



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

February 13, 2002

Mr. R. T. Ridenoure
Division Manager - Nuclear Operations
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

SUBJECT: FEDERAL EMERGENCY MANAGEMENT AGENCY'S REPORT

Dear Mr. Ridenoure:

Enclosed is a copy of the Federal Emergency Management Agency's (FEMA) exercise evaluation report of the October 23, 2001, emergency preparedness exercise at the Fort Calhoun Nuclear Station.

The report indicates that FEMA observed one deficiency during the exercise, but it was corrected during the exercise and was closed.

The purpose of this letter is to transmit to you the results of the FEMA evaluation of the emergency exercise. No response to the NRC is required.

If you have any further questions, please contact Ryan E. Lantz at (817) 860-8158 of my staff.

Sincerely,

A handwritten signature in cursive script, appearing to read "Gail M. Good".

Gail M. Good, Chief
Plant Support Branch
Division of Reactor Safety

Enclosure:
As stated

Omaha Public Power District

-2-

cc w/o enclosure:

Mark T. Frans, Manager
Nuclear Licensing
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

James W. Chase, Division Manager
Nuclear Assessments
Fort Calhoun Station
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

David J. Bannister, Manager - Fort Calhoun Station
Omaha Public Power District
Fort Calhoun Station FC-1-1 Plant
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

James R. Curtiss
Winston & Strawn
1400 L. Street, N.W.
Washington, D.C. 20005-3502

Chairman
Washington County Board of Supervisors
Washington County Courthouse
P.O. Box 466
Blair, Nebraska 68008

Sue Semerena, Section Administrator
Nebraska Health and Human Services System
Division of Public Health Assurance
Consumer Services Section
301 Centennial Mall, South
P.O. Box 95007
Lincoln, Nebraska 68509-5007

Training, Exercises, & Evaluation
Branch Chief
FEMA Region VII
2323 Grand Blvd., Suite 900
Kansas City, Missouri 64108-2670

Electronic distribution from ADAMS by RIV:

Regional Administrator (**EWM**)

DRP Director (**KEB**)

DRS Director (**ATH**)

Senior Resident Inspector (**WCW**)

Branch Chief, DRP/C (**KMK**)

Senior Project Engineer, DRP/C (**vacant**)

Staff Chief, DRP/TSS (**PHH**)

RITS Coordinator (**NBH**)

Jim Isom, Pilot Plant Program (**JAI**)

State Liaison Officer (**WAM**)

RidsNrrDipmLipb

DOCUMENT: S:\DRS\DRSLTRS\FCS FEMA REORT 01LTR.WPD

RIV:PSB	C:DRS/PSB			
RELantz:nh	GMGood			
/RA/	/RA/			
02/13/02	02/13/02			

OFFICIAL RECORD COPY

T=Telephone

E=E-mail

F=Fax



Exercise Report

Fort Calhoun Nuclear Station

Licensee: **Omaha Public Power District**
Exercise Date: **October 23, 2001**
Report Date: **January 18, 2002**

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

RICHARD HAINJE, REGIONAL DIRECTOR

Table of Contents

I. EXECUTIVE SUMMARY.....	1
II. INTRODUCTION.....	2
III. EXERCISE OVERVIEW.....	4
A. Plume EPZ Description.....	4
B. Exercise Participants.....	4
C. Exercise Timeline.....	7
IV. EXERCISE EVALUATION AND RESULTS.....	11
A. Summary Results of Exercise Evaluation.....	11
B. Status of Jurisdictions Evaluated.....	16
1. STATE OF NEBRASKA.....	17
1.1 State Emergency Operations Center.....	17
1.2 Dose Assessment and Field Team Coordination.....	17
1.3 Field Monitoring Teams.....	18
1.4 Joint Information Center\Media Release Center.....	18
1.5 Emergency Operations Facility/Field Command Post (GAR).....	18
1.6 University of Nebraska Medical Center.....	19
2. RISK JURISDICTION.....	19
2.1 Washington County.....	19
2.1.1 Emergency Operations Center.....	19
2.1.2 Blair School District: (North\West\South Elementary)....	20
2.1.3 Fort Calhoun School District: (Jr. & Sr. High).....	21
2.1.4 Fort Calhoun Ambulance.....	21
3. SUPPORT JURISDICTIONS.....	22
3.1 Sarpy County.....	22
3.1.1 Sarpy County Reception and Care Center.....	22
3.2 Other Functions.....	22
3.2.1 EAS Station - KFAB Radio (NE\IA).....	22
3.2.2 National Weather Service (NWS) (NE\IA).....	23
4. STATE OF IOWA.....	24
4.1 State Emergency Operations Center.....	24
4.2 Dose Assessment.....	24
4.3 Field Team Coordination.....	26
4.4 Field Monitoring Teams.....	27
4.5 Joint Information Center\Media Release Center.....	27
5. RISK JURISDICTIONS.....	28
5.1 Harrison County.....	28
5.1.1 Emergency Operations Center/Forward Command Post....	28

5.1.2 Missouri Valley Schools (Middle).....	30
5.1.3 Missouri Valley\DOT Emergency Worker Decontamination Station.....	31
5.2 Pottawattamie County.....	31
5.2.1 Emergency Operations Center.....	31
5.2.2 Council Bluffs Ambulance.....	32
6. SUPPORT JURISDICTIONS.....	32
6.1 Crawford County.....	32
6.1.1 Denison Reception and Care Center.....	32

List of Appendices

Appendix 1 - Acronyms and Abbreviations.....	33
Appendix 2 - Exercise Evaluators and Team Leaders.....	36
Appendix 3 - Exercise Criteria and Extent of Play Agreement.....	38
Appendix 4 - Exercise Scenario.....	50

List of Tables

Table 1. Exercise Timeline.....	8
Table 2. Summary Results of Exercise Evaluation.....	12

I. EXECUTIVE SUMMARY

On October 23, 2001, the Federal Emergency Management Agency (FEMA), Region VII, conducted an exercise in the plume emergency planning zone (EPZ) around the Fort Calhoun Nuclear Station. The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was 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 August 10, 1999. 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 Risk County of Washington and the Host County of Sarpy participated along with the State government. In the State of Iowa, the Risk Counties of Harrison and Pottawattamie and the Host County of Crawford 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 an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. A special thank you is once again extended to those wonderful volunteers. Cooperation and teamwork of all the participants were evident during this exercise.

This report contains the final evaluation of the biennial exercise.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There was one Area Requiring Corrective Action (ARCA) and one Deficiency identified in Iowa as a result of this exercise. The Deficiency was corrected later during the exercise and is closed.

There were three ARCAs identified during previous exercise(s) that could have been corrected during this exercise. One Nebraska ARCA was corrected during this exercise at the Washington County EOC. One Iowa ARCA, at the Forward Command Post, was not corrected and remains an open issue. Finally, one Iowa ARCA, for the Dose Assessment function, was corrected during an out of sequence demonstration May 7, 2001.

The final protective action decision (PAD) during the emergency phase was an evacuation of Nebraska sub areas 1 & 2 and Iowa sub areas 10, 11, and 12. The cities and towns impacted by the evacuation were Blair and Kennard in Nebraska and California Junction and Modale in Iowa. Approximately 9,459 residents in Nebraska and 614 in Iowa were affected by the evacuation.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume lead responsibility for all offsite nuclear planning and response. FEMA's activities are conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351, and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

FEMA Rule 44 CFR 350 establishes the policies and procedures for FEMA's initial and continued approval of State and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local governments' participation in joint exercises with licensees.

FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

- * Taking the lead in offsite emergency planning and in the review and evaluation of radiological emergency response plans (RERP) and procedures developed by State and local governments.
- * Determining whether such plans and procedures can be implemented on the basis of evaluation of exercises of the plans and procedures conducted by State and local governments.
- * Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA (Federal Register, Vol. 58, No. 176, September 14, 1993).
- * Coordinating the activities of the following Federal agencies with responsibilities in the radiological emergency planning process:
 - U.S. Department of Commerce
 - U.S. Nuclear Regulatory Commission
 - U.S. Environmental Protection Agency
 - U.S. Department of Energy
 - U.S. Department of Health and Human Services
 - U.S. Food and Drug Administration
 - U.S. Public Health Service
 - U.S. Department of Transportation

- U.S. Department of Agriculture
- U.S. Department of the Interior

Representatives of these agencies serve on the FEMA Region VII Regional Assistance Committee (RAC), which is chaired by FEMA.

Formal submission of the RERPs for the Fort Calhoun Nuclear Station to FEMA Region VII by the States of Iowa and Nebraska and involved local jurisdictions occurred on June 29, 1984. Formal approval of these RERPs was granted by FEMA on December 17, 1984, for Nebraska and on May 20, 1987, for Iowa under 44 CFR 350. The alert and notification system was approved by FEMA on April 27, 1989.

A REP exercise was evaluated on October 23, 2001, by FEMA Region VII to assess the capabilities of State and local offsite emergency preparedness organizations in implementing their RERPs and procedures to protect the public during a radiological emergency involving the Fort Calhoun Nuclear Station. The purpose of this exercise report is to present the exercise results and findings on the performance of the offsite response organizations (OROs) during a simulated radiological emergency.

The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA Region VII RAC Chairperson and approved by the Regional Director.

The criteria utilized in the FEMA evaluation process are contained in:

- * NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980.
- * Radiological Emergency Preparedness: Exercise Evaluation Methodology as published in the Federal Register September 12, 2001.

Section III of this report, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section of the report contains a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities, which were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

Section IV of this report, entitled "Exercise Evaluation and Results," presents basic information on the demonstration of applicable exercise objectives at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues only format. This section also contains: (1) descriptions of all Deficiencies and ARCAs assessed during this exercise, recommended corrective actions, and the State and local governments' Schedule of Corrective Actions for each identified exercise issue and (2) descriptions of ARCAs assessed during previous exercises and the status of the OROs' efforts to resolve them.

