Iowa Field Team Coordinator. Iowa Radiological Monitoring Team #2 adequately demonstrated all five of its criteria in accordance with the plans, procedures, and extent of play agreement.

Iowa Radiological Monitoring Team # 2 demonstrated great teamwork among its members.

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. 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 Iowa Joint Information Center**

The Iowa Joint Information Center (JIC) is located at the Omaha Public Power District Energy Plaza in Omaha, Nebraska.

In addition to the Lead State Public Information Officer (PIO) and staff run an operation that includes a public inquiry hotline that is staffed with operators when there is an emergency. All criteria in the JIC were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. One Area Requiring Corrective Action from a previous Quad Cities exercise was successfully redemonstrated.

The Iowa JIC staff coordinated well with Nebraska JIC and Utility JIC staff and the State of Iowa Spokesperson demonstrated high credibility during news conferences.

Iowa JIC staff successfully resolved prior issue number 51-10-5b1-A-01 from a previous Quad Cities Nuclear Generating Station exercise, as described below:

ISSUE: Mock media did not receive News Releases nos. 3 and 4.

There seemed to be a breakdown in distribution of some news releases in the JIC. As each was received in the PIO workroom, the Iowa staff assistant made copies and walked one to the utility's administration team for further copying and internal distribution, per procedure, including providing copies to the mock media in the briefing room. Most were handled expeditiously. However, the last two news releases were not provided to the mock media. News release no. 4, in particular, contained a great deal of important information for prospective evacuees. Some, but not all, of this information was provided during the oral briefing because the PIO assumed the media had the news release and did not have to repeat it verbatim. They did not and, as a result, the public missed out on this essential information.

**CORRECTIVE ACTION DEMONSTRATED:** To correct this ARCA, the State of Iowa PIO team worked closely with the administrative staff at the JIC. The State of Iowa PIO staff took each news release to JIC administrative staff and requested it be copied and distributed. The State of Iowa PIO also checked the media work area to ensure the releases were made available to the media. The news releases were logged twice - once into WebEOC by the Iowa SEOC staff and once into the JIC administrative log - before being copied and distributed.

This issue was successfully re-demonstrated and is now closed.

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

### **3.3.2 Risk Jurisdictions**

#### **3.3.2.1 Harrison County EOC/Forward Command Post**

The Harrison County Emergency Operations Center (EOC) is located in Logan, Iowa, outside of the 10-mile Emergency Planning Zone (EPZ). Several County agencies work alongside the Emergency Management staff in the EOC during emergencies.

At the Harrison County EOC, 16 criteria were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. Dispatch showed great ability to multi-task and accurately check incoming/outgoing information.

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, 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 Missouri Valley School District (Elementary)**

The Missouri Valley School District includes the town of Missouri Valley and some surrounding unincorporated areas, has combined enrollment of approximately 857 students in three schools from pre-kindergarten to 12th grade. The school leadership and staff adequately demonstrated all four of its evaluated criteria.

The evaluator noted that the Superintendent was quite knowledgeable and that the procedures in use by the District are very well written.

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 Pottawattamie County EOC**

The Pottawattamie County Emergency Operations Center (EOC) is located in Council Bluffs, Iowa, outside of the 10-mile Emergency Planning Zone (EPZ). Six County agencies join the Emergency Management staff in the EOC during emergencies.

At the Pottawattamie County EOC, 16 criteria were adequately demonstrated in accordance with

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the plans, procedures, and extent of play agreement. The Emergency Management Coordinator exhibited excellent leadership, and the Radiological Officer conducted a very thorough briefing.

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

### **3.3.3 Support Jurisdictions**

#### **3.3.3.1 Iowa DOT Emergency Worker Decontamination Station**

The Emergency Worker Monitoring and Decontamination Station for Iowa responders to incidents involving FCNS is located at the Iowa Department of Transportation facility on Highway 30, northeast of the town of Missouri Valley.

All six of the criteria in this area were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

Evaluators noted that good briefings were delivered by Radiological Officer and Fire Chief. The staff are very knowledgeable on monitoring and decontamination procedures.

