In Reply Refer To:
Docket: STN 50-482

APR 27 1990

Wolf Creek Nuclear Operating Corporation
ATTN: Bart D. Withers
President and Chief Executive Officer
P.O. Box 411
Burlington, Kansas 66839

Gentlemen:

Enclosed is a letter from Dennis Kwiatkowski of the Federal Emergency Management Agency (FEMA) dated March 22, 1990, transmitting to NRC the FEMA Region VII report for the December 6, 1989, full participation exercise at Wolf Creek Generating Station. The letter contains the FEMA evaluation report of the state and local radiological emergency response demonstrated during the exercise. The state of Kansas and Coffee County fully participated in the exercise. Franklin and Allen Counties partially participated. There were eight deficiencies identified during the exercise. The deficiencies involved inadequate emergency broadcast system messages, inadequate demonstration of the Joint Radiological Monitoring Teams, and failure of Franklin and Allen Counties to perform shift changes. All of the deficiencies were corrected in the January 17-18, 1990, remedial exercise.

No response to the NRC is required. If you have any further questions, please contact Dr. D. Blair Spitzberg at (817) 860-8191.

Sincerely,

Original Signed By

Samuel J. Collins, Director
Division of Reactor Projects

Enclosure:
As stated

cc w/out enclosure:
Program Manager
FEMA Region 7
911 Walnut Street, Room 200
Kansas City, Missouri 64106

AI 90-129

RIV:SEPS	C:SEPS	D:DRSS	D:DRP
BSpitzberg/slr	DPowers	BBeach	SCollins
4/23/90	4/25/90	4/25/90	4/26/90

IE35
11
A045

cc w/enclosure:
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Burlington, Kansas 66839

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Public Service Commission
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U.S. Nuclear Regulatory Commission
ATTN: Regional Administrator, Region III
799 Roosevelt Road
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Wolf Creek Nuclear Operating Corp.
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Chairman, Coffey County Commission
Coffey County Courthouse
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U.S. Nuclear Regulatory Commission
ATTN: Senior Resident Inspector
P.O. Box 311
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U.S. Nuclear Regulatory Commission
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bcc to DMB (A045)

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Federal Emergency Management Agency

Washington, D.C. 20472

MAR 22

Mr. Frank J. Congel
Director
Division of Radiation Protection
and Emergency Preparedness
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Congel:

Enclosed is a copy of the exercise report for the December 6, 1989, exercise of the offsite radiological emergency response plans, site-specific to the Wolf Creek Generating Station. The State of Kansas and Coffey County participated fully in the exercise. Lyon, Franklin and Allen Counties participated partially in the exercise. The report was prepared by Region VII of the Federal Emergency Management Agency.

Eight deficiencies and 27 Areas Requiring Corrective Action (ARCA) were identified during this exercise for the State of Kansas and the participating counties. All eight deficiencies plus eight ARCAs were adequately demonstrated at the remedial exercise on January 17-18, 1990.

Based on the remedial actions taken by the State of Kansas, FEMA considers that offsite radiological emergency preparedness is adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public living in the vicinity of the site, in the event of a radiological emergency. Therefore, the approval of the offsite plans for the State of Kansas, site-specific to the Wolf Creek Generating Station granted under 44 CFR 350 on April 4, 1989 continues to be in effect.

If you have any questions, please feel free to call me on 646-2871.

Sincerely,

Dennis H. Kwiatkowski
Assistant Associate Director
Office of Natural and Technological
Hazards

Enclosure

~~9004060345~~ (1p)

EVALUATION OF THE IMPLEMENTATION OF STATE AND LOCAL RADIOLOGICAL EMERGENCY RESPONSE PLANS

EXERCISE CONDUCTED DECEMBER 6, 1989

AND

REMEDIAL EXERCISE CONDUCTED JANUARY 17-18, 1990

for the

WOLF CREEK GENERATING STATION

Burlington, Coffey County, Kansas

PARTICIPANTS:

State of Kansas
Coffey County
Allen County
Lyon County
Franklin County

February 16, 1990

prepared by
Federal Emergency Management Agency
Region VII
911 Walnut Street, Room 200
Kansas City, Missouri 64106

Jerome D. Overstreet, Regional Director

CONTENTS

ABBREVIATIONS AND ACRONYMS

ACOTs	Analog Channel Operational Tests
ANL	Argonne National Laboratory
ARC	American Red Cross
ARS	(Kansas) Administrator, Radiological Systems
ASRAM	Assistant State Radiological Assessment Manager
ASTRA	Automatic Statewide Telecommunications and Records Access
CCEOC	Coffey County Emergency Operations Center
CCP	Centrifugal Charging Pump
CVCS	Chemical and Volume Control System
DOC	U.S. Department of Commerce
DOE	U.S. Department of Energy
DOI	U.S. Department of Interior
DOT	U.S. Department of Transportation
EBS	Emergency Broadcast System
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	U.S. Environmental Protection Agency
EPC	(County) Emergency Preparedness Coordinator
EPZ	Emergency Planning Zone
FDA	U.S. Food and Drug Administration
FEMA	Federal Emergency Management Agency
FHNWR	Flint Hills National Wildlife Refuge
FNARS	FEMA National Radio System

FNATS	FEMA National Teletype System
FSA	Forward Staging Area
GE	General Emergency
GM	Geiger - Mueller (Survey Instrument)
GM	Guidance Memorandum
gpm	Gallons Per Minute
HHS	U.S. Department of Health and Human Services
HP	Health Physicist
IC	Information Clearinghouse
I&C	Instrumentation & Controls
INEL	Idaho National Engineering Laboratory
IPZ	Ingestion Planning Zone
JRMT	Joint Radiological Monitoring Team
JRR	John Redmond Reservoir
KCPL GO	Kansas City Power and Light General Office
KDHE	Kansas Department of Health and Environment
KDOT	Kansas Department of Transportation
KHP	Kansas Highway Patrol
KNG	Kansas Army National Guard
KNGA	Kansas Army National Guard Aviation Section
KI	Potassium Iodide
KWP	Kansas Wildlife and Parks
LOCA	Loss of Coolant Accident
MARS	Military Affiliated Radio System
μCi	Microcuries
mR	Millirem

MRC	Media Release Center
MSIV	Main Steam Isolation Valve
NRC	U.S. Nuclear Regulatory Commission
NUE	Notice of Unusual Event
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 (1980)
PAB	Protected Area Boundary
PAG	Protective Action Guide
PAI	Protective Action Instruction
PAR	Protective Action Recommendation
PDP	Positive Displacement Pump
PHS	U.S. Public Health Service
PIO	Public Information Officer
psig	Pressure Per Square Inch Gauge
R&C	Reception and Care
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
RADCON	State Radiation Control Team
RADLAB	State Radiological Laboratory
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RHS	Reactor Coolant System
SAE	Site Area Emergency
SDAS	State Dose Assessment Supervisor
SDEP	Kansas State Division of Emergency Preparedness
SEOC	State Emergency Operations Center

SIP	Safety Injection Pump
SOP	Standard Operating Procedure
SRAM	State Radiological Assessment Manager
SS	Shift Supervisor
TLD	Thermoluminescent Dosimeter
TSC	Technical Support Center
USD	Unified School District
USDA	U.S. Department of Agriculture
WCGS	Wolf Creek Generating Station
WCNOC	Wolf Creek Nuclear Operating Corporation

EXERCISE SUMMARY

The purpose of an exercise is to determine the ability of appropriate offsite agencies to respond to an emergency covered by State and local Radiological Emergency Response Plans. The evaluation of such an effort will, of necessity, tend to focus on the negative aspects of the exercise, on inadequacies in planning, preparedness and performance.

This focus of attention on the negative should not be taken to mean that there were not a great many positive accomplishments, as well. Indeed, there were; however, in the interest of brevity, only inadequacies will herein be summarized.

FEMA classifies exercise inadequacies as deficiencies or areas requiring corrective action. Definitions of these categories follow.

Deficiencies are demonstrated and observed inadequacies that would cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of a nuclear power facility in the event of a radiological emergency.

Areas requiring corrective action are demonstrated and observed inadequacies of State and local government performance, and although their correction is required, they are not considered, by themselves, to adversely impact public health and safety.

In addition, FEMA identifies areas recommended for improvement, which are problem areas observed during an exercise that are not considered to adversely impact public health and safety. While not required, correction of these would enhance an organization's level of emergency preparedness.

It should be noted that there is a distinction between failure to fully demonstrate an objective and the declaration of an inadequacy. Limitations imposed by an exercise scenario, or the choice of one response option over another, could preclude a full demonstration, yet, not necessarily constitute an inadequacy.

KANSAS OPERATIONS

During this exercise, eight deficiencies, twenty-seven areas requiring corrective action, and four areas recommended for improvement were identified for the State of Kansas.

Deficiencies, the most serious of the inadequacies, are summarized for Kansas, as follows:

Coffey County Emergency Operations Center (CCEOC)

1. The CCEOC drafted and released, to the SEOC, inadequate Emergency Broadcast System (EBS) messages for dissemination of public emergency information. These messages were inadequate in the following respects: a) evacuation messages failed to identify evacuation routes; b) the public was directed to Reception and Care Centers based upon the emergency planning zone subarea in which they reside, however, these subareas were not described in terms of local landmark descriptions for each Reception and Care Center; c) the public was not informed of the Reception and Care Center to which school children had been evacuated; and d) the EBS message erroneously informed the public of hospital and nursing home evacuations when no such facilities were impacted.

   The State of Kansas was notified on December 14, 1989 that, as a remedial action, adequate coordination, formulation and dissemination of public information instructions, Objective Number 13, was to be demonstrated at a remedial exercise prior to February 4, 1990. At the January 17-18, 1990 remedial exercise, the CCEOC adequately demonstrated Objective Number 13, thereby correcting this deficiency.

State Emergency Operations Center (SEOC)

2. The SEOC failed to correct inadequate EBS messages generated by the CCEOC, which resulted in inadequate instructions being issued to the public.

   At the January 17-18, 1990 remedial exercise, the SEOC adequately redemonstrated Objective Number 13; coordination, formulation, and dissemination of public information instructions, thereby correcting this deficiency.

Joint Radiological Monitoring Teams (JRMTs)

The JRMTs provided an inadequate demonstration of their role by using only one of the two evaluated teams to define and track the plume. More specifically, this demonstration resulted in four deficiencies, numbers 3 through 6, for the JRMTs.

3. One field team demonstrated the appropriate equipment and procedures for determining field radiation measurements with the exception that during the field radiation process, measurements of gamma were made at about one meter (waist level), but were not made at 2 cm (near ground level) to determine groundshine. The second team did not demonstrate this capability.

At the January 17-18, 1990 remedial exercise, both field teams demonstrated appropriate equipment and procedures for determining field radiation measurements, thus correcting this deficiency.

4. One field team demonstrated the appropriate equipment and procedure for the collection of an airborne radioiodine sample in the presence of noble gases. However, team members did not fully comply with the Plan in that they did not aspirate the cartridge prior to counting it with an HP-210 probe. Analysis of the sample (i.e., conversion of field count rate on the cartridge to radioiodine concentration in air) was done by dose assessment personnel at the EOF in accordance with procedures. The second team did not demonstrate this capability.

   At the January 17-18, 1990 remedial, both field teams demonstrated the appropriate equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^{-7} microcurie per cc in the presence of noble gases. This redemonstration corrected this deficiency.

5. Neither team demonstrated the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analysis. One team partially demonstrated this objective by taking an air sample. However, they did not package the particulate filter, nor dispatch it for transport to a laboratory for analysis. The second team did not demonstrate this capability.

   At the January 17-18, 1990 remedial exercise, both field teams adequately demonstrated the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analysis. This demonstration included transfer of samples to a courier and corrected the deficiency.