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the October 23, 2001, exercise to test the offsite emergency response capabilities in the area surrounding the Fort Calhoun Nuclear Station. This section of the exercise report includes a description of the plume EPZ, a listing of all participating jurisdictions and functional entities, which were evaluated, and a tabular presentation of the time of the actual occurrence of key exercise events and activities.

A. Plume EPZ Description

The Fort Calhoun Nuclear Station is located along the west bank of the Missouri River, in Washington County, Nebraska.

The topography of the 10-mile EPZ varies from relatively flat east and south of the site, to rolling hills to the west and north of the site.

The 10-mile EPZ contains a total population of 18,424 within four counties: Washington (includes the towns of Blair, Fort Calhoun, and Kennard) and Douglas Counties in Nebraska, and Harrison (includes the towns of Missouri Valley, Modale, and California Junction) and Pottawattamie (includes the town of Loveland) Counties in Iowa. The land use within the EPZ is predominantly diversified agricultural production. There are four recreational areas in the EPZ: Wilson Island State Park, Fort Atkinson, Boyer Chute Recreation Area, and Desoto National Wildlife Refuge. Various forms of transportation serve the area. Interstate Highway 29 passes eight miles to the east and northeast of the site, U.S. Highway 75 passes within one mile to the south, and U.S. Highway 30 passes within two miles to the north and west. The Union Pacific Railroad passes approximately two and one half miles to the north and there is seasonal boat traffic on the Missouri River.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Fort Calhoun Nuclear Station exercise on October 23, 2001.

STATE OF NEBRASKA

- Governor's Office
- State Emergency Management Agency
- National Guard
- Department of Agriculture
- Health & Human Services/Regulations & Licensure
- State Highway Patrol
- Department of Roads
- Game and Parks Commission
- University of Nebraska Medical Center

RISK JURISDICTION (NEBRASKA)

WASHINGTON COUNTY

Board of Supervisors
Emergency Management Office
Mayors of Fort Calhoun and Blair
Region 5/6 Emergency Management Coordinator
Radiological Officer
Public Information Officer
Sheriff's Department
Blair Fire Department
Blair Police Department
Blair School District
Fort Calhoun School District
Fort Calhoun Ambulance

SUPPORT JURISDICTIONS (NEBRASKA)

SARPY COUNTY

Bellevue Emergency Management Office
Radiological Officer
Bellevue Fire Department
Bellevue Police Department

PRIVATE/VOLUNTEER ORGANIZATIONS (NEBRASKA)

American Red Cross
Radio Amateur Civil Emergency Service
KFAB Radio Station

STATE OF IOWA

Governor's Office
Emergency Management Division
Adjutant General/ National Guard
Department of Public Health
Department of Public Safety
Department of Human Services
Department of Natural Resources
Department of Transportation

Department of Agriculture and Land Stewardship
Department of Elder Affairs
Iowa State Extension Service
Iowa State Patrol
University of Iowa Hygienic Laboratory
Iowa State University
Information Technology Services

RISK JURISDICTIONS (IOWA)

HARRISON COUNTY

Board of Supervisors
Emergency Management Office
Sheriff's Department
County Engineer
County Human Services
Missouri Valley School District
Mondamin Fire and Rescue Department

POTTAWATTAMIE COUNTY

Emergency Management Office
Board of Supervisors
Sheriff's Department
County Conservation Department
County Health Office
County Road and Bridge Department
Council Bluffs Ambulance
911 Communications
County Engineer

SUPPORT JURISDICTION (IOWA)

CRAWFORD COUNTY

Emergency Management Office
Sheriff's Department
Denison Volunteer Fire Department
Denison Police Department

PRIVATE/VOLUNTEER ORGANIZATIONS (IOWA)

American Red Cross
Radio Amateur Civil Emergency Service

FEDERAL PARTICIPATION

National Weather Service
FEMA Region VII

C. Exercise Timeline

Table 1, on the following pages, presents the time at which key events and activities occurred during the Fort Calhoun Nuclear Station plume exercise held on October 23, 2001. Also included are times that notifications were made to the participating jurisdictions/functional entities.

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: October 23, 2001 Fort Calhoun Nuclear Station (NEBRASKA)

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken										
		Nebraska EOC	Dose Assessment & FTC	JIC/MRC	EOF/FCP (GAR)	EAS Station KFAB (NEBR.)	NWS (IA/NE)	Washington County EOC				
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Alert	0756	0811	N/A	N/A	N/A	N/A	N/A	0811				
Site Area Emergency	0919	0926	0926	0926	0926	0937	0930	0926				
General Emergency	1018	1025	1025	1025	1025	1030	N/A	1025				
Rad. Release Started	1107	1118	1118	1118	1118	N/A	N/A	1118				
Rad. Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Facility Declared Operational		0830	0841	0901	0857	N/A	N/A	0900				
Governor Declared State of Emergency		0938	0935	0950	0933	N/A	N/A	0944				
Exercise Terminated ¹		1300	1300	1303	1300	1300	1300	1300				
<u>1st Protective Action Decision</u> (Site Area Emergency)		N/A	N/A	N/A	0933	N/A	N/A	0929				
1st Siren Activation		N/A	N/A	N/A	N/A	N/A	N/A	0929				
1st EAS Message		N/A	N/A	N/A	N/A	0939	0932	0930				
<u>2nd Protective Action Decision</u> (Evacuate sub areas 1 & 2)		1025	N/A	N/A	1023	N/A	N/A	1031				
2 nd Siren Activation		N/A	N/A	N/A	N/A	N/A	N/A	N/A				
2 nd EAS Message		1038	N/A	N/A	N/A	1042	N/A	1036				
KI to Emergency Workers in the entire EPZ		1121	1113	N/A	1115	N/A	N/A	1120				

LEGEND: D - Decision Making Jurisdiction A - Activating Jurisdiction N/A - Not Applicable

¹ Various times are indicated due to the completion of exercise objectives

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: October 23, 2001 Fort Calhoun Nuclear Station (IOWA)

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken											
		Iowa EOC	Dose Assessment	Field Team Coordination	Field Monitoring Teams	JICMRC	Harrison County EOC/FCP	Pottawattamie County EOC	EAS Station KFAB (IOWA)				
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Alert	0756	0811	0811	0811	N/A	0812	0811	0811	N/A				
Site Area Emergency	0919	0926	0926	0926	0927	0927	0926	0926	0937				
General Emergency	1018	1025	1025	1025	1026	1026	1025	1025	1030				
Rad. Release Started	1107	1118	1118	1118	1119	1119	1118	1118	N/A				
Rad. Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Facility Declared Operational		0830	0905	0905	0857	0901	0905	0831	N/A				
Governor Declared State of Emergency		0835	0835	0835	N/A	0901	0838	0900	N/A				
Exercise Terminated ¹		1303	1303	1300	1304	1303	1300	1305	1300				
<u>1st Protective Action Decision</u> (Site Area Emergency)		0933	0933	N/A	N/A	N/A	0929	0934	N/A				
1st Siren Activation		N/A	N/A	N/A	N/A	N/A	None	0936	N/A				
1st EAS Message		N/A	N/A	N/A	N/A	N/A	0933	N/A	0939				
<u>2nd Protective Action Decision</u> (Evacuate sub areas 10 & 11)		1027	1027	N/A	1033	N/A	1026	N/A	N/A				
2 nd Siren Activation		N/A	N/A	N/A	N/A	N/A	1029	1030	N/A				
2 nd EAS Message		N/A	N/A	N/A	N/A	N/A	1036	N/A	1036				

LEGEND: D - Decision Making Jurisdiction A - Activating Jurisdiction N/A - Not Applicable

¹ Various times are indicated due to the completion of exercise objectives

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: October 23, 2001 Fort Calhoun Nuclear Station (IOWA)

Emergency Classification Level or Event		Time That Notification Was Received or Action Was Taken											
		Iowa EOC	Dose Assessment	Field Team Coordination	Field Monitoring Teams	JIC/MRC	Harrison County EOC/FCP	Pottawattamie County EOC	EAS Station KFAB (IOWA)				
<u>3rd Protective Action Decision</u> (Evacuate sub area 12)		1125	N/A	N/A	N/A	N/A	1123	N/A	N/A				
3 rd Siren Activation		N/A	N/A	N/A	N/A	N/A	1130	N/A	N/A				
3 rd EAS Message		N/A	N/A	N/A	N/A	N/A	1137	N/A	1141				
KI to Emergency Workers in the entire EPZ		1111	1111	1114	1118	N/A	1110	1110	N/A				

LEGEND: D - Decision Making Jurisdiction A - Activating Jurisdiction N/A - Not Applicable

¹ Various times are indicated due to the completion of exercise objectives

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities, which participated in the October 23, 2001, exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Fort Calhoun Nuclear Station.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria contained in exercise objectives delineated in Emergency Preparedness: Exercise Evaluation Methodology as printed in the Federal Register September 12, 2001. Detailed information on the exercise criteria and the extent-of-play agreement for this exercise is found in Appendix 3 of this report.