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, 6.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

### **3.3.4 Nebraska Jurisdictions**

#### **3.3.4.1 Nebraska State Emergency Operations Center**

The Nebraska State Emergency Operations Center (SEOC), located in Lincoln, NE, had eight State agencies participate in the March 27, 2012 Fort Calhoun Nuclear Station exercise. In addition, the American Red Cross, FEMA, and the NRC all had liaisons in the SEOC. All eight criteria at this location were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

Evaluators noted great preplanning efforts on Traffic and Access Control Points and complimented the coordination between the State Patrol and Department of Agriculture on implementing the embargo.

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.2, 3.d.1, 3.d.2, 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

#### **3.3.4.2 Nebraska Dose Assessment & Field Team Coordination**

The dose assessment and field team coordination are conducted out of the Omaha Public Power District Emergency Operations Facility in Omaha, NE. All eight criteria in this area were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

The Dose Assessment and Field Team Coordination staff mobilized teams to maximize information gathering, and coordinated well with counterparts with Iowa and the utility.

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

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- 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. 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

### **3.3.4.3 Nebraska Radiological Monitoring Team # 1 - EPZ**

All Field Monitoring Teams reported to and were dispatched from Omaha Public Power District's Emergency Operating Facility. Nebraska Radiological Monitoring Team #1 adequately demonstrated all five of its criteria in accordance with the plans, procedures, and extent of play agreement.

The team was noted for maintaining effective communications with the Field Team Coordinator and for good utilization of their procedural manuals.

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. 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

### **3.3.4.4 Nebraska Radiological Monitoring Team # 2 - EPZ**

All Field Monitoring Teams reported to and were dispatched from Omaha Public Power District's Emergency Operating Facility. Nebraska Radiological Monitoring Team #2 adequately demonstrated all five of its criteria in accordance with the plans, procedures, and extent of play agreement.

The team was cited as demonstrating excellent use of radio procedures and thorough knowledge of operating survey equipment.

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. 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

### **3.3.4.5 Nebraska Joint Information Center**

The Nebraska Joint Information Center (JIC) is located at the Omaha Public Power District Energy Plaza in Omaha, Nebraska.

In addition to the Lead State Public Information Officer (PIO) and State PIO staff, the Utility has PIO staff that report to the JIC. The operation includes a public inquiry hotline that is staffed with operators when there is an emergency. Four criteria in the JIC were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement.

Evaluators witnessed excellent coordination among the Nebraska, Iowa and Utility JIC staff and clear and concise media briefings.

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: 5.b.1.

ISSUE NO.: 25-12-5b1-P-03

CRITERION: OROs provide accurate emergency information and instructions to the public and news media in a timely manner.

CONDITION: Press Releases # 1, 2, and 4 contained confusing information in the area of information to consider when evacuating. During the initial EAS and Special News Broadcast(SNB) Message simulated broadcast at 0955, the public was notified for farmers to place livestock on stored feed and water for the entire Emergency Planning Zone. However, in the above press releases the providing of shelter was again indicated for LIVESTOCK as well as pets. Livestock should have not been mentioned in this release as the individuals need to be evacuating. The Nebraska PIO, during each media briefing indicated that individuals in the affected sub zones should stop dealing with livestock and begin evacuation.

POSSIBLE CAUSE: The PIO staff transferred the indicated information from the Special News Broadcast by the EAS Station, at 1031 into the press releases.

REFERENCE: Nebraska pre-scripted SNB messages and press releases.

EFFECT: This could have confused individuals being instructed to evacuate to continue to place LIVESTOCK on stored feed and water versus beginning their evacuation procedures in a timely manner.

CORRECTIVE ACTION DEMONSTRATED: The State of Nebraska believes that what is presently depicted in its SNBs and press releases is following Public Law 109-308, "Pets Evacuation and Transportation Standards Act of 2006" and FEMA draft CPG-302, dated March 2009. Nebraska believes what it stated in the press releases and SNBs is clear in its definition of what are considered pets allowed to be evacuated and what pets such as "livestock" may not. Nebraska welcomes any recommendations from FEMA Region VII that can provide better clarification in the press releases and SNBs pertaining to pet livestock and come to a solution that recognizes that "livestock" may be considered by farmer and rancher families as pets but that in evacuation they would not be allowed to be evacuated unless prior arrangements have been made.

Based upon the above response from the State of Nebraska, FEMA agrees to close the plan issue at this time.

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

### **3.3.4.6 Nebraska Forward Command Post (GAR)**

The Nebraska Forward Command Post is located at the Omaha Public Power District (OPPD) Emergency Operating Facility (EOF) in Omaha, Nebraska. It serves as the primary coordination point for the Nebraska Governor's Authorized Representative (GAR) and staff, a joint operations center for OPPD, Nebraska and Iowa unified command, and a rally point for field team operations for Nebraska and Iowa field monitoring teams.