6. Neither team fully demonstrated a shift change required for demonstration in 1989. This failure caused the JRMTs to exceed the six year requirement imposed by NUREG-0654, as redefined in Guidance Memorandum (GM) PR-1.

   One team partially demonstrated this objective by a shift change of the County team member only. The second team did not demonstrate this capability. In order to obtain full credit for a shift change for Objective Number 34, four teams were required to fully demonstrate field team operations, two teams in the first shift and two teams in the second shift. All three members of each team were required to demonstrate the shift change.

At the January 17-18, 1990 remedial exercise, each team in both shifts demonstrated Objectives Number 4, 6, 7, 8, 9, 16, 27, and 34. This demonstration corrected this deficiency.

Allen County Reception and Care Center

7. Allen County failed to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in Guidance Memorandum (GM) PR-1.

   Allen County successfully demonstrated the ability to perform a shift change at the January 17-18, 1990 remedial exercise when second shift facility leaders were finally interviewed by FEMA evaluators. This interview corrected this deficiency.

Franklin County Reception and Care

8. Franklin County failed to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in Guidance Memorandum (GM) PR-1.

   Franklin County successfully demonstrated the ability to perform a shift change at the January 17-18, 1990 remedial exercise when second shift facility leaders were finally interviewed by FEMA evaluators. This interview corrected this deficiency.

As previously stated, twenty-seven areas requiring corrective action (ARCAs) were identified during the Wolf Creek exercise and are summarized as follows:

Two ARCAs were identified at the SEOC. In the first instance, the SEOC Communications Center failed to distribute an EBS release to the staff after public release of that message. The second concern arose when the backup communication system with the utility failed.

Dose Assessment and Field Team Coordination experienced two ARCAs. In one, the Dose Assessment and Field Team Coordination personnel failed to record the implementation of a protective action on the status board and logs for 40 minutes. In the other, the initial protective action recommendation was released to the County by the utility, without consultation/coordination with State representatives at the EOF.

At the State Forward Staging Area (FSA), four ARCAs were identified. The first ARCA resulted from intermittent telephone and radio communications, the second ARCA occurred when FSA per-

sonnel were equipped with only a low range dosimeter. TLDs and film badges were available but not distributed. The third ARCA occurred when KI was not provided to the Kansas Highway Patrol (KHP). The fourth ARCA was identified when the KHP monitoring instrument was out of calibration.

Ten ARCAs were identified in evaluating the Joint Radiological Monitoring Teams. Eight of the 10 were corrected at the remedial exercise of January 17-18, 1990.

Teams failed to wear anti-contamination clothing. This ARCA was corrected at the January 17-18, 1990 remedial exercise, when teams demonstrated availability and correct procedures for donning and doffing such clothing.

Dosimeters prepared for JRMT use were charged and recorded as reading zero, when some read as high as 180 mR. The correct preparation and recording of dosimetry was demonstrated at the January remedial exercise, correcting the ARCA.

Team 1 read and recorded dosimetry values only once during the entire exercise. At the January remedial exercise team members on all teams recorded their dosimetry readings at appropriate intervals, correcting the ARCA.

Team 1 members were unaware of where vehicle decontamination was available. This ARCA was not corrected at the remedial exercise and remains to be corrected at the next exercise.

Team members did not know their radiological dose limits. This ARCA was corrected at the January remedial exercise when all team members demonstrated knowledge of their limits.

Team 2 failed to demonstrate the availability of all necessary equipment for field sample taking. As an example, this team did not demonstrate that they had preservative, coolers, scoops, shovels, clippers, funnels, etc. This ARCA was corrected at the January remedial exercise when teams were equipped with all appropriate equipment for the taking of field samples.

Team 1 did not adequately label soil samples. The team failed to identify the size of the area from which samples were taken (i.e., a square meter, or a square foot, etc.). Failure to provide sample configuration makes ground deposition determinations impossible. Team 1 attempted to correct this ARCA at the January remedial; however, labeling of samples was still inadequate

and remains an ARCA to be corrected at the next exercise.

Team 2 did not adequately label vegetation samples. The team failed to identify the size of the area from which samples were taken (i.e., a square meter, or a square foot, etc.). Failure to provide sample configuration makes ground deposition determinations impossible. Team 2 corrected this ARCA at the January remedial exercise by properly logging, and labeling pertinent data, including the correct size of the area from which samples were taken.

Both teams failed to monitor the ground surface at sample locations prior to taking soil samples. This omission was corrected at the remedial exercise in January, correcting the ARCA.

Team 1 failed to follow written procedures for soil sampling by collecting a soil sample 1/2 inch deep from an area approximately 100 cm^2. Soil sampling procedures in the Plan and SOPs conflict, in that they provide for samples to be from areas of 625 cm^2 or 1 m^2. This ARCA was corrected at the remedial exercise.

One ARCA was identified at the State Radiological Laboratory (RADLAB) when the laboratory measured/counted vegetation and soil sample aliquots without reference or documentation of the size of the original sample area, or the portion of that sample which made up the aliquot that was analyzed.

Two ARCAs were identified at the Information Clearinghouse (IC). In the first ARCA, the first EBS message was not distributed to the IC staff for two hours. The second ARCA resulted from the IC being commanded by the utility Public Information Officer (PIO) rather than the State PIO, as specified in the Plan.

Two ARCAs were observed at the Media Release Center (MRC). In the first ARCA, MRC staff were unable to provide the media with the protective action area boundaries, using a map, and failed to follow-up on media requests for further information. The second ARCA resulted when the utility assumed the lead at the media briefings in conflict with the State Plan.

Two ARCAs were identified at the CCEOC: the first when dosimetry was not issued to CCEOC staff and the second when personnel dispatched from this facility did not know their radiological exposure limits.

Two more ARCAs were discovered at the Unified School District #243, Waverly. The bus driver was unaware of how and where KI would be made available to him, and he carried only a 0-200 mR dosimeter and TLD, having no mid or high range dosimeter.

1 INTRODUCTION

1.1 EXERCISE BACKGROUND

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume lead responsibility for all offsite nuclear planning and response.

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 developed by State and local governments.

* Determining whether such plans can be implemented on the basis of observation and evaluation of exercises of the plans conducted by State and local governments.

* Coordinating the activities of the following Federal agencies with responsibilities in the radiological emergency planning process:

  - U.S. Department of Commerce (DOC)
  - U.S. Nuclear Regulatory Commission (NRC)
  - U.S. Environmental Protection Agency (EPA)
  - U.S. Department of Energy (DOE)
  - U.S. Department of Health and Human Services (HHS)
    - U.S. Food and Drug Administration (FDA)
    - U.S. Public Health Service (PHS)
  - U.S. Department of Transportation (DOT)
  - U.S. Department of Agriculture (USDA)
  - U.S. Department of the Interior (DOI)

Representatives of these agencies serve as members of the Regional Assistance Committee (RAC), which is chaired by FEMA.

Formal submission of the radiological emergency response plans for the Wolf Creek Generating Station (WCGS) to the RAC by the State of Kansas and affected local jurisdictions was followed by a critique and evaluation of these plans.

Formal approval of these plans was granted by FEMA on April 4, 1989.

A full scale joint radiological emergency preparedness exercise was conducted for the WCGS on December 5 and 6, 1989, to assess the capability of State and County emergency preparedness organizations to: (1) implement their radiological emergency

preparedness plans and procedures, and (2) protect the public during a radiological emergency at the Wolf Creek Generating Station. This was the fifth exercise held for the Wolf Creek Generating Station since 1984. In addition, Kansas and Coffey County participated in an off-hours, unannounced drill on December 5, 1988.

Following the exercise, an Exit Interview with the State and local governments and the licensee was conducted by the Regional Assistance Committee (RAC) Chairman to discuss the results of the exercise. A public critique of the exercise for the participants and the general public was held jointly by the RAC Chairman and a representative from the Nuclear Regulatory Commission on December 7, 1989.

1.2 Exercise Evaluators

Eighteen Federal agency personnel and five FEMA contract staff evaluated offsite emergency response functions:

OBSERVER	AGENCY	ASSIGNMENT
Robert Bissell	FEMA	Coffey County EOC
Marlee Carroll	FEMA	Kansas State EOC
Lee Clark	FEMA	Kansas State EOC
Bobby Dillard	HHS/FDA	Coffey County EOC
Bob Dye	EPA	Dose Assessment & Field Team Coordination
John Elbert	HHS/PHS	Coffey Co. Hosp./Lyon Co. Amb.
Jon Furst	FEMA	USD #243, Waverly /Overview
Steve Harrell	FEMA	Emergency Operations Facility
Dewey Johnson	FEMA	Kansas State EOC
Bill Knoerzer	ANL	JRMT
Joe Keller	INEL	RADLAB
Richard Leonard	FEMA	USD #243, Waverly/Overview
Gary McClure	FEMA	Information Clearinghouse/ Media Release Center
Diane Money	FEMA	Coffey County EOC
Elizabeth Post	USDA	Kansas State EOC
Ed Robinson	ANL	Information Clearinghouse/ Media Release Center
Chris Saricks	ANL	Allen Co., Franklin Co. & Lyon Co. R&C's/Coffey County Hosp/ Lyon Co. Ambulance
Ron Shaw	FEMA	Coffey County Road & Bridge/ Emergency Worker Decon/Lyon Co. R&C
Lyle Slagle	INEL	JRMT(s)
Richard Sumpter	FEMA	Emergency Operations Facility
Neal Voltz	FEMA	Regional Office Coordination

Jim Winger	FEMA	Forward Staging Area/Lyon Co. R&C
Connie Wisniewski	FEMA	Coffey County EOC

1.3 EVALUATION CRITERIA

The evaluation criteria for this exercise were:

1. 44 Code of Federal Regulations, Part 350.9.

2. NUREG-0654/FEMA-REP-1, Rev. 1 (all applicable requirements).

3. The Exercise Evaluation Methodology (EEM): 36 Objectives identified in FEMA Guidance Memorandum (GM) EX-3 issued by FEMA as a composite of exercise demonstrable elements contained in NUREG-0654. A copy of these objectives is contained in section 1 of this report. These objectives will be referenced by number throughout the report.

4. The State of Kansas, Appendix 12, Nuclear Facilities Incidents Response Plan to Annex N, Nuclear Emergencies of the State Emergency Operations Plan (Revised April 1989.)

5. Coffey County Contingency Plan for Incidents Involving Commercial Nuclear Power (Revised December 1988).

6. Allen County Radiological Emergency Response Plan (Revised November 1987).

7. Franklin County Radiological Emergency Response Plan (Revised August 1987).

8. Lyon County Radiological Emergency Response Plan (Revised November 1987).

1.4 EXERCISE OBJECTIVES

Exercise objectives included full participation for the State of Kansas and Coffey County. State activities included the activation of the Radiological Field Monitoring Teams, Forward Staging Area, and participation at the Emergency Operations Facility nearsite. The Kansas State Emergency Operations Center, Information Clearinghouse, Media Release Center, and State Radiological Laboratory in Topeka were activated to support the licensee and Coffey County. The Coffey County Emergency Operations Center and the County Shop were also fully activated. Lyon County activated its Reception and Care Center.

The exercise was intended to demonstrate many, but not necessarily all, of the WCGS capabilities to respond to a wide range of emergency conditions. The scenario was designed to activate the State and local radiological emergency response plan through their various levels. The exercise demonstrated a number of primary emergency preparedness functions. At no time was the exercise permitted to interfere with the safe operations of the WCGS; and, the plant management, at its discretion, could have suspended the exercise for any period of time necessary to ensure this goal.

On September 1, 1989, the State of Kansas submitted formal objectives for State and local jurisdictions for this exercise. Refined objectives were received on November 24, 1989. The format of this submission utilized the thirty-six standardized objectives previously referred to under Section 1.3 (3.) of this report. They will be referred to, by number, throughout this evaluation report and are as follows:

State Emergency Operation Center (SEOC)

OBJECTIVE NUMBER	
1	Demonstrate the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario.
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
5	Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.
11	Demonstrate the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors.