A. Summary Results of Exercise Evaluation

The matrix presented in Table 2, on the following pages, 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 Requiring Corrective Action (ARCA) assessed or unresolved ARCA(s) from prior exercises) |
| N | - | Not Demonstrated (Reason explained in subsection B) |

NEBRASKA STATE OPERATIONS

M - Met (No Deficiency or ARCA(s) Assessed and no Unresolved ARCAs from Prior Exercises
N - Not Demonstrated as Scheduled (Reason Explained in Section IV.B)

Blank - Not Scheduled for Demonstration
D - Deficiency

TABLE 2

October 23, 2001

Fort Calhoun
Nuclear
Station

NEBR. COUNTY OPERATIONS

[illegible]

M - Met (No Deficiency or ARCA(s) Assessed and no Unresolved ARCAs from Prior Exercises
N - Not Demonstrated as Scheduled (Reason Explained in Section IV.B)

A - ARCA(s) Assessed or Unresolved ARCA(s) from Prior Exercises
Blank - Not Scheduled for Demonstration
D - Deficiency

TABLE 2

						October 23, 2001	
						FORD CALHOUN NUCLEAR STATION	
						Mobilization	
						Facilities	
						Direction & Control	
						Communications Equipment	
						Equipment & Supplies to Support Operations	
						Emergency Worker Exposure Control	
						Rad Assmt PARs Based on Avail Information	
						Rad Assmt PADs for General Public	
						Prot Action Decisions for Special Population's	
						Rad Assmt & Decision Making for Ingest Exposure	
						Rad Assmt & Dec Making for Relo/Re-entry/& Return	
						Implementation of Emergency Wrkr Exposure Control	
						Implementation of KI Decision	
						Implementation of PADs for Special Population's	
						Implementation of PADs for Schools	
						Implementation of Traffic Access & Control	
						Impediments to Evac & Traf are Identified & Resolved	
						Implementation of Ingestion Pathway Decisions	
						Impl of IP Decisions Show Strat & Instr Material	
						Impl of Relocation/Re-entry/Return Decisions	
						Plume Phase Measurement & Analysis Equip	
						Plume Phase Field Measurement & Analysis Mgmt	
						Plume Phase Fld Measurements & Analysis Proced	
						Post Plume Phase Field Measurements & Sampling	
						Laboratory Operations	
						Activation of Prompt Alert & Notification	
						Activation Prompt Alert & Notif 15 Min (Fast Breaker	
						Activation Prompt Alert & Notif in Exception Areas	
						Emerg Info & Instructions for the Public & Media	
						Monitoring/Decon/Registration of Evacuees & EWs	
						Monitoring & Decon of Emerg Worker Equipment	
						Temporary Care of Evacuees	
						Trans & Treatment of Contam Injured Individuals	

A - ARCA(s) Assessed or Unresolved ARCA(s) from Prior Exercises
D - Deficiency
D' - Deficiency Assessed and Corrected Immediately

TABLE 2

<u>October 23, 2001</u>	
<u>Fort Calhoun</u> <u>Nuclear</u> <u>Station</u>	

B. Status of Jurisdictions Evaluated

This subsection provides information on the evaluation of each participating jurisdiction and functional entity, in a jurisdiction based, issues only format. Presented below is a definition of the terms used in this subsection relative to objective demonstration status:

Met - Listing of the demonstrated exercise criteria under which no Deficiencies or ARCAs were assessed during this exercise, and under which no ARCAs assessed during prior exercise remain unresolved.

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

Area Requiring Corrective Actions (ARCA) - Listing of the demonstrated exercise criteria under which one or more ARCAs were assessed during the current exercise. Included is a description of the ARCA(s) assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.

Not Demonstrated - Listing of the exercise criteria which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.

Prior ARCAs - Resolved - Description of ARCAs assessed during previous exercises, which were resolved in this exercise, and the corrective actions demonstrated.

Prior ARCAs - Unresolved - Descriptions of ARCAs assessed during prior exercises, which were not resolved in this exercise. Included is the reason the ARCAs remain unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

The following are definitions of the two types of exercise issues, which are discussed in this report.

- * A **Deficiency** is defined by FEMA as " . . . an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."
- * An **ARCA** is defined by FEMA as " . . . an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

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

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

- * **Plant Site Identifier** - A three-digit number corresponding to the Utility Billable Plant Site Codes.
- * **Exercise Year** - The four digits of the year the exercise was conducted.
- * **Criterion Number** - A three-digit number corresponding to the criteria numbers in FEMA Exercise Evaluation Areas.
- * **Issue Classification Identifier** - (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.
- * **Exercise Issue Identification Number** - A separate two (or three) digit indexing number assigned to each issue identified in the exercise.

1. STATE OF NEBRASKA

1.1 State Emergency Operations Center. The State EOC is located in the Nebraska Military Department complex in Lincoln, Nebraska. The recently remodeled EOC provides the operations area with state-of-the-art workstations, visual aides, and messaging capabilities.

- a. **MET:** Criteria 1a1, 1b1, 1c1, 1d1, 1e1, 5b1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

1.2 Dose Assessment and Field Team Coordination. This function is located in the utility Emergency Operations Facility (EOF) in Omaha, Nebraska. Prior to their arrival at the EOF, the Dose Assessment and Field Team Coordination staff maintained continuous communications by cell phone, with the State and the utility.

- a. **MET:** Criteria 1a1, 1b1, 1d1, 1e1, 2a1, 2b1, 2b2, 4a2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

1.3 Field Monitoring Teams. The Nebraska field teams were not evaluated as part of this exercise. Credit was given, based on current regulations and policy documents, for the field teams demonstration during the Cooper Nuclear Station Exercise August 29, 2000.

1.4 Joint Information Center\Media Release Center. This function is located in the Omaha Public Power District Plaza Building in Omaha, Nebraska. The Nebraska Public Information staff demonstrated excellent coordination with the Iowa and utility staffs.

- a. **MET:** Criteria 1a1, 1b1, 1d1, 1e1, 5b1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

1.5 Emergency Operations Facility/Field Command Post (GAR). This function is located in the utility EOF in Omaha, Nebraska. The use of personal checklists provided a look forward approach to completing objectives.

- a. **MET:** Criteria 1a1, 1b1, 1c1, 1d1, 1e1, 2a1, 2b1, 2b2, 2c1, 3a1, 3b1, 5b1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None

e. PRIOR ARCAs - RESOLVED: None

f. PRIOR ARCAs - UNRESOLVED: None

1.6 University of Nebraska Medical Center (UNMC). This function is located at the UNMC Campus in Omaha, Nebraska. This facility was demonstrated out-of-sequence from the exercise on August 29, 2001. UNMC maintains a well equipped Radiological Emergency Area. The staff demonstrated excellent contamination control awareness and procedures.

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

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs - RESOLVED: None

f. PRIOR ARCAs - UNRESOLVED: None

2. RISK JURISDICTION

2.1 Washington County

2.1.1 Emergency Operations Center. The County EOC is located in the basement level of the Law Enforcement and Detention Facility in Blair, Nebraska. The EOC is a newly updated facility. Outstanding Direction and Control and staff participation was evident throughout the exercise.

a. MET: Criteria 1a1, 1b1, 1c1, 1d1, 1e1, 2a1, 2b2, 2c1, 3a1, 3b1, 3c1, 3c2, 3d1, 3d2, 5a1, 5b1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs - RESOLVED: Objective 14 (Criteria 3b1)

Issue No.: 25-99-14-A-01

Description: The recommendation for emergency workers to take KI was not provided to personnel in the field in a timely manner. The State informed Washington County at 1136 that the Nebraska Health Department recommended emergency workers take KI. However, the EOC staff was not informed of this recommendation until 1247. This resulted in a delay of over one-hour from the time of the recommendation until all emergency workers were appropriately notified. (NUREG-0654, J.10.e., f., N.1.a.)

Recommendation: The Washington County plan must be revised to clearly indicate who is responsible to ensure that all EOC staff and emergency workers are notified of important information such as the recommendation to take KI. It is suggested that the responsibility of notifying emergency workers to take KI be included under the Health and Medical position on page F-16 of the Washington County plan. The revised process of information dissemination, including the recommendation for KI, must be demonstrated during the next biennial exercise.

Schedule of Corrective Actions: The Washington County plan will be revised. The process of notifying emergency workers to take KI will be demonstrated during the next biennial exercise.

Corrective Action Demonstrated: When the recommendation to take KI was received from the Nebraska Health Department at 1120, the radiological officer immediately instructed the EOC staff of this decision and the voluntary taking of KI. He also informed the EOC staff to pass this information on to the emergency workers in the field. Based on the above, this ARCA is closed.

f. PRIOR ARCAs - UNRESOLVED: None

2.1.2 Blair School District: (North\West\South Elementary) Schools. These schools are part of the Blair School District and are located in Blair, Nebraska. Combined, these schools have a population of approximately 488. An interview was conducted August 30, 2001, out-of-sequence from the exercise with the District Superintendent, Elementary School Principal, and Transportation Director. All of the staff demonstrated excellent knowledge of the school's emergency plans and procedures.

a. MET: Criteria 1e1, 3a1, 3b1, 3c2

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

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

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

2.1.3 Fort Calhoun School District (Jr.\Sr. High School): This school is part of the Fort Calhoun School District and is located in Fort Calhoun, Nebraska. This school has a population of approximately 289. An interview was conducted out-of-sequence from the exercise, August 30, 2001, with the School District Superintendent and Transportation Coordinator. Both individuals demonstrated excellent knowledge of the school's emergency plans and procedures.

a. **MET:** Criteria 1e1, 3a1, 3b1, 3c2

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

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

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

2.1.4 Fort Calhoun Ambulance: The ambulance is located in Fort Calhoun, Nebraska. The demonstration was conducted out-of-sequence, August 29, 2001. The Ambulance crew and Fire Department demonstrated outstanding contamination control.

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

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

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

3. SUPPORT JURISDICTIONS

3.1 Sarpy County

3.1.1 Sarpy County Reception and Care Center. This function is located at the First Baptist Church in Bellevue, Nebraska. This facility was demonstrated out-of-sequence from the exercise on October 22, 2001. Congregate Care Facilities will be demonstrated out-of-sequence in 2002. Excellent Direction and Control was demonstrated at this facility. The Radiological Officer and monitors identified an alerting problem with the Portal Monitor. This problem was quickly resolved through coordination between the Radiological Officer and Reception Center Manager. In addition, excellent decontamination procedures were demonstrated.