The Nebraska Forward Command Post team successfully demonstrated all eleven criteria.

GAR Staff worked well as a team and demonstrated good use of advancing technology.

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, 2.c.1, 3.a.1, 3.b.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

### **3.3.5 Risk Jurisdictions**

#### **3.3.5.1 Washington County Emergency Operations Center**

The Washington County Emergency Operations Center (EOC) is located in Blair, NE within the 10-mile Emergency Planning Zone (EPZ). Several County agencies supported the Emergency Management staff in the EOC during exercise.

At the Washington County EOC, all 16 criteria were adequately demonstrated in accordance with the plans, procedures, and extent of play agreement. In addition to excellent direction and control, there was exceptional team work demonstrated among the County organizations. The

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entire staff was very knowledgeable of their plans and procedures.

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

### **3.3.6 Private Organizations**

#### **3.3.6.1 EAS Station KFAB**

KFAB Radio is a private radio broadcasting station, part of the Clear Channel communications group. It is located in Omaha, Nebraska and serves communities throughout eastern Nebraska and western Iowa. KFAB demonstrated active commitment to its community.

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

- a. MET: 5.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: 5.b.1.

ISSUE NO.: 25-12-5b1-A-04

CRITERION: OROs provide accurate emergency information and instructions to the public and news media in a timely manner.

CONDITION: A special news broadcast (SNB) with incorrect Nebraska information was broadcast instead of the correct one for Iowa.

POSSIBLE CAUSE: In their plans, both Iowa and Nebraska use the same consecutive numbering system for their SNBs. Without clearly distinguishing the two states' messages, and giving precise instructions, the potential exists for the station to read a message for the wrong State. As a result, the station broadcast Nebraska

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message #4 at 1039 instead of Iowa message #4. Even though station personnel were sufficiently in doubt to phone Harrison County for verification, they were never explicitly directed to read the one for the correct State.

REFERENCE: NUREG-0654 E 5, 6, 7; State of Iowa Emergency Alert System Manual in support of Fort Calhoun Nuclear Station; Nebraska Radiological Emergency Response Plan, Annex J.

EFFECT: As they believed they were instructed, station personnel broadcast Nebraska SNB message #4 which is a Site Area Emergency follow-up message and contains no protective actions. The correct Iowa SNB #4 instructs the public to evacuate sub-area #10. As a direct result of failing to initially broadcast the correct message, the residents of sub-area #10 were delayed in receiving evacuation instructions and, instead of evacuating immediately, were provided with a false sense of security.

**REDEMONSTRATION:**

Shortly after the incorrect message was aired, the evaluator asked the staff if they were confident that they had broadcast the correct message. After further discussion, the error became clear and they identified the correct message in the Iowa plan. Following instructions to air at 15 minute intervals, they broadcast the correct Iowa version at 1047 and 1102.

RECOMMENDATION: The issue was recognized and corrected in subsequent airings. However, because the EAS station broadcasts to two states, relies on two plans, and receives instructions from two (and potentially more) official sources, there exists a high probability for error in selecting the correct messages. While it was corrected in this exercise, it could happen again with different personnel.

The states should agree on a system that uniquely numbers every EAS and SNB to preclude the possibility of confusion. One way is to prefix all Iowa messages with the letter I (as in I-1, I-5), and Nebraska messages with N (as in N-1, N-5). Other possibilities may include faxing the appropriate messages to the station or attaching the correct file to an e-mail. Hard copy can always be available should communications fail. The specific solution is less important than explicitly

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identifying the precise message. Once an appropriate system is agreed upon, the revised plans and procedures should be distributed to all parties, particularly the radio station, and all staff trained in their use.

#### SCHEDULE OF CORRECTIVE ACTIONS:

The issue identified for KFAB Radio concerning a Special News Broadcast (SNB) with incorrect Nebraska information being broadcast instead of the correct Iowa message, will be resolved by the State of Iowa re-numbering the SNB messages with a unique message identifier. This should eliminate confusion between the State of Iowa and State of Nebraska SNB messages. This will be accomplished by October 1, 2012.

As Iowa has agreed to renumber their EAS and SNB messages, Nebraska believes there is no need for Nebraska to renumber their messages.