12 Demonstrate the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local official(s).

13 Demonstrate the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion after the initial alert and notification has occurred.

20 Demonstrate the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.

Emergency Operations Facility (EOF)

OBJECTIVE NUMBER	
1	Demonstrate the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario.
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
5	Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
11	Demonstrate the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors.

16	Demonstrate the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons, based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases.

Dose Assessment and Field Team Coordination

OBJECTIVE NUMBER	
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
5	Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
10	Demonstrate the ability, within the plume exposure pathway to project dosage to the public via plume exposure, based on plant and field data.
11	Demonstrate the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors.
16	Demonstrate the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons, based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases.

Forward Staging Area

OBJECTIVE NUMBER	
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
16	Demonstrate the ability to make the decision to distribute and administer KI once the decision is made, if necessitated by radioiodine releases.
20	Demonstrate the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.

Joint Radiological Monitoring Teams (JRMTs)

OBJECTIVE NUMBER	
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
7	Demonstrate the appropriate equipment and procedures for determining field radiation measurements.
8	Demonstrate the appropriate equipment and procedures for the measurement of airborne radioiodine

concentrations as low as 10^{-7} microcurie per cc in the presence of noble gases.

9 Demonstrate the ability to obtain samples of particulate activity in the airborne plume and properly perform laboratory analysis.

16 Demonstrate the ability to make the decision to distribute and administer KI once the decision is made, if necessitated by radioiodine releases.

27 Demonstrate the appropriate use of equipment and procedures for collection and transport of samples of vegetation, food crops, milk, meat, poultry, water and animal feeds.

34 Demonstrate the ability to maintain staffing on a continuous 24-hour basis by an actual shift change.

Radiological Laboratory (RADLAB)

OBJECTIVE NUMBER	
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.
5	Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
9	Demonstrate the ability to obtain samples of particulate activity in the airborne plume and properly perform laboratory analysis.
28	Demonstrate the appropriate lab operations and procedures for measuring and analyzing samples of vegetation, food crops, milk, meat poultry, water and animal feeds.
34	Demonstrate the ability to maintain staffing on a continuous 24-hour basis by an actual shift change.

Information Clearinghouse (IC)

OBJECTIVE NUMBER	
1	Demonstrate the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario.
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
5	Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.
14	Demonstrate the ability to brief the media in an accurate, coordinated and timely manner.
15	Demonstrate the ability to establish and operate rumor control in a coordinated and timely fashion.

Media Release Center (MRC)

OBJECTIVE NUMBER	
1	Demonstrate the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario.
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.

4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
5	Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.
14	Demonstrate the ability to brief the media in an accurate, coordinated and timely manner.
15	Demonstrate the ability to establish and operate rumor control in a coordinated and timely fashion.

Coffey County Emergency Operations Center (CCEOC)

OBJECTIVE NUMBER	
1	Demonstrate the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario.
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
5	Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
11	Demonstrate the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors.
12	Demonstrate the ability to initially alert the public within the 10-mile EPZ and begin dissemina-

tion of an instructional message within 15 minutes of a decision by appropriate State and/or local official(s).

13 Demonstrate the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion after the initial alert and notification has occurred.

16 Demonstrate the ability to make the decision to distribute and administer KI once the decision is made, if necessitated by radioiodine releases.

18 Demonstrate the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons).

19 Demonstrate the ability and resources necessary to implement appropriate protective actions for school children within the [illegible] EPZ.

20 Demonstrate the organiza[illegible]bility and resources necessary to contr[illegible]cuation traffic flow and to control access to [illegible]vacuated and sheltered areas.

Coffey County Road and Bridge Department

OBJECTIVE NUMBER

2 Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.

3 Demonstrate the ability to direct, coordinate and control emergency activities.

4 Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.

5 Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations.

6 Demonstrate the ability to continuously monitor and control emergency worker exposure.

12	Demonstrate the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local official(s).
16	Demonstrate the ability to make the decision to distribute and administer KI once the decision is made, if necessitated by radioiodine releases.
18	Demonstrate the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons).
20	Demonstrate the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.
25	Demonstrate the adequacy of facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers, equipment and vehicles and for waste disposal.

Medical: Coffey County Hospital, Burlington

OBJECTIVE NUMBER	
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
24	Demonstrate the adequacy of medical facilities equipment, procedures and personnel for handling contaminated, injured or exposed individuals.

Medical: Lyon County Ambulance Service, Emporia

OBJECTIVE NUMBER	
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.

16	Demonstrate the ability to make the decision to distribute and administer KI once the decision is made, if necessitated by radioiodine releases.
23	Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured or exposed individuals.

Unified School District #243, Waverly

OBJECTIVE NUMBER	
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
16	Demonstrate the ability to make the decision to distribute and administer KI once the decision is made, if necessitated by radioiodine releases.
19	Demonstrate the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ.

Allen County Reception and Care Center

OBJECTIVE NUMBER	
34	Demonstrate the ability to maintain staffing on a continuous 24-hour basis by an actual shift change.

Franklin County Reception and Care Center

OBJECTIVE NUMBER	
21	Demonstrate the adequacy of procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees.
34	Demonstrate the ability to maintain staffing on a continuous 24-hour basis by an actual shift change.

Lyon County Reception and Care Center

OBJECTIVE NUMBER	
2	Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions.
3	Demonstrate the ability to direct, coordinate and control emergency activities.
4	Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.
6	Demonstrate the ability to continuously monitor and control emergency worker exposure.
21	Demonstrate the adequacy of procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees.
22	Demonstrate the adequacy of facilities, equipment and personnel for congregate care of evacuees.
34	Demonstrate the ability to maintain staffing on a continuous 24-hour basis by an actual shift change.

1.5 EXERCISE SCENARIO

The scenario for the exercise consisted of a sequence of events resulting in a release of radioactivity of sufficient magnitude to warrant the declaration of a General Emergency. This release of radioactivity, or plume, traveled in a south-southeasterly direction from the plant into Coffey County. Protective action recommendations resulted in the evacuation and/or sheltering of residents within a portion of the plume exposure pathway emergency planning zone of the plant.

The following narrative summary is an excerpt from the scenario submitted by the Wolf Creek Nuclear Operating Corporation (WCNOC).

Initial conditions establish the plan operating at 98% full power due to Instrumentation and Controls (I&C) Analog Channel Operational Tests (ACOTs) in progress. Centrifugal Charging Pump - A (CCP-A) and the Positive Displacement Pump (PDP) are tagged out for repairs. A Health Physics technician and a Maintenance

technician have initiated their routine walkdown tour of the containment building. Equipment SHB01 in the Waste Evaporator Room - 7204 of the Radwaste Building is undergoing some welding with a person standing as fire watch nearby.

At 0745, the welder knocks over the pump oiler causing an oil spill which is ignited by the welding. It takes the fire watch about 30 seconds to act and put out the fire on the welder. The welder suffers 2nd and 3rd degree burns to both hands and forearms with first degree burns to his chest. While reacting to the fire, the welder contaminated his hands and face. The Control Room is called to send the Fire Brigade, since the fire in the room is still burning, and the Emergency Medical Technicians (EMTs), for the burn victim. Coffey County Ambulance is called by the Control Room to transport the victim to Coffey County Hospital. The Shift Supervisor (SS) should declare a Notification of Unusual Event (NUE). Offsite notifications are performed through the Control Room Shift Clerk.

At 0815, the Control room receives a High Rad Alarm on the Chemical & Volume Control System (CVCS) letdown monitor. The SS should request a Reactor Coolant System (RCS) sample be drawn. Thirty minutes later at 0845, he receives the analysis report from Chemistry which confirms a significant increase in RCS activity. An Alert should be declared due to failed fuel. Control Room commences to ramp down power at approximately 1/2% per minute, but not greater than 3% per hour. Offsite notifications are performed by the Control Room. Nonessential personnel inside the Protected Area Boundary (PAB) are directed to exit the Protected Area and assemble in the parking lot. Essential personnel are directed to their appropriate Emergency Response Facility.

The Health Physics/Maintenance Team inside containment is unable to exit through the personnel hatch, and goes to the escape hatch to exit containment. During their exit, the inner hatch door jams open. The Team is becoming very concerned due to the high radiation levels near the hatch because of the failed fuel. In their desperation to get out, they do not carefully check to ensure the outer hatch door latch has completely engaged. They report to the Control Room that the outer door is sealed, but the inner door is jammed open.

At 1000, a 5,000 gallons per minute (gpm) Loss of Coolant Accident (LOCA) occurs. Reactor and turbine trips occur. NB-02 experiences electrical faults on four load centers. Safety Injection Pump-A (SIP-A) trips. Residual Heat Removal (RHR) Pump-A remains operable for core cooling. A Site Area Emergency should be declared due to the combination of failed fuel and a RCS breach. An Exclusion Area Evacuation should be implemented by Security. Offsite notification should occur from the Technical Support Center (TSC). The Emergency Operations Facility (EOF) should promptly assume command and control of the emer-

gency. County and State Emergency Operations Centers (EOCs) should activate shortly.

As the core becomes uncovered, more fuel damage occurs and a large amount of hydrogen is produced and finally burns creating a very high pressure spike [50 pressure per square inch gauge (psig)] inside the containment building. This pressure spike damages the outer emergency hatch door enough to create a significant release. Containment Spray Pump-A breaker trips. A General Emergency should be declared based on the combination of failed fuel, a RCS leak and a breach to containment integrity. All emergency response facilities are operational. Offsite notifications are performed by the EOF. There is intense media and public interest in the accident. Rumors include a terrorist organization claiming responsibility for the accident and that southwest Coffey County is being affected instead of the southeast part.

During the release, a media plane inadvertently flies through the plume to take several photographs of the plant. A short time later, the photographer experiences symptoms of congestive heart failure. The plane lands at the Coffey County Airport and requests an ambulance. Coffey County ambulances are responding to a multi-casualty car accident southwest of Gridley, so Lyon County Ambulance responds. The man is contaminated and his condition continues to degrade. Lyon County Ambulance takes him to Coffey County Hospital immediately.

As the primary system and containment depressurize, the release is terminated after about 90 minutes. Plant conditions continue to stabilize. At 1430, a news helicopter from a Kansas City television station crashes near the switchyard. There are no survivors.

At approximately 1600, the drill will be terminated.

Planned Time	Event	Actual Time
0635	Alert	0640
0905	Site Area Emergency	0850
1135	Radioactive Release (calculated)	1118
1135	General Emergency	1045
1300	Release Terminated	1315
1600	Exercise Terminated	1505

1.6 STATE AND LOCAL RESOURCES

Indicated below is a list of organizations which participated in the December 6, 1989 exercise.

State of Kansas

1. Adjutant General's Department
2. Division of Emergency Preparedness
3. Department of Health and Environment
4. Highway Patrol
5. Department of Transportation
6. Board of Agriculture
7. National Guard
8. Department of Social and Rehabilitation Services
9. Attorney General
10. Department of Wildlife and Parks

Coffey County

1. Emergency Preparedness Office
2. Sheriff's Office
3. Board of Commissioners
4. County Road and Bridge
5. Health Department
6. Fire Department
7. Radiological Department
8. County Attorney
9. County Hospital
10. Unified School District #243, Waverly

Allen County

1. Emergency Preparedness Office
2. Sheriff's Office

Franklin County

1. Civil Defense Office
2. Sheriff's Office

Lyon County

1. County Ambulance Service
2. Board of Commissioners
3. Emergency Preparedness Office
4. County Attorney
5. Sheriff's Office
6. County Clerk

7. Boy Scout Troop #157

City of Emporia

1. Mayor
2. City Engineer

2 EXERCISE EVALUATION

2.1 KANSAS STATE OPERATIONS

2.1.1 State Emergency Operations Center (SEOC)

Objectives to be demonstrated were: 1, 2, 3, 4, 5, 11, 12, 13, and 20. In addition, an area requiring corrective action (ARCA) from the 1987 Wolf Creek exercise, regarding Objective Number 13 and the timeliness of follow up EBS messages, was to be redemonstrated at this exercise.