- a. **MET:** Criteria 1a1, 1c1, 1d1, 1e1, 3a1, 6a1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

3.2 Other Functions

3.2.1 EAS Station - KFAB Radio (NE\IA). The Emergency Alerting System (EAS) Station, KFAB Radio, is located in Omaha, Nebraska. This station provides EAS support to both Iowa and Nebraska. Personnel at the radio station were very familiar with their responsibilities.

- a. **MET:** Criteria 5a1, 5b1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

3.2.2 National Weather Service (NWS) (NE\IA). This function is located at the NOAA building in Valley, Nebraska. The NWS serves as a part of the Alert and Notification for the Fort Calhoun facility in support of both Iowa and Nebraska. NWS operations personnel activated the EAS quickly and without delays as described in their plans and procedures.

- a. MET: Criteria 5a1**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs - RESOLVED: None**
- f. PRIOR ARCAs - UNRESOLVED: None**

4. STATE OF IOWA

4.1. State Emergency Operations Center. The State EOC is located in the STARC Armory in Johnston, Iowa. Effective Direction and Control was demonstrated. In addition, the Rumor Control staff did an excellent job of tracking and responding to rumor trends.

- a. **MET:** Criteria 1a1, 1b1, 1c1, 1d1, 1e1, 2b2, 3d1, 5b1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

4.2 Dose Assessment. This function is located in the STARC Armory in Johnston, Iowa. Dose Assessment staff demonstrated excellent teamwork. By closely monitoring plant conditions, the staff was able to anticipate some radiological events and potential consequences before they happened.

- a. **MET:** Criteria 1a1, 1b1, 1d1, 1e1, 2b1, 2b2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** Objective 7 (Criteria 2b1)

Issue No.: 25-96-07-A-08

Description: The Iowa Department of Public Health (IDPH) dose projections did not agree with the utility's dose projections. There was as much as a factor of one hundred difference in the dose projections. The IDPH dose assessment staff recognized the discrepancy between their dose projections and the utility's dose projections; however, they were not able to identify the cause of the discrepancy during the exercise. (NUREG-0654, I.10.)

Reason ARCA Unresolved (from 1997 FCNS exercise): The IDPH dose projections did not agree with the utility's dose projections. Again, there was as much as a factor of one hundred difference in the dose projections. Although the previous recommended corrective action to determine the root cause of the problem has been followed up on, and determined to be related to the correction of the Eagle delta T information before entering this data into the MIDAS dose projection, there were still some problems. The IDPH dose assessors until late in the exercise did not successfully demonstrate the implementation of the corrective action when the evaluator pointed it out that something appeared to be incorrect with respect to the stability class. A formula for converting the Eagle delta T data in units of centigrade was attached to the MIDAS computer; however, it was not used correctly. The formula required division and the IDPH dose assessor multiplied instead of dividing. Also, there was uncertainty by the IDPH dose assessors on how to reconcile the integrated doses when the dose projections were for different periods of time.

Recommendation (from 1997 FCNS exercise): Provide additional training to the IDPH dose assessors. Emphasis should be on the MIDAS model with respect to plume transport time to receptor locations and how this affects the integrated dose.

Schedule of Corrective Actions (from 1997 FCNS exercise): The discrepancy between the MIDAS and EAGLE and dose projections is a recognized problem. When the operator enters atmospheric temperature in centigrade, the units in which OPPD reports, and uses the input screen rather than the spreadsheet, the program reads the temperature as Fahrenheit, and calculates the metric equivalent. Since there is no current maintenance contract, the program cannot be repaired until OPPD converts to MIDAS.

During the evaluated exercise the operator chose the temperature and was using the relationship $\Delta T \text{ (Fahrenheit)} = 1.8 \times \Delta T \text{ (centigrade)}$. Data flow was sporadic and inaccurate and there were acknowledged differences between the power plant and state projections. The issue was not raised since all protective actions had been taken as a result of plant conditions and the dose projection program was used to "map" plume passage.

The operator was using the correct procedures for the program and the difference in the projections was more than a matter of projection times.

It is our understanding along with the Iowa Department of Public Health that the utility is in the process of converting to the MIDAS system. Upon the conversion, this dose projection problem should be eliminated and will be demonstrated during the next biennial exercise.

Reason ARCA Unresolved (from 1999 FCNS exercise): The Dose Assessment staff had difficulty reconciling the results produced locally by the Midas system with the results produced in the EOF using the Eagle system. One contributor to the problem

was that the dose assessment staff could not easily reconcile the different time periods used to integrate doses. The Eagle system integrates doses over 8 hours and the Midas system integrates doses over 4 hours. The dose assessment staff was not able to readily correct these differences between the dose projection modeling codes. Because the dose assessment function did not produce a dose projection to successfully compare with the Eagle dose projection, and because the dose assessment function was not able to reconcile the integrated doses when the dose projections were for different periods of time, this ARCA remains open.

Recommendation: Develop an action plan to address the specific comments provided from the last three exercises to reconcile the differences between the Eagle and Midas computer models. The most logical plan would be for the utility and the State to convert to the same system. The revised process must be demonstrated during the next biennial exercise.

Schedule of Corrective Actions: The Dose Assessment staff will demonstrate the ability to determine and investigate dose projections, which differ by greater than a factor of ten between the licensee and the Dose Assessment staff. This capability will be demonstrated at the next Fort Calhoun biennial exercise.

Corrective Action Demonstrated: A Mini-Dose Assessment Exercise to re-demonstrate this ARCA was performed May 7, 2001, at the Fort Calhoun Nuclear Station (FCNS), Emergency Operations Facility (EOF). An IDPH Dose Assessment Coordinator operated the MIDAS software using the FCNS inputs. Four sets of data were provided over the course of an hour. The IDPH Dose Assessment Coordinator ran the four dose assessments and each set of dose compared with the FCNS dose projections within a factor of 10. The IDPH demonstrated the ability to conduct dose projections in concert with FCNS and achieve consistent results within a factor of ten (10). The IDPH Dose Assessment Coordinator was interviewed as part of the evaluation. This individual exhibited an extensive understanding of the differences between the software packages and how to adjust for them. He also demonstrated an understanding of the time sensitive nature of the MIDAS software and how if data is received late, out of sequence problems in comparison may arise. Based on the above, this ARCA is closed.

f. PRIOR ARCAs - UNRESOLVED: None

4.3 Field Team Coordination. This function was performed at the utility EOF in Omaha, Nebraska. The staff demonstrated effective Direction and Control while providing backup Dose Model capability to the State EOC.

a. MET: Criteria 1a1, 1b1, 1c1, 1d1, 1e1, 2a1, 2b1, 3a1, 3b1, 4a2

b. DEFICIENCY: None

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

d. **NOT DEMONSTRATED:** None

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

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

4.4 Field Monitoring Teams. The field teams were dispatched from the utility EOF in Omaha, Nebraska. The teams were well equipped. They demonstrated excellent use of the Global Positioning System (GPS) in fulfilling their mission.

a. **MET:** Criteria 1a1, 1d1, 3a1, 3b1, 4a1, 4a3

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** 1e1

Issue No.: 025-2001-1e1-A-01

Description: The Iowa Field Team Blue was not equipped with non-self reading dosimeters, such as TLDs. The Field Team did not recognize or notify the Field Team Coordinator that they were not issued non-self reading dosimeters.

Recommendation: The Team should complete their exposure record information at the staging area and note the omission of items not contained in the dosimetry kit such that the missing items can be obtained prior to deployment.

Schedule of Corrective Actions: The Field Teams pre-departure briefing form has been revised to include issuance of TLDs. The Iowa Field Team Blue will demonstrate the use of non-self reading dosimetry at the Quad Cities Nuclear Power Station exercise in July 2002.

d. **NOT DEMONSTRATED:** None

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

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

4.5 Joint Information Center\Media Release Center. This function is located in the Omaha Public Power District Energy Plaza Building in Omaha, Nebraska. The Iowa Public Information Officer provided clear and concise media briefings.

- a. **MET:** Criteria 1a1, 1b1, 1d1, 1e1, 5b1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

5. RISK JURISDICTIONS

5.1 Harrison County

5.1.1 Emergency Operations Center (EOC)/Forward Command Post (FCP).

The County EOC and the State FCP are located with the County Sheriff's Office in Logan, Iowa. The EOC/FCP is an outstanding new facility. The Emergency Management Coordinator and County Supervisor provided exceptional Direction and Control. The County School's and the Human Services representatives demonstrated effective procedures to notify the schools and special populations of recommended protective actions.

- a. **MET:** Criteria 1b1, 1c1, 1d1, 1e1, 2a1, 2c1, 3a1, 3b1, 3c1, 3c2, 3d1, 5a3, 5b1
- b. **DEFICIENCY:** Criteria 5a1

Issue No.: 025-2001-5a1-D-01

Description: The County did not simulate activation of the siren system to alert the public following receipt of the Site Area Emergency notification at 9:29 a.m. The Harrison County Emergency Management Coordinator (EMC) did appropriately coordinate with Pottawattamie County EOC at 9:34 a.m. to "sound the sirens in two minutes". However, the Sheriff's Department Dispatcher in the Communications Center was not instructed to simulate activation of the siren system in accordance with the extent of play agreement for this exercise. Therefore, she did not take actions to simulate the siren activation prior to broadcast of the initial Emergency Alerting System (EAS) message. As a result, many of the public in Harrison County would not have been alerted to tune to the EAS station, KFAB, for information about the simulated emergency at the Fort Calhoun Nuclear Station.

Recommendation: Not applicable. See Corrective Action Demonstrated.