FEMA must review and approve the re-numbered Iowa EAS Messages in order for this issue to be closed.

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

### **3.3.7 Federal Jurisdictions**

#### **3.3.7.1 National Weather Service, Valley, Nebraska**

The National Weather Service (NWS) Office is located near Valley, Nebraska. The single criteria for the NWS was adequately demonstrated.

The staff at the NWS are very knowledgeable of station procedures and utilizes well written and effective procedures.

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

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

## SECTION 4: CONCLUSION

Based on the results of this exercise and out of sequence drills, the offsite radiological emergency response plans and preparedness for the states of Nebraska and Iowa and the affected local jurisdictions, site-specific to the Fort Calhoun Nuclear Station, 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 at the site. Therefore, the Title 44 CFR, Part 350, approval of the offsite radiological emergency response plans and preparedness for the states of Nebraska and Iowa, site-specific to the Fort Calhoun Nuclear Station, granted on December 17, 1984 and May 20, 1987, respectively, will remain in effect.

## APPENDIX A: IMPROVEMENT PLAN

<b>Issue Number: 25-12-5b1-A-04</b>		<b>Criterion: 5b1</b>	
<b>ISSUE:</b> A special news broadcast (SNB) with incorrect Nebraska information was broadcast instead of the correct one for Iowa.			
<b>RECOMMENDATION:</b> The issue was recognized and corrected in subsequent airings. However, because the EAS station broadcasts to two states, relies on two plans, and receives instructions from two (and potentially more) official sources, there exists a high probability for error in selecting the correct messages. While it was corrected in this exercise, it could happen again with different personnel.			
The states should agree on a system that uniquely numbers every EAS and SNB to preclude the possibility of confusion. One way is to prefix all Iowa messages with the letter I (as in I-1, I-5), and Nebraska messages with N (as in N-1, N-5). Other possibilities may include faxing the appropriate messages to the station or attaching the correct file to an e-mail. Hard copy can always be available should communications fail. The specific solution is less important than explicitly identifying the precise message. Once an appropriate system is agreed upon, the revised plans and procedures should be distributed to all parties, particularly the radio station, and all staff trained in their use.			
<b>SCHEDULE OF CORRECTIVE ACTIONS:</b>			
The issue identified for KFAB Radio concerning a Special News Broadcast (SNB) with incorrect Nebraska information being broadcast instead of the correct Iowa message, will be resolved by the State of Iowa re-numbering the SNB messages with a unique message identifier. This should eliminate confusion between the State of Iowa and State of Nebraska SNB messages. This will be accomplished by October 1, 2012.			
As Iowa has agreed to renumber their EAS and SNB messages, Nebraska believes there is no need for Nebraska to renumber their messages.			
FEMA must review and approve the re-numbered Iowa EAS Messages in order for this issue to be closed.			
<b>CORRECTIVE ACTION DESCRIPTION:</b>			
<b>CAPABILITY:</b>		<b>PRIMARY RESPONSIBLE AGENCY:</b>	
<b>CAPABILITY ELEMENT:</b>		<b>START DATE:</b>	
<b>AGENCY POC:</b>		<b>ESTIMATED COMPLETION DATE:</b>	

<b>Issue Number: 25-12-4a3-P-02</b>		<b>Criterion: 4a3</b>	
<p><b>ISSUE:</b> The Iowa Radiological Monitoring Team #1 (Blue Team) did not take ground level open/closed window readings with the side window Geiger-Muller detector "open window" facing the ground. When taking ground level measurements, one individual pointed the window up; the other team member pointed the window sideways.</p>			
<p><b>RECOMMENDATION:</b> Modify the Radiological Monitoring Team procedure to include guidance on which way to orient the side window Geiger-Muller detector when taking open and closed window radiation measurements. When taking a ground level measurement, the Geiger-Muller detector "open window" measurement should be taken with the open window facing the ground.</p>			
<p><b>SCHEDULE OF CORRECTIVE ACTIONS:</b>                  The planning issue identified for the Iowa Radiological Monitoring Team #1 (Blue Team) concerning the failure to take ground level open/closed window readings with the side window Geiger-Muller detector "open window" facing the ground, will be addressed in a modification to the standard operating procedure (SOP). The modification will be made to the SOP on or before October 1, 2012.</p>			
<p>FEMA must review and approve the modified procedure in order for this issue to be closed.</p>			
<p><b>CORRECTIVE ACTION DESCRIPTION:</b></p>			
<b>CAPABILITY:</b>		<b>PRIMARY RESPONSIBLE AGENCY:</b>	
<b>CAPABILITY ELEMENT:</b>		<b>START DATE:</b>	
<b>AGENCY POC:</b>		<b>ESTIMATED COMPLETION DATE:</b>	

## 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 Fort Calhoun Nuclear Station exercise held on March 27, 2012. A disparity in times is normal given the need for message transmissions and decision-making at the various locales.