Objective Number 1, the ability to monitor, understand and use emergency classification levels (ECLs), was fully demonstrated. ECLs were used by all staff and were prominently displayed in both the operations and communications rooms. Staff were aware of ECLs and had corresponding procedures for use at each level.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated. Upon notification of an Unusual Event, initial staff notifications were made between 0817 and 0820. Following declaration of the Alert, three staff members divided the contact list to assure the most rapid notification of remaining staff members and accomplished all calls between 0840 and 0851. Call lists were current and accurate. The communications room was staffed by 0841. All SEOC staff were activated and/or dispatched by 1000.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was not adequately demonstrated. The inadequacy occurred when the SEOC Emergency Broadcast System (EBS) Coordinator received EBS message number 3 from the Coffey County EOC (CCEOC), read the message to the EBS station and provided a copy for duplication and distribution. However, Communications Center staff discarded copies and did not distribute them to either the operations room or the Information Clearinghouse (IC). Operational staff, therefore, were unaware of the changing protective instructions to the public until after the release of EBS message number 4. This is an area requiring corrective action (ARCA). In other respects, the Deputy Director of the Kansas State Department of Emergency Preparedness (SDEP) was effectively in charge of the emergency response. Periodic briefings were held to update staff and staff members were included in decision making, as appropriate. A current copy of the plan was available.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was not

adequately demonstrated. The inadequacy was identified when the SEOC's backup communication system to the Emergency Operations Facility (EOF) failed during an attempt to use a hand-held radio at 1125. The system which failed was composed of a hand-held radio with a magnetic mount antenna in the basement of the SEOC. This is an ARCA. FEMA communications personnel suggested that adequate communications would require at least a 25 watt base station with an outside antenna.

This evaluation confirmed that 18 commercial telephone lines were available for this facility, including conferencing capability. Available radio systems included: FEMA National Radio System (FNARS), Kansas Department of Transportation (KDOT), Kansas Army National Guard (KNG), Kansas Army National Guard Aviation Section (KNGA), Military Affiliated Radio System (MARS) and Radio Amateur Civil Emergency Services (RACES). Computer linkages were established through FEMA National Teletype System (FNATS) and Automatic Statewide Telecommunications and Records Access (ASTRA). Weather teletype and a facsimile machine were also available.

Communications traffic was handled without delay, with the exception of the backup communication failure mentioned earlier.

Objective Number 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was fully demonstrated. This facility provided sufficient space, furnishings, lighting, and ventilation to support emergency operations. Restrooms were adequate and backup power was available. Additionally, a typewriter, computer/word processor, and copier were provided to support operations. Twenty-four hour operations were made possible by the availability of lockers, cots and kitchen supplies. Access to the facility was fully controlled.

Staff in this facility used plume exposure emergency planning zone (EPZ) maps which showed appropriate planning areas labeled, radiological monitoring points and the ingestion planning zone (IPZ) for agricultural information. Maps were also available showing evacuation routes, plume EPZ population by planning areas, and relocation centers.

Status boards were updated immediately and were positioned for ease of reference. They identified emergency classification levels (ECLs), weather data, and both recommended and actual protective actions.

Objective Number 11, the ability to make appropriate protective action decisions, based on projected or actual dosage, U.S. Environmental Protection Agency (EPA) Protective Action Guides (PAGs), availability of adequate shelter, evacuation time estimates and other relevant factors, was fully demonstrated. Kansas Department of Health and Environment (KDHE) discussed protective

action recommendations (PARs) with KDHE staff, at the EOF, as well as with the Deputy Director, SDEP, and the Kansas State Board of Agriculture, at the SEOC. Protective action decisions were coordinated between the Coffey County Emergency Preparedness Coordinator (EPC), SDEP Deputy Director, KDHE, and Kansas State Board of Agriculture. At 1215, when two additional subzones were added to the previously evacuated area, the SEOC decided that the plant recommendation, placing dairy cattle on stored feed out to 10 miles in sectors H, J, and K, should be expanded to sector G. They notified the County Agent of the change. At 1255, the SEOC received the recommendation that expanded cattle on stored feed out to 50 miles. The Kansas State Board of Agriculture personnel contacted all affected County representatives to notify impacted dairy farmers.

KDHE began checking water supplies at 1034. At 1310, KDHE requested precautions on downstream water supplies and initiated calling downstream users. By 1406, KDHE was reviewing precautions for downstream water supplies beyond 50 miles and had dispatched staff to take samples. A request was made to the State Radiological Laboratory (RADLAB) for analysis of these samples, which the lab said could be accomplished within 4 hours of sample receipt. At 1445, KDHE set up sampling points on the river at Chanute and Woodson and samples were to be taken every 30 minutes.

Objective Number 12, the ability to initially alert the public within the plume exposure EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local official(s), was fully demonstrated. The first offsite notification was to the CCEOC at 0927. The SEOC was notified of the SAE at 0930. At 0931, they notified the EBS station. The EBS message was to be aired at 0935. CCEOC was contacted at 0932 and instructed to sound sirens (3 minutes prior to EBS broadcast). The tone alert radio at the SEOC was actually activated at 0937 and carried an EBS test notification. The bottom of each message carried an instruction for each EBS message to be repeated every 15 minutes. The public notification process was coordinated effectively among involved organizations.

Objective Number 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion after the initial alert and notification had occurred, was not adequately demonstrated.

Following the declaration of a State of Disaster Emergency, the Deputy Director, SDEP, was responsible for the review and/or revision of EBS message content, and the coordination, supervision, and release of all State and local agency EBS announcements. The Coffey County EPC prepared a draft announcement and transmitted it to the Deputy Director, SDEP, for review and release.

At this exercise, an inadequacy was identified at the CCEOC for preparation of inadequate EBS messages. These messages were not corrected by the Deputy Director, SDEP, at the SEOC prior to release over the EBS station. As a result, the SEOC released EBS messages which were inadequate in the following respects: a) evacuation messages failed to identify evacuation routes; b) the public was directed to Reception and Care Centers based upon the emergency planning zone subarea in which they reside, however, these subareas were not described in terms of local landmark descriptions for each Reception and Care Center; c) the public was not informed of the Reception and Care Center to which school children had been evacuated; and d) an EBS message erroneously informed the public of hospital and nursing home evacuations when no such facilities were impacted.

The failure by the SEOC to correct these EBS messages was a deficiency and required a remedial demonstration prior to February 4, 1990. A remedial exercise was held on January 17-18, 1990, during which this deficiency was closed. See Section 4 for the remedial exercise report.

Protective action instructions for the general public were issued over the EBS station. Protective action instructions for dairy farmers were issued by direct telephone contact from the Kansas State Board of Agriculture at the SEOC to County Agents, then by direct telephone contact from those Agents to the farmers.

At 1050, the SEOC was notified that the General Emergency (GE) had been declared at the plant at 1045. The protective action recommendation (PAR) from the plant was to evacuate in a 0 to 2 mile radius (subzone CTR) and the John Redmond Reservoir (subzone JRR), which is in the 2 to 5 mile area. The PAR also directed the public to shelter in subzones S-1 and SE-1 in the 2 to 5 mile area. Milk animals were to be placed on stored feed out to 10 miles in sectors J, K, and M.

The State questioned the inclusion of sector M. It was decided that farmers should be notified out to 10 miles in sectors H, J, and K, and the decision was discussed with Coffey County.

At 1103, the SEOC EBS Coordinator received a call from the Coffey County EPC which contained the protective action instruction. The call was concluded at 1106, at which time, the SEOC EBS Coordinator contacted the EBS station and delivered the EBS message identified here as EBS message number 2. EBS message number 2 was completed at 1111 and was to be aired at 1115. At 1111, the SEOC EBS Coordinator called the CCEOC, informing them that EBS message number 2 would air at 1115.

At 1204, the SEOC received another plant PAR, which recommended evacuation of the following areas: In the 0-2 mile radius, subzone CTR; in the 2-5 mile area, subzones JRR, S-1, and SE-1; and in the 5-10 mile area, subzones S-2, SE-3, SE-4, and SW-2. In addition, milk animals were to be placed on stored feed out to 10 miles in sectors H, J, and K.

From 1206 to 1211, Coffey County dictated the text of the resulting EBS message (herein referred to as EBS message number 3) to the SEOC EBS Coordinator. From 1212 to 1219, the SEOC EBS Coordinator dictated EBS message number 3 to the EBS station. The message was to be aired at 1220. The CCEOC was notified of the time of release.

At 1215, the SEOC received PARs from the plant which recommended subzones E-1 and SE-2 be added to the previously impacted area. The total area recommended for evacuation was as follows: In the 0-2 mile radius, subzone CTR; in the 2-5 mile area subzones E-1, S-1, and SE-1 (this PAR inadvertently omitted subzone JRR); and in the 5-10 mile area subzones S-1, SE-2, SE-3, SE-4, and SW-2 were identified. Milk animals out to 10 miles were to be placed on stored feed in sectors H, J, and K (this PAR inadvertently omitted sector G).

From 1225 to 1227, Coffey County dictated the content of EBS message number 4 to the SEOC EBS Coordinator. From 1228 to 1234, the SEOC EBS Coordinator dictated EBS message number 4 to the EBS Station. The message was to be aired at 1240. At 1235, the SEOC contacted CCEOC to inform them of the 1240 broadcast time. The EBS message released did correct for the first PAR omission by reincluding subzone JRR in the evacuated area instructions. The Kansas State Board of Agriculture contacted their County representative to notify farmers in sector G subzones directly by phone regarding the protective action of placing dairy cattle on stored feed out to 10 miles.

At 1255, the SEOC was notified of the recommendation to place dairy cattle on stored feed out to 50 miles in sectors G through K. The Kansas State Board of Agriculture contacted all affected County representatives to notify impacted dairy farmers.

Objective Number 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated areas, was fully demonstrated. Kansas Highway Patrol (KHP) simulated the dispatch of representatives for 10 roadblocks on State Highways, as well as the Command Post at the Forward Staging Area (FSA). The Kansas Army National Guard (KNG) simulated the dispatch of two 2 battalions, which staffed 47 County roadblocks. All roads providing ingress into the protective action area were blocked. KHP roadblocks were established by 1027; KNG roadblocks were established by 1245.

Summary: The previous ARCA regarding timeliness of EBS messages was not corrected as a result of the deficiency. Objectives fully demonstrated: 1, 2, 5, 11, 12, and 20. Objectives not adequately demonstrated: 3, 4, and 13.

Deficiency

1. The SEOC failed to correct inadequate EBS messages generated by the CCEOC, which resulted in inadequate instructions being issued to the public.

Areas Requiring Corrective Action

1. The SEOC Communications Center staff failed to distribute an EBS release to the Operations staff and the Information Clearinghouse staff after it was issued to the public.

2. The SEOC backup radio communications system with the plant EOF failed.

2.1.2 Emergency Operations Facility (EOF)

Objectives to be demonstrated were: 1, 2, 3, 4, 5, 6, 11, and 16.