Corrective Action Demonstrated: The Deficiency identified above was corrected later in the exercise when Harrison County appropriately simulated siren activation for two Protective Action Decisions (PADs). Harrison County concurred at 10:26 a.m. with the State's recommendation to evacuate sub areas 10 and 11. The County EMC coordinated siren activation with Pottawattamie County at 10:27 a.m. and then immediately ensured that the Sheriff's dispatcher was instructed to simulate siren activation at 10:29 a.m. The dispatcher took appropriate actions to simulate siren system activation at 10:29 a.m. Subsequently, Harrison County once again appropriately simulated siren activation at 11:30 a.m. for a PAD made at 11:23 a.m. to evacuate sub area 12 in Iowa. Based on the above actions, this Deficiency is closed.

- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** Objective 1 (1a1)

Issue No.: 25-99-01-A-03

Description: The Highway Patrol representative that reports to the Forward Command Post (FCP) did not receive notification until after the Site Area Emergency at 0909. This contributed to three access control points being left uncontrolled (see issue 25-99-17-D-01 above) until after the General Emergency. According to the plan, the Highway Patrol would be notified at the ALERT (0744) to report to the FCP. That notification was not made; therefore, the Highway Patrol did not arrive at the FCP until 1004. All FCP personnel must be notified in a timely manner so they will be available to support access control requirements for the emergency. (NUREG-0654, E.2.; H.4.)

Recommendation (from 1999 FCNS exercise): Review and revise all notification procedures to insure that all personnel are notified in a timely manner. Submit revised procedures to FEMA for review and approval. This objective must be demonstrated during the next biennial exercise.

Schedule of Corrective Action (from 1999 FCNS exercise): The notification procedures in place are adequate. The Iowa State Patrol was notified at 0804 per State Patrol notification sheets. Apparently, the staff taking the notification call did not relay the message to the appropriate individuals. The State will stress the in-house follow-through of notification with all State agencies at the next State EOC

training session. This objective will be demonstrated during the next biennial exercise.

Reason ARCA Unresolved (from 2001 FCNS exercise): The Highway Patrol representative that reports to the Forward Command Post (FCP) never received notification to do so. Only by driving by the FCP on his patrol, and deciding to stop in as a courtesy to the County Sheriff, did he discover the exercise was occurring and he was needed. However, he was never notified of the exercise by the Highway Patrol. Thus the ARCA could not be corrected and remains open.

Recommendation: Review the notification procedures with the appropriate supervisors/dispatchers of the Iowa State Patrol to ensure they know of the requirement to notify their representative(s) and the importance of these notifications. A copy of the procedures, and documentation of the training for State Patrol personnel, should be provided to FEMA. This criterion must be demonstrated during the next biennial exercise.

Schedule of Corrective Action: We feel the notification procedures in place adequately address state agency notification. The Iowa State Patrol was notified at 0819 a.m. (per notification sheets), apparently, the staff taking the notification call did not relay the message to the appropriate individuals. We will stress the in-house follow-through of notification with the State agency structures at the next State EOC training session. This objective will be demonstrated during the next FCNS biennial exercise.

5.1.2 Missouri Valley School District (Middle). This school is part of the Missouri Valley School District, located in Missouri Valley, Iowa. This facility was evaluated out-of-sequence through an interview on October 24, 2001 with the school principal and transportation director/bus driver. All of the staff demonstrated excellent knowledge of the school's emergency plans and procedures.

- a. **MET:** Criteria 1e1, 3a1, 3b1, 3c2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

5.1.3 Missouri Valley\DOT Emergency Worker Decontamination Station. This function is located at the Iowa Department of Transportation facility in Missouri Valley, Iowa. The Mondamin Fire and Rescue Unit provide staffing. The facility demonstrated this function out-of-sequence of the exercise on October 22, 2001. The facility has been reconfigured to further reduce the possibility of cross contamination of emergency workers and vehicles. In addition, the facility was well marked to further separate clean and contaminated zones.

- a. **MET:** Criteria 1a1, 1c1, 1d1, 1e1, 3a1, 3b1, 6a1, 6b1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

5.2 Pottawattamie County

5.2.1 Emergency Operations Center. The County EOC is located in the County Courthouse in Council Bluffs, Iowa. The County supervisors and agencies provided outstanding support. Excellent overall Direction and Control and a thorough Radiation Exposure Control briefing was demonstrated.

- a. **MET:** Criteria 1a1, 1b1, 1c1, 1d1, 1e1, 2a1, 2c1, 3a1, 3b1, 3c1, 3c2, 3d1, 3d2, 5a1, 5a3, 5b1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

5.2.2 Council Bluffs Ambulance. The Ambulance is located in a fire station at 27th and Broadway in Council Bluffs, Iowa. The facility demonstrated this function out-of-sequence of the exercise on August 29, 2001. The Ambulance crew and Fire Department responded to the simulated accident scene in a timely manner and quickly prepared the victim for transport to the hospital.

- a. **MET:** Criteria 1e1, 3a1, 3b1, 6d1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

6. SUPPORT JURISDICTIONS

6.1 Crawford County

6.1.1 Denison Reception and Care Center. This function is located at the Denison High School in Denison, Iowa. Participants included the Denison Volunteer Fire Department, Crawford County Emergency Management Agency and the American Red Cross. The facility demonstrated this function out-of-sequence of the exercise on October 21, 2001. Excellent participation of the Denison Fire Department and good vehicle monitoring demonstrations were observed.

- a. **MET:** Criteria 1a1, 1c1, 1d1, 1e1, 3a1, 6a1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs - RESOLVED:** None
- f. **PRIOR ARCAs - UNRESOLVED:** None

Appendix 1 - Acronyms and Abbreviations

The following is a list of the acronyms and abbreviations, which were used in this report.

ARC	American Red Cross
ARCA	Area Requiring Corrective Action
CFR	Code of Federal Regulations
DOT	U.S. Department of Transportation
EAL	Emergency Action Level
EAS	Emergency Alerting System
ECL	Emergency Classification Level
EMC	Emergency Management Coordinator
EMD	Emergency Management Director/Division
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Extent of Play
EPA	U.S. Environmental Protection Agency
EPZ	Emergency Planning Zone
EW	Emergency Worker
EWMDS	Emergency Worker Monitoring and Decontamination Station
FCNS	Fort Calhoun Nuclear Station
FCP	Field (Forward) Command Post
FEMA	Federal Emergency Management Agency
FTC	Field Team Coordination (Coordinator)
GAR	Governor's Authorized Representative

HCV	Hand Control Valve
HPSI	High Pressure Safety Injection
IDPH	Iowa Department of Public Health
JIC	Joint Information Center
KI	Potassium Iodide
LOCA	Loss of Coolant Accident
mR	Milliroentgen
MRC	Media Release Center
NEMA	Nebraska Emergency Management Agency
NOAA	National Oceanic and Atmospheric Administration
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (NUREG-0654/FEMA-REP-1, Rev. 1).
NWS	National Weather Service
OPPD	Omaha Public Power District
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PIO	Public Information Officer
PPLS	Pressurizer Pressure Low Signal
R	Roentgen
RAC	Regional Assistance Committee
RAS	Recirculation Actuation Signal

RCS	Reactor Coolant System
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
TDD	Telecommunications Device for the Deaf
TL	Team Leader
TLD	Thermoluminescent Dosimeter
UNMC	University of Nebraska Medical Center
USDA	U.S. Department of Agriculture

Appendix 2 - Exercise Evaluators and Team Leaders

The following is a list of the personnel who evaluated the Fort Calhoun Nuclear Station exercise on October 23, 2001. The letters "TL" after their names indicates evaluator Team Leaders. The organization, which each evaluator represents, is indicated by the following abbreviations:

FEMA	- Federal Emergency Management Agency
ICF	- FEMA Contract Evaluators
DOT	- U.S. Department of Transportation
EPA	- U.S. Environmental Protection Agency
USDA	- U.S. Department of Agriculture

* Indicates locations evaluated out-of-sequence from the October 23, 2001 exercise.

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
<u>STATE OF NEBRASKA</u>		
State EOC	Sharron McDuffie	FEMA
Dose Assessment/Field Team Coordination	Garianne Howard Kathleen Barrett	EPA USDA
Joint Information Center\ Media Release Center	Al Lookabaugh	ICF
Emergency Operation Facility/ Field Command Post (GAR)	Brett Kriger - TL Debbie Waggoner	ICF DOT
EAS Station – KFAB (IA\NE)	Richard Jones	FEMA
National Weather Service (IA\NE)	Steve Tillman	FEMA
Washington County EOC	Joe Schulte - TL Marilyn Boots	FEMA FEMA
Blair School District (North, West, & South Elementary Schools)*	Norm Valentine - TL Audie Canida	FEMA FEMA
Fort Calhoun School District (Jr./Sr. High Schools)*	Norm Valentine - TL Audie Canida	FEMA FEMA

Sarpy County Reception and Care Center*	Joe Schulte – TL Kathleen Barrett Brett Kriger Deborah Blunt	FEMA USDA ICF ICF
--	---	----------------------------

University of Nebraska Medical Center (UNMC)*	Norm Valentine Audie Canida	FEMA FEMA
--	--------------------------------	--------------

Fort Calhoun Ambulance*	Norm Valentine Audie Canida	FEMA FEMA
-------------------------	--------------------------------	--------------

STATE OF IOWA

State EOC	Jane Young – TL Joe Chandler Erica D'Avanzo	FEMA FEMA FEMA
-----------	---	----------------------

Dose Assessment	Daryl Thome	ICF
-----------------	-------------	-----

Field Team Coordination	Reginald Rogers	ICF
-------------------------	-----------------	-----

Field Monitoring Teams	Deborah Blunt - TL Michael Shuler	ICF ICF
------------------------	--------------------------------------	------------

Joint Information Center\ Media Release Center	Peter Lejeune	ICF
---	---------------	-----

Harrison County EOC/ Forward Command Post	Norm Valentine - TL Al Henryson	FEMA FEMA
--	------------------------------------	--------------

Pottawattamie County EOC	Rex Jennings - TL Hollis Berry	FEMA ICF
--------------------------	-----------------------------------	-------------

Missouri Valley Middle School*	Sharron McDuffie	FEMA
--------------------------------	------------------	------

Denison Reception and Care Center*	Norm Valentine – TL Audie Canida Rex Jennings Hollis Berry	FEMA FEMA FEMA ICF
---------------------------------------	---	-----------------------------

Missouri Valley/DOT Emergency Worker Decon.*	Garianne Howard - TL Rex Jennings	EPA FEMA
---	--------------------------------------	-------------

Council Bluffs Ambulance*	Norm Valentine Audie Canida	FEMA FEMA
---------------------------	--------------------------------	--------------

Appendix 3 - Exercise Criteria and Extent of Play Agreement

This appendix lists the exercise criteria, which were scheduled for demonstration during the Fort Calhoun Nuclear Station plume exercise on October 23, 2001, and out-of-sequence drills on August 29-30, October 21-22, and October 24, 2001.