Table 1 - Exercise Timeline  
DATE: 2012-03-27, SITE: Fort Calhoun Nuclear Station, NE

Emergency Classification Level or Event	Time Utility Declared	Iowa State EOC	IA Dose Assess,	Iowa FTC	IA Rad Tm # 1	IA Rad Tm # 2	IA Joint Info. Ctr
Unusual Event	0810	0827	0830	0840	1002	1002	0820
Alert	0836	0850	0850	0910	0845	1002	0836
Site Area Emergency	0931	0951	0951	1002	0947	1002	0935
General Emergency	1010	1020	1022	1014	1029	1029	1022
Simulated Rad. Release Started	1102		1117	1102	1106	1106	
Simulated Rad. Release Terminated	n/a		1331	N/A	N/A	N/A	
Facility Declared Operational		1013		0857			0905
Declaration of State of Emergency		0933					0938
Exercise Terminated		1331	1331	1330	1327	1346	1339
Precautionary Action - SAE - Dairy Animals Stored Feed and Water		0951	0951	0910			
1st Siren Activation		0955					
Initial EAS Message and SNB		1000					
1st Protective Action Decision - Nebraska Evacuate Subzones 1 and 4							
1st Nebraska Siren Activation							
1st Nebraska EAS and SNB Message							
1st Protective Action Iowa - Evacuate Subzones 10		1033	1033	1040			
1st Iowa Siren Activation		1045					
1st Iowa EAS and SNB Message		1053					
2nd Iowa Protective Action - Evacuate 10, 13, & 14		1111					
2nd Iowa Siren Activation		1135					
2nd Iowa EAS and SNB Message		1140					
2nd Protective Action Decision - Nebraska Evacuate Subzones 1, 3, 4 and 5							
2nd Nebraska Siren Activation							
2nd Nebraska EAS or SNB Message							
Nebraska Embargo Decision (Final)							
KI Administration Decision:		1111	1111	1117	1124	1124	

**Table 1 - Exercise Timeline**  
**DATE: 2012-03-27, SITE: Fort Calhoun Nuclear Station, NE**

Emergency Classification Level or Event	Time Utility Declared	Harrison Cty EOC/FCP	Pott. County EOC	Nebraska EOC	NE DA/ FTC	NE FT # 1	NE FT # 2
Unusual Event	0810	0823	0823	0820	0827	0810	0810
Alert	0836	0852	0853	0854	0850	0907	0907
Site Area Emergency	0931	0942	0945	0942	0935	0943	0943
General Emergency	1010	1020	1024	1019	1014	1017	1017
Simulated Rad. Release Started	1102	1120	1120	1214	1103	1104	1104
Simulated Rad. Release Terminated	n/a	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		0942	0850	0850	0910		
Declaration of State of Emergency		1000	0933	0943	N/A		
Exercise Terminated		1330	1333	1331	1330	1342	1339
Precautionary Action - SAE - Dairy Animals Stored Feed and Water		0951	0951	N/A	0945		
1st Siren Activation		0955	0955	0951	N/A		
Initial EAS Message and SNB		1000	1000	1000	N/A		
1st Protective Action Decision - Nebraska Evacuate Subzones 1 and 4				N/A	1019		
1st Nebraska Siren Activation				1024	N/A		
1st Nebraska EAS and SNB Message				1032	N/A		
1st Protective Action Iowa - Evacuate Subzones 10		1033	1033				
1st Iowa Siren Activation		1045	1045				
1st Iowa EAS and SNB Message		1053	1053				
2nd Iowa Protective Action - Evacuate 10, 13, & 14		1111	1111				
2nd Iowa Siren Activation		1135	1135				
2nd Iowa EAS and SNB Message		1140	1040				
2nd Protective Action Decision - Nebraska Evacuate Subzones 1, 3, 4 and 5				N/A	1235		
2nd Nebraska Siren Activation							
2nd Nebraska EAS or SNB Message				1245			
Nebraska Embargo Decision (Final)				1139			
KI Administration Decision:		1110	1127	1022	1004	1005	1005