Objective Number 1, the ability to monitor, understand and use emergency classification levels (ECLs), was fully demonstrated. Staff at this facility were notified of ECLs by the utility via the public address system. ECLs were prominently displayed and staff were aware of their current status.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated. State EOF personnel were mobilized by calldowns initiated by utility and State alerters, and arrived at the EOF at 1030. The facility was fully staffed at 1245. Staffing consisted of the Kansas Administrator, Radiological Systems (ARS), and his assistant, as well as a Kansas Department of Transportation (KDOT) Communicator.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was fully demonstrated. The Kansas ARS was effectively in charge of the emergency response provided by this staff. Periodic briefings were held by the utility and attended by the ARS and his assistant.

Message logs were kept for all incoming and outgoing messages and transmissions and, if appropriate, messages were reproduced and distributed. The facility used an internal message handling system and information was provided to staff in a prompt manner. A current copy of the Plan was available for reference.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. This portion of the EOF was equipped with at least four commercial telephone lines. Radio backup was available via the 450 KHZ FM transmitter and the Kansas DOT and National Guard Systems were in place at the State Forward Staging Area (FSA). This facility maintained communications traffic with the SEOC, the FSA and the CCEOC.

Objective Number 5, the adequacy of facilities, equipment, displays and other materials to support operations, was fully demonstrated. The Wolf Creek EOF provided sufficient space, furnishings, lighting, ventilation and restrooms to support emergency operations. In addition, typewriters, a computer/word processor, copier and kitchen supplies were available and sufficient to support emergency operations.

Access to the facility was well controlled by utility security personnel.

Personnel utilized EPZ maps which identified appropriate plume exposure EPZ planning zones, radiological monitoring points and the ingestion planning zone (IPZ) for agricultural information. Status boards were positioned for ease of reference and were updated within 10 minutes of notification of status changes.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was fully demonstrated. Each staff member was equipped with a TLD and high and low range direct-reading dosimeters. Each had access to a dosimeter charger and had charged and recorded initial dosimeter readings. Each person had instructions for use of dosimetry and an exposure record chart for recording readings, and knew his/her radiological exposure limits. All staff members had knowledge of procedures for reporting overexposure or seeking permission to exceed exposure limits.

Objective Number 11, the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors, was fully demonstrated. Protective action decisions were made without delay as plant status changed. PARs were coordinated by the State and County with one exception which was cited as an ARCA under Dose Assessment and Field Team Coordination.

Objective Number 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons, based on predetermined criteria, as well as to distribute and administer it once the decision was made, if necessitated by radioiodine releases, was fully demonstrated. At

1245, the decision to recommend KI was made by the State Radiological Assessment Manager (SRAM), at which time, the ARS issued the recommendation to all State emergency workers (other than JRMT members who were notified by the Field Team Coordinator).

Summary: Objectives fully demonstrated: 1, 2, 3, 4, 5, 6, 11, and 16.

2.1.3 Dose Assessment/Field Team Coordination

Objectives to be demonstrated were: 2, 3, 4, 5, 6, 10, 11, and 16. In addition, one ARCA remained to be corrected from the 1987 Wolf Creek exercise, when the PAR to evacuate from 0-2 miles in downwind sectors was enacted by the CCEOC. This decision was not coordinated between KDHE and the CCEOC before implementation.

The Dose Assessment and Field Team Coordination functions are located in the Wolf Creek EOF.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated.

State personnel were mobilized, by utility and State calldowns, and arrived at the EOF at 1045. All required personnel, the SRAM, the State Dose Assessment Supervisor (SDAS) and the Assistant State Radiological Assessment Manager (ASRAM), were present.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was fully demonstrated. The SRAM was effectively in charge of the emergency response. Periodic briefings were held to update staff. Staff were involved in decision making, as appropriate. A current copy of the Plan was available for reference.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. Dose Assessment and Field Team Coordination staff had commercial telephone and radio systems to the offsite teams. (Quarters were provided to field team staff for phone contact in the event of radio failure.) A portable hand-held radio was used to maintain communication with the offsite teams, the SEOC, CCEOC and KDHE. Primary communications systems worked without failure; backup systems were tested for evaluation.

Objective Number 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was not adequately demonstrated. The inadequacy identified here results from a failure by Dose Assessment and Field Team Coordination personnel to record essential information on status boards and logs. In this case, they failed to record the implementation

of a protective action on the status board and logs for 40 minutes. The PAR that milk animals be placed on stored feed out to 50 miles was decided upon between 1242 and 1246; however, the status board did not reflect this decision until 1325 when the portion of the board labeled "Protective Actions Implemented" was updated. The time assigned to the status board for the event was 1242. The log entry of the event never did identify the actual measures recommended or implemented; reading only "Talk to (name), release information and evac. protective action". This failure to update the status boards and logs in a timely manner is an ARCA.

Regarding other aspects of the facilities equipment and displays, the facility provided sufficient space, furnishings, lighting, ventilation and restrooms to support emergency operations. A computer/word processor and copier were available and sufficient to support emergency operations. Adequate kitchen supplies were also available.

Access to this facility was well controlled by the utility.

Personnel utilized maps of the plume EPZ showing appropriate planning areas, radiological monitoring points, plume EPZ population by planning areas, and the IPZ for agricultural information.

Except for the aforementioned failure to maintain status boards for the dairy animal PAR, status boards were quickly updated and were positioned for ease of reference. Status boards carried ECLs, weather data and protective action decisions.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was fully demonstrated. Personnel were equipped with TLDs and high and low range direct-reading dosimeters, an exposure card and instructions. Staff had access to dosimetry chargers, had charged their dosimetry and had recorded their initial readings.

Personnel were aware of their radiological dose limits, procedures to follow if they received an exposure higher than authorized, and how to seek permission to exceed authorized limits.

Objective Number 10, the ability, within the plume exposure pathway, to project dosage to the public via plume exposure, based on plant and field data, was fully demonstrated. The utility and SRAM were involved in making PARs; the utility did the projections and the State confirmed.

Primary and backup systems were available for dose projections through the use of an in-line computer and Hewlett-Packard programmable calculators. Plant status information was provided promptly so that offsite dose projections could be made. New

dose projections were made upon the availability of field monitoring data and when plant status changed.

The projected plume location was plotted using such factors as plant status and weather. Field team data was compared several times with projected dose rates. Teams were directed so that the plume could be properly defined.

Field teams were periodically updated on changing plant status, meteorological data and PARs. Team movements were adequately tracked by the utility. The Field Team Coordinator was aware of field team exposure limits and limited their exposure by keeping track of the amount of time teams were in the plume, periodically updating exposure readings and rotating teams out of the plume.

Objective Number 11, the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors, was not adequately demonstrated. This exercise presented an unmonitored release. PARs were made using correct PAGs and doses were properly projected, since field team samples were the source of release data for this unmonitored release.

Projected dose, plant status and evacuation times were considered in the protective action decision making process. The utility initiated this process and the resulting projection was checked by the State. New PARs were made without undue delay as plant status changed.

An ARCA was identified when, during issuance of the first PAR by the utility, the State Dose Assessment staff was bypassed. As a result, the first PAR called for evacuation of subzone CTR and JRR and sheltering of subzones SE-1 and S-1, and was sent to the CCEOC. The CCEOC acted on this PAR in the belief that State Dose Assessment personnel had concurred and approved these recommendations. In fact, the SRAM became aware of the PAR when it was posted on the status board. This same inadequacy was observed at the September 1987 Wolf Creek exercise and remains an ARCA to be demonstrated at the next exercise.

Objective Number 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons, based on predetermined criteria, as well as to distribute and administer it once the decision was made, as necessitated by radioiodine released, was fully demonstrated. At 1245, the SRAM made the decision that emergency workers should distribute and administer KI. Emergency workers were immediately notified. The decision was based on FDA PAGs for projected dose to the thyroid.

Summary: The previous ARCA regarding failure to adequately coordinate protective action recommendations between State and County personnel was not corrected and remains an ARCA to be corrected at the next exercise. Objectives fully demonstrated: 2, 3, 4, 6, 10, and 16. Objectives not adequately demonstrated: 5 and 11.

Areas Requiring Corrective Action

3. Dose Assessment and Field Team Coordination personnel failed to record the implementation of a protective action on the status board and logs for 40 minutes.

4. The initial protective action recommendation was released by the utility to the County and then the County to the SEOC without consultation/coordination with State representatives at the EOF. This same inadequacy was observed at the September 1987 Wolf Creek exercise and remains an ARCA to be demonstrated at the next exercise.

2.1.4 Forward Staging Area (FSA)

Objectives to be demonstrated were: 2, 3, 4, 6, 16, and 20. In addition, an ARCA from the September 1987 Wolf Creek exercise when a Kansas National Guard staff member failed to properly record zero dosimeter readings, Objective Number 6, exposure control, was to be demonstrated.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated. KHP and KNG personnel were mobilized by State calldowns. The KNG vehicle arrived at 1004, commenced erecting their antenna and establishing communications linkages, and completed their facility setup at 1055. All KNG personnel assigned to this particular post were in the vehicle when it arrived. The KHP van arrived at 1022, and established telephone line hookup at 1025. The area sergeant for the KHP arrived at 1005. KHP units then rendezvoused at this location to acquire dosimetry. Dosimetry pickups were completed at 1037.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was fully demonstrated to the degree possible at this location. The KNG and KHP each provided vans for this location and their staffs worked in near isolation from one another; within separate chains of command. This arrangement resulted in a distinct command structure for each agency, but no one agency was in charge of the FSA.

Both the KNG and the KHP had current copies of the Plan available for reference. Each kept message logs for all incoming and outgoing message traffic.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was not adequately demonstrated. An ARCA resulted when telephone equipment failed to work properly for the KHP, and radio traffic was also intermittent.

The KHP established communications linkages with law enforcement personnel which included their own units, the Coffey County Sheriff's Department and also the KDOT. The linkages worked well. However, telephone message traffic to and from Chanute was intermittent due to incompatible telephone jacks and plugs. This was especially important since Chanute was the source of the KHP's field instructions. Radio backup was also intermittent, possibly due to interference from the KNG repeater antenna which was erected on the hill directly behind the KHP van. Although delays in communications traffic were sometimes as long as 10 minutes, these delays did not coincide with emergency protective actions. Although located next to one another, KHP and KNG personnel interacted very little. This was evident as the KNG was in full communications with all sources of current information when the KHP was out of touch, but information was never shared.

The KNG established communication linkages with the SEOC, the EOF, and the military task force. Primary systems worked without breakdown and were sufficient to handle all communications traffic without delay. Backup systems were demonstrated, but not needed.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was not adequately demonstrated. FSA personnel wore only 0-200 mR dosimeters. One KNG person entered the plume EPZ without a TLD, and transported unshielded TLDs through the plume EPZ. TLDs were not distributed to KHP personnel although they were available for distribution in the KNG van.

According to the Plan, SDEP was to assure that TLDs were transported to the FSA. In this exercise, the KNG had made a trip to the EOF to deliver a radio. At that time he was given the supply of TLDs and the supply of KI for personnel both at the FSA, and for further distribution to traffic and access control personnel. Upon returning to the FSA, these supplies were left in the back of the KNG van and were never distributed to KHP personnel at the FSA or in the field.

This failure to adequately equip personnel for the monitoring and control of emergency worker exposure is an ARCA.

Other aspects of this objective included the satisfactory correction of the previously cited ARCA from the September 1987

Wolf Creek exercise, during which a KNG staff member failed to properly record his dosimeter readings when he did not record zero readings. In this exercise, personnel were prompted by their supervisors to read and record all dosimeter readings.

Personnel knew their radiological exposure limits, had access to dosimeter chargers, and had been issued instructions and exposure record charts. They also were knowledgeable of the procedures to follow if they received an exposure which exceeded the limits, or needed permission to exceed those limits.

Objective Number 16, the ability to distribute and administer KI once the decision was made, was not adequately demonstrated. This inadequacy occurred when the KHP received the recommendation to administer and distribute KI at 1257. KI had been provided to the KNG representative during the delivery of a radio to the EOF. This supply was available for distribution to emergency workers if ordered; however, the KNG never made this supply available to the KHP personnel. No KHP personnel were equipped with KI. This is an ARCA.