Site specific information was negotiated in the extent-of-play agreements approved by FEMA Region VII for the State of Iowa on August 27, 2001, and amended September 13, 2001. The extent-of-play for the State of Nebraska was approved on August 20, 2001, and amended September 25, 2001.

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

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

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

EXERCISE CRITERION and EXTENT-OF-PLAY

IOWA

Criterion 1a1 - Mobilization: All telephone calls to mobilize personnel or place them on standby must actually be made. Pre-positioning of staff at the following locations is authorized per the July 24, 2001 and August 3, 2001, State of Iowa letters:

Iowa EMD Liaisons at: Pottawattamie County EOC
 Harrison County EOC/State Forward Command Post
 Utility EOF
 Media Release Center

Radiological Field Monitoring Teams – Utility EOF
REPT Coordination Unit – Utility EOF
Department of Public Health Liaison – Utility EOF

Iowa EMD staff at the Iowa State EOC

The above liaisons and exercise participants will be pre-positioned and will not arrive at their respective locations until one hour after the State EOC has received notification of an Alert classification.

The demonstrations at the Missouri Valley School District, Council Bluffs Ambulance, Denison Reception and Care Center, and the Harrison County EWMDS will occur out of sequence and all personnel at these facilities may be pre-positioned. The issuance of radiological instrumentation and operability checks, where applicable, must not be accomplished prior to evaluator arrival.

At the Forward Command Post, appropriate demonstration of notification and coordination with the Highway Patrol, to ensure they are available in a timely manner, will close Area Requiring Corrective Action (ARCA) 25-99-01-A-03.

Demonstration of an actual shift change is not required. State EOC, Dose Assessment Leader, Field Team Coordinator, Radiological Field Monitoring Teams, Joint Public Information Center, Harrison County EOC/Forward Command Post, Pottawattamie County EOC, and the Radiological Officer and Shelter Manager at the Denison Reception and Care Center shall demonstrate their ability to transition from an outgoing shift to an incoming shift without discontinuity in operations. This will be accomplished by having personnel in key positions provide a shift change briefing either to the evaluators or their actual replacements prior to termination of the exercise.

Amendment (9/13/01) to Criterion 1a1 - Mobilization: All contents of the original EOP still apply except the last paragraph. Demonstration of a shift change or 24-hour staffing is not required during the exercise. In the future the State will certify 24-hour staffing capability in the Annual Letter of Certification.

Criterion 1b1 - Facilities: Successful demonstration of this criterion will place facilities under the new guidance that will only require reevaluation should they change or have modifications made to them.

Amendment (9/13/01) to Criterion 1b1 - Facilities: All contents of the original EOP still apply. In the future the State will certify this capability in the Annual Letter of Certification.

Criterion 1c1 – Direction and Control: Not modified by site-specific extent of play.

Criterion 1d1 - Communications: The evaluators will request copies of all messages and logs of message traffic at each site.

Criterion 1e1 – Equipment and Supplies to Support Operations: Verification of dosimetry and KI supplies will occur as applicable to ensure that all locations have at least the minimum numbers of supplies required by the plans.

Criterion 2a1 – Emergency Worker Exposure Control: Not modified by site-specific extent of play.

Criterion 2b1 – Radiological Assessment and PARs and PADs for the Plume Phase of the Emergency: Not modified by site-specific extent of play.

Criterion 2b2 – Radiological Assessment and PARs and PADs for the Plume Phase of the Emergency: Not modified by site-specific extent of play.

Criterion 2c1 – Protective Action Decisions for the Protection of Special Populations: Not modified by site-specific extent of play.

Criterion 3a1 – Implementation of Emergency Worker Exposure Control: Not modified by site-specific extent of play.

Criterion 3b1 – Implementation of KI Decision: Not modified by site-specific extent of play.

Criterion 3c1 – Implementation of Protective Actions for Special Populations - EOCs:

Telephone calls to special facilities and individuals with special needs may actually be made or simulated. Actual telephone calls must be made to at least 1/3 of the transportation providers, including special resources for disabled individuals, during this exercise. The Harrison County Dispatch Center, dispatches for multiple resources, so only one call to the Dispatch Center is expected. However, all facilities, individuals with special needs, and transportation providers required to be notified must be clearly identified and the actual or simulated contacts appropriately documented. Telecommunications Device for the Deaf (TDD) calls to the hearing impaired population will be simulated and appropriately documented.

Amendment (9/13/01) to Criterion 3c1 – Implementation of Protective Actions for Special Populations - EOCs: This paragraph has been changed to indicate that at least two transportation providers must be contacted.

Telephone calls to special facilities and individuals with special needs may actually be made or simulated. Actual telephone calls must be made to at least two of the transportation providers, including special resources for disabled individuals, during this exercise. The Harrison County Dispatch Center, dispatches for multiple resources, so only one call to the Dispatch Center is expected. However, all facilities, individuals with special needs, and transportation providers required to be notified must be clearly identified and the actual or simulated contacts appropriately documented. Telecommunications Device for the Deaf (TDD) calls to the hearing impaired population will be simulated and appropriately documented.

Criterion 3c2 - Implementation of Protective Actions for Special Populations -Schools: We will expect the ability and knowledge to evacuate schools to be demonstrated, through interviews, by Missouri Valley School District, Middle School. An exercise evaluator will be assigned to interview the district superintendent (or other designated school official), principal, transportation officer, and at least one school bus driver. The bus driver must have dosimetry, a dosimeter charger, and KI available for this demonstration. The interviews described above will be conducted out of sequence from the exercise.

During the emergency phase of the actual exercise October 23, 2001, all appropriate actions (e.g., notifications, EAS messages, etc.) must be taken or simulated for any public or private schools or day care facilities affected by protective action recommendations. Telephone calls must be actually made and all contacts should be appropriately documented. The telephone calls should be more like a Communications Check versus relaying the Exercise message to simplify and reduce the chance of false alarms.

Amendment (9/13/01) to Criterion 3c2 - Implementation of Protective Actions for Special Populations -Schools: Changes have not been made to paragraph one; however, paragraph two has been changed to the following:

During the emergency phase of the actual exercise October 23, 2001, all appropriate actions (e.g., notifications, EAS messages, etc.) must be taken or simulated. Telephone calls must be actually made to public school districts. Calls may be actually made or simulated for private schools and daycare centers. All actual and simulated contacts should be appropriately documented. The actual telephone calls should be more like a Communications Check versus relaying the Exercise message to simplify and reduce the chance of false alarms.

Criterion 3d1 – Implementation of Traffic and Access Control: Deployment of traffic and access control personnel to assigned locations will be simulated. However, the locations where traffic and access control would be established must be appropriately documented. Staffing of traffic and access control points must be appropriately coordinated with all involved jurisdictions.

At least two individuals at each location, who would perform traffic and access control, must be available at the Harrison, and Pottawattamie County EOCs for interviews. During the interviews these individuals will be expected to demonstrate knowledge of their roles and responsibilities concerning traffic and access control, as well as appropriate knowledge concerning dosimetry and potassium iodide procedures.

Criterion 3d2 – Implementation of Traffic and Access Control: Not modified by site-specific extent of play.

Criterion 4a1 – Plume Phase Field Measurements and Analyses: Radiological detection instruments, equipment, and protective clothing as annotated in Section II, Part I of the Iowa State Plan should be available for the demonstrations. The Field Teams will be deployed from the EOF in Omaha, Nebraska.

Criterion 4a2 – Plume Phase Field Measurements and Analyses: Not modified by site-specific extent of play.

Criterion 4a3 – Plume Phase Field Measurements and Analyses - Measurements: Each of the deployed field monitoring teams must take radiation measurements at a sufficient number of locations to identify the plume. The evaluator will interview the field teams as to the procedures for the physical turn over of the samples (to include transfer of custody forms) to the Civil Air Patrol.

Criterion 5a1 - Activation of the Prompt Alert and Notification System - Timely: An evaluator will be assigned at the National Weather Service (NWS) and the KFAB EAS radio station to observe the procedures for broadcasting the messages. We expect to see actual receipt of the messages from the appropriate County EOCs. Following receipt at the NWS and the EAS station, procedures to broadcast the message must be fully demonstrated up to the point of transmission. Actual broadcast of the messages or EAS test messages are not required. The FEMA evaluator will remain at the EAS station until the termination of the exercise to observe receipt and broadcast procedures for all EAS messages and Public Information messages. Copies of all EAS messages and Public Information messages will be requested from the facility. The evaluator at the NWS will remain there only until after the initial EAS has been broadcast.