**Table 1 - Exercise Timeline**  
**DATE: 2012-03-27, SITE: Fort Calhoun Nuclear Station, NE**

Emergency Classification Level or Event	Time Utility Declared	Nebraska JIC	NE FCP (GAR)	KFAB EAS	Natl Weather	Wash. Cty EOC
Unusual Event	0810	0820	0823	NA	NA	0821
Alert	0836	0836	0853			0850
Site Area Emergency	0931	0935	0937			0942
General Emergency	1010	1022	1024			1020
Simulated Rad. Release Started	1102		1116			1118
Simulated Rad. Release Terminated	n/a					N/A
Facility Declared Operational		0905	0910			0853
Declaration of State of Emergency		0932	0943			0943
Exercise Terminated		1339	1330			1330
Precautionary Action - SAE - Dairy Animals Stored Feed and Water						0945
1st Siren Activation						0951
Initial EAS Message and SNB				1000	0955	0955
1st Protective Action Decision - Nebraska Evacuate Subzones 1 and 4			1022			1022
1st Nebraska Siren Activation						1024
1st Nebraska EAS and SNB Message				1032		1031
1st Protective Action Iowa - Evacuate Subzones 10						
1st Iowa Siren Activation						
1st Iowa EAS and SNB Message				1053		
2nd Iowa Protective Action - Evacuate 10, 13, & 14						
2nd Iowa Siren Activation						
2nd Iowa EAS and SNB Message				1140		
2nd Protective Action Decision - Nebraska Evacuate Subzones 1, 3, 4 and 5			1240			1240
2nd Nebraska Siren Activation						1242
2nd Nebraska EAS or SNB Message				1245		1245
Nebraska Embargo Decision (Final)			1116			1128
KI Administration Decision:			1006			1015

## 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, Regional Assistance Committee (RAC) members from other Federal agencies and the State of Missouri, along with subject matter expert contractors from ICF, Inc.

DATE: 2012-03-27, SITE: Fort Calhoun Nuclear Station, NE

LOCATION	EVALUATOR	AGENCY
Iowa State Emergency Operations Center	*Jeff Clark Brad DeKorte David Jeremy	FEMA RVII FEMA RVI FEMA HQ
Iowa Dose Assessment	*Chuck Hooper	EPA
Iowa Field Team Coordination	*Scott Flowerday	FEMA RVI
Iowa Radiological Monitoring Team # 1 - EPZ	*Marcy Campbell	ICFI
Iowa Radiological Monitoring Team # 2 - EPZ	*Lori Harris	MO DHSS
Iowa Joint Information Center	*Bill Bischof Cara Christianson-Riley	FEMA RVI FEMA RVII
Nebraska State Emergency Operations Center	*Linda Gee James Greer	FEMA RVI ICFI
Nebraska Dose Assessment & Field Team Coordination	*Nan Calhoun	FEMA RVI
Nebraska Radiological Monitoring Team # 1 - EPZ	*Reggie Cope	FDA
Nebraska Radiological Monitoring Team # 2 - EPZ	*Scotty Hargrave	FDA
Nebraska Joint Information Center	Cara Christianson-Riley *Joe Schulte	FEMA RVII FEMA RVII
Nebraska Forward Command Post (GAR)	*Audie Canida Sharron McDuffie	FEMA RVII FEMA RVII
Harrison County EOC/Forward Command Post	Jill Leatherman *Timothy Pflieger Kent Tosch	ICFI FEMA RVI ICFI
Missouri Valley School District (Elementary)	Kent Tosch	ICFI
Pottawattamie County EOC	Mark Dalton Judy Dodgen *Jeffry McSpaden	ICFI FEMA RVII US DOT
Washington County Emergency Operations Center	*Rex Jennings Melissa Savilonis Barbara Thomas	FEMA RVII FEMA - RI FEMA RI
Iowa DOT Emergency Worker Decontamination Station	Cara Christianson-Riley *Joe Schulte	FEMA RVII FEMA RVII
EAS Station KFAB	*Michael Meshenberg	ICFI
National Weather Service, Valley, Nebraska	*Dan Feighert	FEMA RVIII
* Team Leader		

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