The KNG had KI available and received the recommendation to take KI at 1305.

All personnel at the FSA were knowledgeable of procedures for use of KI.

Objective Number 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas, was not adequately demonstrated. The first KHP representative who arrived at the FSA examined his monitoring instrument and discovered a calibration date of September 14, 1982 on the instrument. This is an ARCA.

Traffic and access control points were correctly located in conjunction with the areas under protective actions. These points were identified as ingress and egress points and traffic and access control points were established accordingly, outside the affected area.

Personnel at this location had the ability to receive instructions from the KNG at the SEOC and from the KHP facility in Chanute, except when communication systems malfunctioned.

KHP implemented actions to staff primary traffic and access control positions and the KNG implemented actions to staff secondary traffic and access control points.

The positioning of control points was expanded as the protective action area grew.

Summary: The previous ARCA regarding proper recording of all dosimetry readings, including zero readings, was corrected at this exercise. Objectives fully demonstrated: 2 and 3. Objectives not adequately demonstrated: 4, 6, 16, and 20.

Areas Requiring Corrective Action

5. Telephone equipment failed to work properly for the KHP, and radio communication traffic was also intermittent.

6. KNG and KHP personnel were inadequately equipped with dosimetry in that only a low range dosimeter was worn. TLDs and film badges were available for distribution, but not distributed to the KHP; and, KNG personnel entered the plume EPZ without dosimetry.

7. KI was not distributed to KHP personnel, although KNG representatives had acquired KI for distribution to them.

8. The KHP monitoring instrument was out of calibration.

2.1.5 Joint Radiological Monitoring Teams (JRMTs)

Objectives to be demonstrated: 2, 4, 6, 7, 8, 9, 16, 27, and 34. Additionally, two ARCAs remained from the previous exercise: one concerning dead or weak batteries in field team equipment; the other regarding inadequate decontamination procedures separating contaminated from uncontaminated vehicles, equipment, etc. Both were to be redemonstrated at this exercise.

The joint radiological monitoring teams (JRMTs) were composed of members from the licensee, the Kansas Department of Health and Environment, and Coffey County. They were to meet at the plant EOF unless directed to do otherwise from the FSA. For the purpose of this report, the blue team was called Team 1, the red team, Team 2.

The ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated.

Four field teams consisting of three members each were dispatched; however, only two teams were evaluated from an offsite perspective. As stated above, each team included one representative each from the licensee, State and County. Team members were alerted at the Alert ECL at 0920. Utility personnel were allowed to be prepositioned at the EOF at 0850; County members reported at 1034 and State team members arrived from Topeka at 1045. Teams departed the EOF for their first assigned station at 1118 and arrived at 1132 and 1137, respectively.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. Each team was able to maintain contact with Dose Assessment and Field Team Coordinators throughout the exercise.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was not adequately demonstrated, resulting in numerous inadequacies.

Teams failed to demonstrate the capability to wear anti-contamination clothing. This is an ARCA.

Team members were equipped with TLDs, a 0-200 mR low range dosimeter and a 0-5 R dosimeter. Prior to deployment, team dosimetry was charged on available chargers. Following this, some dosimeters read as high as 180 mR, but were logged as reading zero. This is an ARCA since an incorrect record was created.

During the team briefings, Team 1 was not instructed on how often to read their dosimetry. This may have contributed to Team 1 only reading and recording dosimetry values once during the entire exercise. This insufficient frequency of dosimetry referencing is an ARCA.

Team 1 was unaware of where vehicle decontamination was available. This is an ARCA.

During the course of the exercise it was also determined that neither team was aware of their radiological exposure limits. This is an ARCA.

Objective Number 7, appropriate equipment and procedures for determining field radiation measurements, was not adequately demonstrated. The JRMTs provided an inadequate demonstration of their role by using only one of the two evaluated teams to define and track the plume. Team 1 demonstrated the appropriate equipment and procedures for determining field radiation measurements, with the exception that during the field radiation measurement process, measurements of gamma only and beta plus gamma were made at about one meter (waist level), but were not made at 2 cm (near ground level) to determine groundshine. This was important to distinguish whether the readings (if any) were from an elevated or nearby cloud, an enveloping cloud, or from shine from deposition after the cloud had past. Team 2 did not demonstrate this capability. This is a deficiency.

Objective Number 8, appropriate equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^{-7} microcurie per cc in the presence of noble gases, was not adequately demonstrated. Team 1 demonstrated the appropriate equipment and procedure for the collection of an airborne

radioiodine sample in the presence of noble gases. However, team members did not fully comply with the Plan procedure in that they did not aspirate the cartridge prior to counting it with an HP-210 probe. Analysis of the sample (i.e., conversion of field count rate on the cartridge to radioiodine concentration in air) was done by Dose Assessment personnel at the EOF, in accordance with procedures. Team 2 did not demonstrate this capability. This is a deficiency.

Objective Number 9, the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analysis, was not adequately demonstrated. Team 1 partially demonstrated this objective by taking an air sample. However, this team did not package the particulate filter, nor dispatch it for transport to the laboratory for analysis. Team 2 did not demonstrate this capability. This is a deficiency.

Objective Number 16, the ability to distribute and administer KI once the decision was made, was fully demonstrated. Team 1 was notified of the decision to administer KI at 1245. Team 2 was notified at 1250. Both teams were equipped with an ample supply of KI. The KI was within the current expiration date. Team members understood that administration of KI was voluntary.

Objective Number 27, appropriate use of equipment and procedures for collection and transport of samples of vegetation, food crops, milk, meat, poultry, water and animal feeds, was not adequately demonstrated, resulting in numerous inadequacies.

Team 2 failed to demonstrate the availability of all necessary equipment for field sample taking. As an example, this team did not demonstrate that they had preservative for perishable liquid samples, coolers, scoops, shovels, clippers, funnels, etc. As a result, grass, for example, was pulled up by the roots because no clippers were available. This is an ARCA.

Team 1 failed to adequately label soil samples. The team failed to identify the size of the area from which samples were taken (i.e., a square meter, or a square foot, etc.) Failure to provide sample configuration would make ground deposition determinations impossible. This is an ARCA.

Team 2 failed to adequately label vegetation samples. The team failed to identify the size of the area from which samples were taken (i.e., a square meter, or a square foot, etc.) Failure to provide sample configuration makes ground deposition determinations impossible. This is an ARCA.

Regarding other aspects of this objective, samples were simply bagged in the field and delivered to the EOF at the close of field team exercise efforts.

Both teams failed to monitor the ground surface at sample locations, prior to taking soil samples. This was of importance because the Kansas State Radiological Laboratory (RADLAB) was prepared only for low level samples. A warning of high surface radiation measurements at the site of soil or vegetation sampling would have prevented problems being caused at the RADLAB by unexpectedly high level samples and would have provided the opportunity for such samples to be sent to an alternative location for analysis. Also, a reading near surface level would have been an indication that surface deposition had occurred. This is an ARCA.

Team 1 took only a soil sample, while Team 2 took vegetation and water samples. Sampling locations were located promptly.

The size of the soil sample taken by Team 1 failed to comply with either of the written procedures for soil sampling in that it was 1/2 inch of soil taken from an area approximately 100 cm^2. This sample area differed from the 625 cm^2 or 1 m^2 as specified by the conflicting Plan Standard Operating Procedures (SOPs). This is an ARCA.

One area recommended for improvement (ARFI) is that soil and vegetation sample sites should be spray painted to define the geographical area and identify the sample location in case further sample data is required at a later time.

Objective Number 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was not adequately demonstrated. Neither team fully demonstrated a shift change required for demonstration in 1989. This failure caused the JRMTs to exceed the six year requirement imposed by NUREG-0654 as redefined by Guidance Memorandum (GM) PR-1, and is a deficiency.

Team 2 partially demonstrated this objective by a shift change of the County team member only. Team 1 did not demonstrate this capacity.

Summary: The previous ARCA regarding weak or dead batteries was corrected at this exercise. The previous ARCA regarding decontamination procedures for JRMTs was corrected by Plan changes which assigned emergency worker decontamination to the Coffey County Road and Bridge Department and Host County Reception and Care Centers. Objectives fully demonstrated: 2, 4, and 16. Objectives not adequately demonstrated: 6, 7, 8, 9, 27, and 34.

Deficiencies

The JRMTs provided an inadequate demonstration of their role by using only one of the two evaluated field teams to define and track the plume.

More specifically, this demonstration resulted in four deficiencies, numbers 2 through 5, for the JRMTs.

2. One field team demonstrated the appropriate equipment and procedures for determining field radiation measurements. The second team did not demonstrate this capability.

3. One field team demonstrated the appropriate equipment and procedure for the collection of an airborne radioiodine sample in the presence of noble gases, except for a failure to aspirate the cartridge. This team took the requisite air samples, but the second team did not demonstrate this capability.

4. Neither team demonstrated the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analysis.

   One team partially demonstrated this objective by taking an air sample. However, it did not package the particulate filter, nor dispatch it for transport to the laboratory for analysis. The second team did not demonstrate this capability.

5. Neither team fully demonstrated a shift change required for demonstration in 1989. This failure caused the JRMTs to exceed the six year requirement imposed by NUREG-0654, as redefined in Guidance Memorandum (GM) PR-1.

   One team partially demonstrated this objective by a shift change of the County team member only The second team did not demonstrate this capability.

Areas Requiring Corrective Action

9. Teams failed to wear anti-contamination clothing.

10. Dosimeters prepared for JRMT use were charged and recorded as reading zero, when some read as high as 180 mR.

11. Team 1 read and recorded dosimetry values only once during the entire exercise.

12. Team 1 members were unaware of where vehicle decontamination was available.

13. Neither team knew their radiological dose limits.

14. Team 2 failed to demonstrate the availability of all necessary equipment for field sample taking. As an example, this

team did not demonstrate that they had preservative, coolers, scoops, shovels, clippers, funnels, etc.

15. Team 1 did not adequately label soil samples. The team failed to identify the size of the area from which samples were taken (i.e., a square meter, or a square foot, etc.). Failure to provide sample configuration would make ground deposition determinations impossible.

16. Team 2 failed to adequately label vegetation samples. The team failed to identify the size of the area from which samples were taken (i.e., a square meter, or a square foot, etc.). Failure to provide sample configuration would make ground deposition determinations impossible.

17. Both teams failed to monitor the ground surface at sample locations prior to taking soil samples.

18. Team 1 failed to follow written procedures for soil sampling by collecting a soil sample 1/2 inch deep from an area approximately 100 cm^2. Soil sampling procedures in the Plan and SOPs conflict, in that they provide for samples to be from areas of 625 cm^2 or 1 m^2.

Area Recommended For Improvement

1. JRMT members should spray paint soil and vegetation sample sites to define geographical area and identify the sample location in case further sample data is required at a later time.

2.1.6 Radiological Laboratory (RADLAB)

Objectives to be demonstrated were: 2, 3, 5, 6, 9, 28, and 34.

Three ARCAs were cited at the 1987 exercise. Of these, one, concerning a State SOP, was corrected by a SOP change. Another, concerning contamination control, was corrected in this exercise. The last, concerning the laboratory staff's knowledge of their radiological exposure limits, was also corrected at this exercise.

The Radiological Laboratory is located in Topeka, Kansas.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for facility-based emergency functions, was not applicable to this facility. The RADLAB demonstration was out of sequence with the rest of the exercise play. The staff reported to their normal work assignments at their normal reporting times and were in place to demonstrate their capabilities for this exercise. This objective at the RADLAB was seen to be inap-

propriate and should be deleted as an objective in future exercises.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was not applicable to this facility since direction and control of the RADLAB were evaluated in demonstrating the laboratory's other functional responsibilities. If the RADLAB was unable to perform proper analysis of samples, then inadequate direction and control would be revealed. This objective was seen as inappropriate at this facility and should be deleted as an objective in future exercises.