Actual contact with the NWS and EAS station and the dissemination of the initial message to the NWS and the radio station must be demonstrated. The procedures for siren activation must be demonstrated up to the point of actual activation. Actual siren activation may be simulated.

Criterion 5a3 - Activation of the Prompt Alert and Notification System: To be demonstrated only if there is a failure in the primary alert and notification sequence.

Criterion 5b1 – Emergency Information and Instructions for the Public and the Media: Media briefings will be conducted at the Joint Information Center (JIC)\Media Release Center (MRC) located at the Omaha Public Power District (OPPD) Energy Plaza Building 1st Floor Atrium Area, 444 S. 16th Street Mall, in Omaha, Nebraska. The rumor control staff at the State EOC must demonstrate the capability to respond to an average of approximately six calls per hour per operator throughout the emergency phase.

The staff should demonstrate the capability to monitor the contents of broadcast media coverage of the emergency situation. Any trends in rumors identified by the rumor control staff, must be addressed by the State EOC in news releases or by the JIC\MRC in media briefings. Therefore, appropriate demonstration will require close coordination between utility staff and state public information staff at the JIC/MRC.

Criterion 6a1 – Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees: At the Denison Reception and Care Center on Sunday, October 21, 2001, the number of evacuees required to be monitored within twelve hours is 876 (20% of the evacuees assigned to the center). The plans indicate five monitoring teams from the Denison Volunteer Fire Department (DVFD) will perform monitoring. Five monitoring teams consisting of one monitor and one recorder each will use CDV-700 survey meters to survey evacuees for contamination to ensure that all evacuees assigned to this center can be monitored within 12 hours. For this exercise, at least one third of those teams (2) must be available to demonstrate

initial evacuee monitoring. In addition, two monitors (male and female) must be available for evacuee re-monitoring following decontamination.

The facilities at the Denison High School utilized for monitoring and decontamination of evacuees, must be fully activated and setup to receive evacuees for evaluation. Decontamination procedures may be simulated.

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

All organizations that, per the plan, provide resources in support of registration center activities must be present for evaluation at the Denison Reception and Care Center. These organizations are the Crawford County Emergency Management Agency, Denison Volunteer Fire Department, American Red Cross, and the Crawford County Sheriff's Department.

Criterion 6b1 – Monitoring and Decontamination of Emergency Worker Equipment:

This will be demonstrated on October 22, 2001 at the Iowa Department of Transportation maintenance garage on Highway 30 between Missouri Valley and Logan, Iowa. Appropriate procedures for monitoring and decontamination of emergency worker equipment, including vehicles, must be demonstrated. A minimum of one vehicle must be monitored and decontamination procedures may be simulated. According to the plan, Mondamin Fire Department personnel will be responsible for establishing the Harrison County EWMDS.

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

Criterion 6c1 – Temporary Care of Evacuees: In order to demonstrate this criterion, the Denison High School in Denison, Crawford County, Iowa will be evaluated on the adequacy of facilities for providing congregate care. This facility will be required to be open to allow a cursory review by the FEMA evaluator. According to the plans, the American Red Cross provides resources and support for this congregate care center. Therefore, a representative must be present during the evaluation.

Successful demonstration of this criterion will place this congregate care facility under the new guidance that will only require reevaluation should they change or have modifications made to them.

Amendment (9/13/01) to Criterion 6c1 – Temporary Care of Evacuees: This criterion has been removed and will be evaluated out-of-sequence in 2002.

Criterion 6d1 – Transportation and Treatment of Contaminated injured individuals:

The Council Bluffs Ambulance will demonstrate the transportation of a contaminated injured person. The use of flashing lights and sirens are not necessary during this exercise. A non-specialized vehicle may be used to transport the simulated victim to the medical facility. However, prior to transport, communications between the ambulance and the receiving medical facility must be demonstrated as in the discussion in the generic extent of play.

The ambulance or non-specialized vehicle and crew must be monitored before release back into service. It is not necessary to demonstrate actual decontamination of the ambulance or non-specialized vehicle and crew; however, the crew must be knowledgeable of where this would be accomplished.

The University of Nebraska Medical Center will demonstrate the hospital portion.

NEBRASKA

Criterion 1a1 - Mobilization: All telephone calls to mobilize personnel or place them on standby must actually be made. Pre-positioning of staff is not authorized, except by written approval from this office prior to the exercise. Your request must include which staff positions will be pre-positioned and which facility(ies) will be affected.

The demonstrations at the University of Nebraska Medical Center, Fort Calhoun Ambulance, Blair School District, Fort Calhoun School District, and the Sarpy County Reception and Care Center will occur out of sequence and all personnel at these facilities may be pre-positioned. The issuance of radiological instrumentation and operability checks, where applicable, must not be accomplished prior to evaluator arrival.

Demonstration of an actual shift change is not required. State EOC, Dose Assessment Leader, EOF/Field Command Post (GAR), Radiological Field Monitoring Teams, Joint Public Information Center, Washington County EOC, and the Radiological Officer and Shelter Manager at the Sarpy County Reception and Care Center shall demonstrate their ability to transition from an outgoing shift to an incoming shift without discontinuity in operations. This will be accomplished by having personnel in key positions provide a shift change briefing either to the evaluators or their actual replacements prior to termination of the exercise.

Amendment (9/25/01) to Criterion 1a1 - Mobilization: All contents of the original EOP still apply except the last paragraph. Demonstration of a shift change or 24-hour staffing is not required during the exercise. In the future the State will certify 24-hour staffing capability in the Annual Letter of Certification.

Criterion 1b1 - Facilities: Successful demonstration of this criterion will place facilities under the new guidance that will only require reevaluation should they change or have modifications made to them.

Amendment (9/25/01) to Criterion 1b1 - Facilities: All contents of the original EOP still apply. In the future the State will certify this capability in the Annual Letter of Certification.

Criterion 1c1 – Direction and Control: Not modified by site-specific extent of play.

Criterion 1d1 - Communications: The evaluators will request copies of all messages and logs of message traffic at each site.

Criterion 1e1 – Equipment and Supplies to Support Operations: Verification of dosimetry and KI supplies will occur as applicable to ensure that all locations have at least the minimum numbers of supplies required by the plans.

Criterion 2a1 – Emergency Worker Exposure Control: Not modified by site-specific extent of play.

Criterion 2b1 – Radiological Assessment and PARs and PADs for the Plume Phase of the Emergency: Not modified by site-specific extent of play.

Criterion 2b2 – Radiological Assessment and PARs and PADs for the Plume Phase of the Emergency: Not modified by site-specific extent of play.

Criterion 2c1 – Protective Action Decisions for the Protection of Special Populations: Not modified by site-specific extent of play.

Criterion 3a1 – Implementation of Emergency Worker Exposure Control: Not modified by site-specific extent of play.

Criterion 3b1 – Implementation of KI Decision: Not modified by site-specific extent of play.

Criterion 3c1 – Implementation of Protective Actions for Special Populations - EOCs: Telephone calls to special facilities and individuals with special needs may actually be made or simulated. Actual telephone calls must be made to at least 1/3 of the transportation providers, including special resources for disabled individuals, during this exercise. However, all facilities, individuals with special needs, and transportation providers required to be notified must be clearly identified and the actual or simulated contacts appropriately documented. Telecommunications Device for the Deaf (TDD) calls to the hearing impaired population will be simulated and appropriately documented.

Amendment (9/25/01) to Criterion 3c1 – Implementation of Protective Actions for Special Populations - EOCs: This paragraph has been changed to indicate that at least two transportation providers must be contacted.

Telephone calls to special facilities and individuals with special needs may actually be made or simulated. Actual telephone calls must be made to at least two of the transportation providers, including special resources for disabled individuals, during this exercise. However, all facilities,

individuals with special needs, and transportation providers required to be notified must be clearly identified and the actual or simulated contacts appropriately documented. Telecommunications Device for the Deaf (TDD) calls to the hearing impaired population will be simulated and appropriately documented.

Criterion 3c2 - Implementation of Protective Actions for Special Populations -Schools: We will expect to see the ability and knowledge to evacuate schools to be demonstrated, through interview by Blair (North, West, & South) Elementary Schools and the Fort Calhoun Senior High School. An exercise evaluator will be assigned to interview the district superintendent (or other designated school official) and principals and at least one school bus driver for each school *district. The bus driver must have dosimetry, a dosimeter charger, and KI available for this demonstration. The interviews described above will be conducted out of sequence from the exercise.

During the emergency phase of the actual exercise October 23, 2001, all appropriate actions (e.g., notifications, EAS messages, etc.) must be taken or simulated for any public or private schools or day care facilities affected by protective action recommendations. Telephone calls must be actually made and all contacts should be appropriately documented.

Amendment (9/25/01) to Criterion 3c2 - Implementation of Protective Actions for Special Populations -Schools: Changes have not been made to paragraph one; however, paragraph two has been changed to the following:

During the emergency phase of the actual exercise October 23, 2001, all appropriate actions (e.g., notifications, EAS messages, etc.) must be taken or simulated. Telephone calls must be actually made to public school districts. Calls may be actually made or simulated for private schools and daycare centers. All actual and simulated contacts should be appropriately documented. The actual telephone calls should be more like a Communications Check versus relaying the Exercise message to simplify and reduce the chance of false alarms.

Criterion 3d1 – Implementation of Traffic and Access Control: Deployment of traffic and access control personnel to assigned locations will be simulated. However, the locations where traffic and access control would be established must be appropriately documented. Staffing of traffic and access control points must be appropriately coordinated with all involved jurisdictions. At least two individuals who would perform traffic and access control must be available at the Washington County EOC for interviews. During the interviews these individuals will be expected to demonstrate knowledge of their roles and responsibilities concerning traffic and access control, as well as appropriate knowledge concerning dosimetry and potassium iodide procedures.

Criterion 3d2 – Implementation of Traffic and Access Control: Not modified by site-specific extent of play.

Criterion 4a1 – Plume Phase Field Measurements and Analyses: Radiological detection instruments, equipment, and protective clothing, as annotated in Annex C of the Nebraska State Plan, should be available for the demonstrations. The Field Teams will be deployed from the Nebraska State Office Building in Lincoln, Nebraska. Equipment operations checks will be made before leaving Lincoln.

Amendment (9/25/01) to Criterion 4a1 – Plume Phase Field Measurements and Analyses: FEMA approved Generic Credit for this Criterion so it does not need to be evaluated. The credit was based on the field teams participation in the August 29, 2000, Cooper Nuclear Station exercise.

Criterion 4a2 – Plume Phase Field Measurements and Analyses: Not modified by site-specific extent of play.

Criterion 4a3 – Plume Phase Field Measurements and Analyses - Measurements: Each of the deployed field monitoring teams must take radiation measurements at a sufficient number of locations to identify the plume. The evaluator will interview the field teams as to the procedures for the physical turn over of the samples (to include transfer of custody forms) to the agency designated by NEMA to act as courier.

Amendment to Criterion 4a3 – Plume Phase Field Measurements and Analyses - Measurements: FEMA approved Generic Credit for this Criterion so it does not need to be evaluated. The credit was based on the field teams participation in the August 29, 2000, Cooper Nuclear Station exercise.

Criterion 4c1 – Laboratory Operations: Not modified by site-specific extent of play.

Amendment to Criterion 4c1 – Laboratory Operations: Pending analysis of your request for Generic Credit, this Criterion may be performed as an out of sequence event in 2002.

Criterion 5a1 - Activation of the Prompt Alert and Notification System - Timely: An evaluator will be assigned at the National Weather Service (NWS) and the KFAB EAS radio station to observe the procedures for broadcasting the messages. We expect to see actual receipt of the messages from the appropriate County or State EOCs. Following receipt at the NWS and the EAS station, procedures to broadcast the message must be fully demonstrated up to the point of transmission. Actual broadcast of the messages or EAS test messages are not required. The FEMA evaluator will remain at the EAS station until the termination of the exercise to observe receipt and broadcast procedures for all EAS messages and Public Information messages. Copies of all EAS messages and Public Information messages will be requested from the facility. The evaluator at the NWS will remain there only until after the initial EAS has been broadcast.

Actual contact with the NWS and EAS station and the dissemination of the initial message to the NWS and the radio station must be demonstrated. The procedures for siren activation must be demonstrated up to the point of actual activation. Actual siren activation may be simulated.

Criterion 5a3 - Activation of the Prompt Alert and Notification System: To be demonstrated only if there is a failure in the primary alert and notification sequence.

Criterion 5b1 – Emergency Information and Instructions for the Public and the Media:

Media briefings will be conducted at the Joint Information Center (JIC)\Media Release Center (MRC) located at the Omaha Public Power District (OPPD) Energy Plaza Building 444 S. 16th Street Mall, in Omaha, Nebraska. The rumor control staff at the JIC\MRC must demonstrate the capability to respond to an average of approximately six calls per hour per operator throughout the emergency phase.

The staff should demonstrate the capability to monitor the contents of broadcast media coverage of the emergency situation. Any trends in rumors identified by the rumor control staff, must be addressed by the State in news releases or in media briefings. Therefore, appropriate demonstration will require close coordination between utility staff and state public information staff at the JIC\MRC. At least one message should address a false or misleading rumor.

Criterion 6a1 – Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees: At the Sarpy County Reception and Care Center demonstration scheduled for 7 p.m. on Monday, October 22, 2001, the number of evacuees required to be monitored within twelve hours is 1037 (20% of the evacuees assigned to the center). The plans indicate personnel from the Bellevue Fire Department will perform monitoring. According to the plan, one SAIC PPM-2000 portal monitor will provide the initial evacuee monitoring at this facility, to ensure that all evacuees assigned to this center could be monitored within 12 hours. Two personnel must be available for operation of the Portal Monitor. In addition, two monitors (male and female) must be available for evacuee re-monitoring following decontamination. Also, a minimum of 2 monitors from Bellevue Fire Department must be available with hand held instruments (portal monitor backup). Therefore, a total of 6 qualified personnel from the Bellevue Fire Department must be available for this demonstration of evacuee monitoring.

The facilities at the First Baptist Church, utilized for monitoring and decontamination of evacuees, must be fully activated and setup to receive evacuees for evaluation. Decontamination procedures may be simulated.

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

All organizations that, per the plan, provide resources in support of registration center activities must be present for evaluation at the Sarpy County Reception and Care Center. These organizations are the Bellevue Emergency Program Manager, and the Heartland Chapter of the American Red Cross.

Criterion 6b1 – Monitoring and Decontamination of Emergency Worker Equipment:

This criterion will be demonstrated at a later date.

Criterion 6d1 – Transportation and Treatment of Contaminated injured individuals: The Fort Calhoun Ambulance will demonstrate the transportation of a contaminated injured person. The use of flashing lights and sirens are not necessary during this exercise. A non-specialized vehicle may be used to transport the simulated victim to the medical facility. However, prior to transport, communications between the ambulance and the receiving medical facility must be demonstrated as in the discussion in the generic extent of play.

The ambulance or non-specialized vehicle and crew must be monitored before release back into service. It is not necessary to demonstrate actual decontamination of the ambulance or non-specialized vehicle and crew; however, the crew must be knowledgeable of where this would be accomplished.

The University of Nebraska Medical Center (UNMC) will demonstrate the hospital portion.

Appendix 4 - Exercise Scenario

This appendix contains a summary of the simulated sequence of events - Exercise Scenario - that was used as the basis for invoking emergency response actions by OROs in the Fort Calhoun Nuclear Station exercise conducted on October 23, 2001. The times listed below are anticipated event times from the scenario. The times that offsite events actually occurred during the exercise are included in Table 1, Exercise Timeline, of this report.

This original exercise scenario was submitted by Omaha Public Power District on August 23, 2001, and approved by FEMA Region VII on October 5, 2001.

During the exercise, controllers from Omaha Public Power District gave "inject messages," containing scenario events and/or relevant data, to those persons or locations who would normally receive notification of such events. These inject messages were the method used for invoking response actions by OROs.

SCENARIO SUMMARY:

- 0700 **INITIAL CONDITIONS:** The Plant is operating at 100% power. AC-9A Bearing Water Pump is out of service for motor replacement.
- 0720 Commencing Exercise activities, with Notification of Unusual Event (**NOUE**).
- 0730 **ALERT** is caused by a fire that occurs in T1B-3A (4160/480 TRANSFORMER BUS 1B3A). The fire causes fire alarms and Halon injection to the East Switchgear Room 56. 480 volt Bus 1B3A is faulted and de-energized. Carbon particles from the transformer fire enter the cubicles for 1B3A. The fire will meet the entry criteria for AOP-6 – Fire Emergency and TS 2.0.1. The Verification Criteria for Alert EAL 6.3 – Fire or Explosion Affecting One Train of ESF is met.
- 0910 A **SITE AREA EMERGENCY** is called when a LOCA occurs in the Containment. RCS leakage is greater than 40-gpm AND RCS pressure, post LOCA, continues to lower following available HPSI pump injection into the RCS. The Verification Criteria in SAE EAL 1.11 – RCS Leakage >40 gpm And RCS Pressure Continues to lower after HPSI injection begins is exceeded. The LOCA causes a reactor trip and will eventually result in PPLS and RAS. All off-site power to the Safeguards buses will be lost; both emergency diesels will be loaded on the safeguards busses. The Control Room will be able to back feed 345 kV power. System Operations will repair the fault on 161 kV power and it will be available at 0950 hours.

- 0915 A potable water break on the supply line to the air compressors will be discovered in Room 19. The break will likely be discovered by the operator lining up potable water to the air compressors because of the loss of AC-9B Bearing Water Pump due to Load Shed. The break is large enough so that air compressor cooling is inadequate until a repair is made.
- 1010 A **GENERAL EMERGENCY** should be declared due to debris broken loose from the LOCA that will clog the suction strainer in containment for HCV-383-4 (CONTAINMENT SUMP; RECIRC ISOLATION VALVE). Hcv-383-3 (CONTAINMENT SUMP; RECIRC ISOLATION VALVE) is still closed due to the loss of power to 480 volt Bus 1B3A. This will result in a sustained loss of Safety Injection and the core to be uncovered in about 15 minutes.
- Note: After 1010 hours, the Command and Control position will likely use judgment and declare a General Emergency based on GE EAL 1.16 – Imminent Core Uncover With Containment Failure Or Challenge or GE EAL 11.8 – Any Core Melt Situation.
- 1025 The core exit thermocouples will start to rise resulting in core damage.
- 1040 Cleaning the bus cubicles on the 480-Volt Bus 1B3A is complete. Power will be able to be restored to 1B3A by cross tying from 480-Volt Bus 1B4A. This will provide power to the motor operator on HCV-383-3 and allow HPSI to recommence and re-flood the Core.
- 1045 Containment Radiation Levels will exceed 20,000 R/hr. This will exceed the Verification Criteria for GE EAL 8.10 – High Containment Radiation 20,000 R/hr.
- 1105 The HPSI piping will break in Room 13 between HCV-307 (HPSI HEADER ISOLATION VALVE) and SI-323 (HPSI HEADER CHECK VALVE). The leak will be able to be isolated by shutting HCV-307. SI-323 will seat to isolate the leak from back flow. HCV-2987 (HPSI ALTERNATE HEADER ISOLATION VALVE) can also be shut to ensure the break is isolated. About 600 gpm will leak out of the break into Auxiliary Building Room 13, resulting in an off-site release.
- 1300 Exercise terminated.