Objective Number 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was fully demonstrated. However, this objective was seen as unproductive at this facility since RADLAB facilities were evaluated in demonstrating the laboratory's other functional responsibilities. For example, if RADLAB facilities were inadequate to properly perform radiological analysis on various required sample media, then inadequate facilities or equipment would have been revealed. This objective should be deleted as an objective at this facility in future exercises.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was fully demonstrated. Laboratory personnel each had a permanent record dosimeter and an appropriate direct-reading dosimeter. Personnel were aware of their radiological exposure limits, which corrected the ARCA from the 1987 Wolf Creek exercise.

Objective Number 9, the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analysis, was fully demonstrated. Simulated delivery of the particulate filter was performed at 0830. The RADLAB used established laboratory procedures for analysis of the filter. The analysis was completed in approximately 60 minutes using a properly calibrated computer based gamma ray spectrometer and a calibrated geometry. A suitable nuclide library was available for use in the analysis. Laboratory personnel then simulated reporting the results of the analysis to the SEOC.

One ARFI was observed. The transmission of relatively large amounts of numeric data by telephone is possible; however, it presents the possibility of mistakes. A hard copy transmission is a much better means of avoiding possible mistakes. It is recommended that a courier be considered to run a copy of the figures the short distance to the SEOC, or possibly a fax machine.

Objective Number 28, appropriate laboratory operations and procedures for measuring and analyzing samples of vegetation, food crops, milk, meat, poultry, water and animal feeds, was not adequately demonstrated.

The inadequacy centered on an incorrect procedure used during laboratory analysis. The laboratory measured/counted vegetation and soil sample aliquots without reference or documentation of the size of the original sample area, or the portion of that sample which made up the aliquot analyzed. This factor must be addressed by improved procedures to assure that ground deposition values can be derived from field sample analyses. This is an ARCA.

The laboratory received and performed analysis on an air particle filter, vegetation samples, water and soil samples, as well as food crop and annual feed samples. With the exception of the aforementioned inadequacy, these samples underwent analysis and measurement through the use of proper procedures in a timely manner. Although analysis of milk samples was not demonstrated, laboratory personnel were ready to add formaldehyde to such samples to assure preservation. Sample analysis results were to be provided to the SEOC.

The Kansas RADLAB utilizes an internal quality control program and program data was available. Equipment required by the Plan was available and was being calibrated on a biweekly basis using instrument calibrations traceable to the National Bureau of Standards.

This laboratory follows appropriate entry, contamination/cross-contamination and labeling procedures for samples delivered from the field. The demonstration of contamination control procedures during sample receiving and preparation was excellent.

A previous ARCA concerning contamination control from the September 1987 exercise was corrected at this exercise when the drying oven, formerly vented directly into the laboratory, had been moved into a vented hood. The use of suitable contamination control procedures now assures that samples would not be cross-contaminated and that the laboratory would not, itself, be contaminated.

Objective Number 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was fully demonstrated. The RADLAB performed a shift change at both the sample receiving and preparation positions and the sample counting position. The second shift was fully staffed, well briefed by the outgoing staff and demonstrated appropriate knowledge and capabilities of its emergency functions. This established that the facility could implement 24-hour staffing through the use of two 12 hour shifts.

Summary: The three previous ARCAs were all corrected at this exercise. The first previous ARCA, concerning the venting of a drying oven directly into the work area, was corrected by

moving the oven into a vented hood. The second previous ARCA, concerning the failure of SOP DHE 36 to specify the type of dosimetry which Radiological Laboratory personnel must wear, was corrected by Plan amendments since the 1987 exercise. The third previous ARCA, concerning the failure of laboratory personnel to know their maximum radiological exposure limits, was corrected at this exercise. Objectives fully demonstrated: 6, 9, and 34. Objective not adequately demonstrated: 28. Objectives not applicable: 2, 3, and 5.

Area Requiring Corrective Action

19. The laboratory measured/counted vegetation and soil sample aliquots without reference or documentation of the size of the original sample area, or the portion of that sample which made up the aliquot analyzed. This factor must be addressed by improved procedures to assure that ground deposition values can be derived from field sample analyses.

Area Recommended For Improvement

2. A courier or fax machine should be considered as a means of transmitting the relatively large amount of numeric data from the RADLAB to the SEOC, so as to avoid possible mistakes.

2.1.7 Information Clearinghouse (IC)

Objectives to be demonstrated were: 1, 2, 3, 4, 5, 14, and 15.

The Information Clearinghouse (IC) is located at the State Defense Building in Topeka, Kansas.

Objective Number 1, the ability to monitor, understand and use emergency classification levels (ECLs), was fully demonstrated. Staff were notified of ECLs by the Wolf Creek Public Information Officer (PIO) and hard copy notifications from the State Communications Center. ECLs were prominently displayed. Staff at the IC were aware of the current ECL.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated. Calls and contacts were made to notify offsite response organization members by telephone between 0822 and 0837 by the State PIO using current written call lists. Staffing of the IC/Media Release Center (MRC) was complete at 0959 and included the State, County and utility PIOs and support staff.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was not adequately demonstrated.

The IC operations were commanded by the Wolf Creek Nuclear Operation Corporation (WCNOC) PIO although the State PIO was to be in charge according to the Plan. Utility dominance at the IC, and thus the MRC as well, was seen in several respects. The utility PIO conducted the briefings in the IC and declared the IC operational. The IC contained an organization/staff board which showed the State and local PIOs as operating beneath the utility PIO, and press releases identified WCNOC as the first releaser, before the State and County. This is an ARCA.

Periodic briefings were held to update staff on the changing situation, and staff, as appropriate, were included in decision making.

Message logs were kept for all incoming and outgoing messages and transmissions and, with the exception of the first EBS message, messages were reproduced and distributed, if appropriate. The first EBS message was not reproduced and distributed to the IC staff and, respectively, the MRC, for two hours. This is an ARCA.

The IC also used an internal message handling system and provided the staff with information in a prompt manner, with the exception of the aforementioned EBS message. A current copy of the Plan was available for IC and MRC staff reference at the IC.

The evaluation of the combined IC/MRC functions revealed an ARFI. The State PIO team was hampered by a lack of sufficient staff. This resulted in the State PIO's inability to prepare, review and coordinate press releases at the IC during the numerous MRC press conferences which the State PIO had to attend as a panel member.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. The IC/MRC was equipped with 10 commercial telephone lines with conferencing capability. Computer linkages and facsimile machine linkages were also available.

Communications traffic was established and maintained with the Wolf Creek EOF and Technical Support Center (TSC), the CCEOC and the Rumor Control Centers in the Wichita Office of the WCNOC and in Kansas City [Kansas City Power and Light (KCPL)]. Communications traffic was maintained on the primary communications systems without breakdown, although backup systems were tested and functioned properly.

Objective Number 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was fully demonstrated. This facility provided sufficient space, furnishing, lighting, ventilation and restrooms to support emergency operations. Backup power was available.

Additional equipment was also available, including a computer/word processor and copier, as well as cots and kitchen supplies.

Staff utilized maps of the plume EPZ with appropriate planning areas labeled.

The IC contained status boards which were used to update IC staff at briefings prior to their departure for the MRC. Status boards were positioned in the IC for ease of reference and were updated in a timely manner with information on ECLs and protective action decisions.

Access to the facility was controlled by two members of the Military Police.

Objective Number 14, the ability to brief the media in an accurate, coordinated and timely manner, was not demonstrated at the IC. This objective was evaluated at the MRC, where media briefings occurred.

Objective Number 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was fully demonstrated to the extent possible at the IC.

[Per the Plan, Rumor Control Centers are established offsite. Rumor control is performed at the Wichita Office of WCNOC and at the KCPL General Office (GO) in Kansas City. All public concerns are directed to Wolf Creek Nuclear Operating Corporation in Wichita. Media monitoring is performed at both the WCNOC Wichita Office and KCPL GO, and media inquires will be directed to the Wichita Office of WCNOC.]

At the IC, the operations consisted of four incoming telephone lines staffed by four individuals. Numerous additional telephone lines were available for outgoing calls necessary to obtain information or call back inquiring parties. The rumor control number was publicized at this site by press briefings and news releases. Rumor control operators had access to current and accurate information through news releases, plant handbooks, etc., and their phone releases were authorized by the utility and State PIOs.

Also, upon receipt of a notice of a rumor from WCNOC and KCPL General Office, the rumor was discussed among utility, State and County staff, when available. Press releases were coordinated and issued, as appropriate.

Summary: No ARCAs from previous exercises remained. Objectives fully demonstrated: 1, 2, 4, 5, and 15. Objective not adequately demonstrated: 3. Objective not applicable: 14.

Areas Requiring Corrective Action

20. The IC was commanded by the utility PIO although the State PIO was to be in charge according to the Plan.

21. The first EBS message was not distributed to IC staff for two hours.

Area Recommended For Improvement

3. The State PIO team should be provided with an additional staff member to enable the State PIO to prepare, review and coordinate press releases while media briefings are taking place.

2.1.8 Media Release Center (MRC)

Objectives to be demonstrated were: 1, 2, 4, 5, 14, and 15.

The Media Release Center is located at Nichell Memorial Armory, Topeka, Kansas. As staff prepared press releases at the IC prior to actual press briefings at the MRC, there will be a great deal of overlapping documentation reflected in this section.

Objective Number 1, the ability to monitor, understand and use emergency classification levels (ECLs), was fully demonstrated. Staff at the IC were notified of changing ECLs by the Wolf Creek PIO and by hard copy notifications from the State Communications Center. Staff informed the media at the MRC of the change in ECLs during the media briefings.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated and documented at the IC, Section 2.1.7.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was not adequately demonstrated. As at the IC, operations were commanded by the Wolf Creek PIO, although the State PIO was to be in charge according to the Plan. Utility dominance was also seen at the MRC media briefings. The utility PIO conducted the media briefings and press releases listed Wolf Creek as the first releaser, before the State and County. This was identified previously as an ARCA at the IC.

Periodic briefings were held at the IC prior to MRC media briefings to update staff on the changing situation. Staff, as appropriate, were included in decision making.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was

documented under the IC. However, the Armory provided work stations equipped with phones for the press in an area separated from the media briefing room, thus fully demonstrating this objective to the extent possible for this facility.

Objective Number 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was fully demonstrated. This facility provided sufficient space, furnishings, lighting, ventilation and restrooms to support emergency operations. Backup power was available for the facility. Additional equipment was also available including a computer/word processor and copier, as well as cots and kitchen supplies.

Staff utilized maps of the plume EPZ with appropriate planning areas labeled.

Access to the facility was controlled by two members of the Military Police.

Objective Number 14, the ability to brief the media in an accurate, coordinated and timely manner, was not adequately demonstrated. The staff provided four briefings to the "media" which ranged from 17 to 28 minutes in length. These briefings were conducted by the utility, State and County PIOs, with the Wolf Creek technological representative and a moderator. Staff had access to current, accurate and timely information.

An inadequacy at this facility occurred when the staff failed in two ways to provide the media with adequate pertinent information. In the third and fourth press conferences, the staff were asked questions by members of the media which they could not answer, and they never followed up to provide these answers. Specifically, staff failed to answer questions regarding two workers injured at the plant, and inquiries about a bridge being out.

In addition to this, at the fourth press conference, the State PIO failed to adequately use a map to identify the boundaries of the protective action area. This effort to define the affected area failed until the audience assisted the State PIO in locating some of the landmarks. These problems constitute an ARCA.

With the exception of the aforementioned problems, staff provided accurate and responsive information to the media in a prompt manner. Protective action decisions were described in terms of familiar landmarks and boundaries for affected planning areas. Late breaking news was hand delivered during briefings. At the briefings, staff avoided using technical jargon. Information concerning protective actions provided to the media matched the protective action instructions provided to the public over EBS. This information was supplied to the press in a timely man-

ner from when it was provided to the public over EBS. One exception to this aspect of timeliness was the two hour delay in the distribution of the text of the first EBS message, which was cited as an ARCA for the IC.

Objective Number 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was fully demonstrated to the extent possible at this location. The location of the Rumor Control Centers was documented in Section 2.1.7. Rumors were discussed and corrected during media briefings and press releases.

Summary: There were no previous ARCAs at this facility from the previous exercise. Objectives fully demonstrated: 1, 2, 4, 5, and 15. Objectives not adequately demonstrated: 3 and 14.

Areas Requiring Corrective Action

22. The utility assumed the lead at media briefings in conflict with the State Plan.

23. MRC staff were unable to provide the media with boundaries of the protective action areas using a map, and failed to follow up on media requests for further information.

2.2 COUNTY OPERATIONS

2.2.1 Coffey County Emergency Operations Center (CCEOC)

Objectives to be demonstrated were: 1, 2, 3, 4, 5, 6, 11, 12, 13, 16, 18, 19, and 20. It was also intended that one area requiring corrective action be corrected, which existed from the September 1987 exercise, and concerned the County's failure to notify schools of protective actions in a timely manner.

The CCEOC is located at the Coffey County Courthouse in Burlington, Kansas.

Objective Number 1, the ability to monitor, understand and use emergency classification levels (ECLs), was fully demonstrated. This organization was notified of ECLs by the utility at each major change of status. ECLs were prominently displayed and staff were aware of current levels.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated. Calldowns were made between 0900 and 0946 by the Sheriff's Dispatcher and responding staff using telephone and radio. A written call list of staff names and telephone numbers, which were current, was used. All staff responded by 0947 when the facility was fully staffed.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was fully demonstrated. The Emergency Preparedness Coordinator (EPC) was effectively in charge. Periodic briefings were held to update staff on the current situation and staff were involved in decision making, as appropriate. A current copy of the Plan was available for reference. Message logs were kept for all incoming and outgoing messages and file copies were reproduced and distributed. This facility used an internal message handling system, and a record was kept of internal messages through logs or file copies. Protective action decisions and implementation of those decisions were coordinated effectively with all appropriate organizations.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. This facility employs commercial telephone with conferencing capability, radio systems, computer and facsimile machine linkages which carried all communications traffic. Backup systems were not needed to correct any breakdowns, but were demonstrated for evaluation.

Objective Number 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was fully demonstrated. This facility had sufficient space, furnishings, lighting, ventilation and restrooms. Backup power

was available. A typewriter, computer and copier were available, as well as kitchen supplies and cots which were also available and sufficient to support emergency operations. Access to the facility was controlled. Personnel utilized maps depicting the plume EPZ, which labeled appropriate planning areas, evacuation routes, traffic control points, population and planning area, relocation centers, special needs populations and the ingestion pathway. Status boards were updated in an excellent manner and were positioned for ease of reference for all staff. Status boards included ECLs, protective action decisions, weather data, plant conditions and data and facilities activated.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was not adequately demonstrated. Workers in the CCEOC, which is located within the plume exposure EPZ, had not been issued dosimetry. In addition, one member of a field team was unaware of his radiological exposure limits. These inadequacies are two ARCAs.

Forty dosimetry kits were available at this facility. Personnel dispatched from this facility were equipped with TLDs, high and low range dosimeters and exposure charts. Dosimeters were charged prior to use.

Objective Number 11, the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors, was fully demonstrated to the extent possible. The decision to evacuate John Redmond Reservoir (JRR) at the Site Area Emergency (SAE) was a preplanned protective action undertaken by the County. All other decisions were based on recommendations from the State. The ability to make appropriate protective action decisions based on other criteria was not demonstrated at this facility.

Objective Number 12, the ability to initially alert the public within the plume exposure EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local official(s), was fully demonstrated. The alert and notification system was used at the Site Area Emergency to initially alert the public within 15 minutes. The initial message included instructions for visitors on and around the JRR to evacuate to the Reception and Care Center in Emporia.

Initial alert and notification was carried out by the County EPC and the County Sheriff's Office. The process included activation of the fixed siren system and tone alert radios which were activated by the EBS system. The process was coordinated effectively among involved organizations. EBS messages followed the sirens by about a minute and were repeated every 15 minutes, per instruction at the bottom of the messages.

Objective Number 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion after the initial alert and notification has occurred, was not adequately demonstrated. EBS messages were drafted by the CCEOC and forwarded to the SEOC in Topeka for editing, release and broadcast. Messages drafted by the CCEOC and authorized by the SEOC failed to adequately provide instructions to evacuees. Messages contained no instructions regarding what evacuation routes evacuees should use and they assigned evacuees to Reception and Care Centers by subzones, omitting landmark descriptions. Furthermore, two messages stated that patients and residents of hospitals and nursing homes were being evacuated to area hospitals, when no such facilities were impacted by protective actions. This error occurred when a draft message was prepared using a prescripted EBS message. The prescripted text included a reference to these special populations and this reference should have been crossed out, but remained in the body of the message. In addition, following the evacuation of LeRoy School, EBS messages failed to inform the public of the location of evacuated school children. These inadequate EBS messages are a deficiency.

Other aspects of the CCEOC operations showed that prescripted messages were used and when released, were rebroadcast every 15 minutes. Staff had access to current, accurate and timely information which was received directly from the utility at the EOF. Protective action areas were identified in terms of accurate familiar local landmarks and boundaries. Messages addressed how to maximize protection when sheltering, use of ad hoc respiratory protection, etc.

A log was maintained of all releases disseminated to the public and copies were kept and accessible to all staff. Information released to the media was provided to the County by the MRC, which telefaxed news releases to the CCEOC.

Objective Number 16, the ability to distribute and administer KI once the decision was made, if necessitated by radioiodine releases, was fully demonstrated. When the State of Kansas chose to order distribution of KI, the call was received by CCEOC at 1302. Staff at this facility were knowledgeable of procedures for KI use and means of notification. A list was prepared to identify all emergency response personnel in the County who should be supplied with KI. At 1319, personnel were given instructions to deliver KI to ambulance drivers and patients, County Road and Bridge Department personnel, and Sheriff's Department personnel. At 1324, courier personnel were dispatched to deliver the KI to all but the jail population. At 1327, the courier was dispatched to the jail. KI distribution included sufficient quantities and was performed in a timely manner. Instructions for KI use were included.

KI was distributed to the jail in Sector SW-1, although this subsector was not in the protective action area; however, officers in the jail faced assignment to the field.

Objective Number 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit dependent persons, special needs populations, handicapped persons and institutionalized persons), was fully demonstrated. Staff at this facility implemented protective actions for special needs populations with the assistance of the County Road and Bridge Department.

Transit dependent, special needs and institutionalized persons were all identified by computer lists. Telephone calls were made to all such people except the hearing impaired, who were actually contacted by County Road and Bridge Department personnel at the direction of the County Engineer.

Transportation was provided for transit dependent persons to pickup points in LeRoy. An ambulance simulated transporting a bedridden resident to the Reception and Care Center.

Health officials maintained good contact with hospitals and nursing homes. The County exhibited a good system for effectively dealing with special needs populations.

Objective Number 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was fully demonstrated. The County Commissioners agreed to enact the protective action concerning school evacuation at 1208. A call was simulated to the LeRoy School at 1221. The County then undertook traffic control efforts to assist the school in evacuating. This corrected an ARCA from the September 1987 exercise, in which the County failed to notify the schools of protective actions in a timely manner. In fact, all schools were notified of each ECL by the Sheriff's Dispatcher.

Objective Number 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated areas, was fully demonstrated. The access control demonstrated at this facility was the simulated placement of KHP Officers at State Highways. This was adequately demonstrated.

Traffic and access control points were identified and set up at locations which were chosen in conjunction with areas under protective actions and were outside the affected area. It took County personnel approximately 15 minutes to establish access control points after the areas under protective actions were identified.

Traffic controllers had the capability to receive instructions from CCEOC staff.

Necessary dosimetry for traffic and access control personnel was available, although actual dispatch of Sheriff's Deputies was neither required nor performed.

Summary: The previously identified ARCAs, regarding timely notification of schools, was corrected at this exercise. Objectives fully demonstrated: 1, 2, 3, 4, 5, 11, 12, 16, 18, 19, and 20. Objectives not adequately demonstrated: 6 and 13.

Deficiency

6. CCEOC drafted and released, to the SEOC, inadequate EBS messages for dissemination of public emergency information. These messages were inadequate in the following respects: a) evacuation messages failed to identify evacuation routes; b) the public was directed to Reception and Care Centers based upon the emergency planning zone subarea in which they reside; however, these subareas were not described in terms of local landmark descriptions for each Reception and Care Center; c) the public was not informed of the Reception and Care Center to which school children had been evacuated; and d) the EBS message erroneously informed the public of hospital and nursing home evacuations when no such facilities were impacted.

Areas Requiring Corrective Action

24. CCEOC personnel were not issued dosimetry.

25. One emergency worker dispatched to the field was not aware of his exposure limits.

2.2.2 Coffey County Road and Bridge Department

Objectives to be demonstrated were: 2, 3, 4, 5, 6, 12, 16, 18, 20, and 25.

One ARCA remained from the September 1987 Wolf Creek exercise, in which the County Shop had no current copy of the County Plan.

The Coffey County Road and Bridge Department is located at the County Shop in Burlington, Kansas.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated. Normal duty hours were in effect during the exercise, so some personnel were present in the County Shop when the notifications began. Calldowns were com-

pleted at 0944 by the County Shop secretary using telephone and radio while referring to a written call list. Call list information was current. Staff were mobilized to their preliminary assignments as members of JRMTs, access control teams, hearing impaired and secondary roadblock teams, transportation assistance and evacuation confirmation teams, road service and ice control teams. Those personnel who staff the shop facility and emergency road service crews also serve as decontamination team members. Staffing was accomplished at 1010, for all personnel.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was fully demonstrated. The Road Supervisor was effectively in charge of the facility. A current copy of the County Plan was available which corrected an outstanding area requiring corrective action from the September 1987 Wolf Creek exercise. Periodic briefings were held to update staff on the situation and staff were involved in decision making, as appropriate. Message logs were kept of all incoming and outgoing messages, and pertinent information was promptly provided to staff.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. The County Shop was equipped with three commercial telephone lines, a radio system base station and attendant mobile and hand-held radios. All County Road and Bridge Department vehicles were equipped with radios to maintain contact with the County Shop. Communications traffic was maintained between this facility and the CCEOC and Sheriff's Department, as well as County Road and Bridge Department vehicles. Backup communication systems were demonstrated although primary systems were capable of handling all traffic without breakdown.

Objective Number 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was fully demonstrated. Sufficient space, lighting, furnishings, ventilation and restrooms were available at this facility. A typewriter and computer were also available to support emergency operations. Maps of the plume EPZ were posted and utilized by staff. A status board was used, updated regularly and positioned for ease of reference by staff. ECLs and protective action decisions were monitored and posted.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was fully demonstrated. Emergency workers were issued TLDs and a mid-range dosimeter. Personnel charged dosimetry on the available charger prior to use, knew their exposure limits and procedures if overexposure occurred or became necessary. Staff were equipped with exposure record charts and read and recorded values properly.

Objective Number 12, the ability to initially alert the public within the plume exposure EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local official(s), was fully demonstrated within the responsibilities of this facility. Primary alerting was not a responsibility of this facility, except that alerting of hearing impaired individuals was accomplished by actual contact. County Road and Bridge Department personnel assembled a hearing impaired alerting team. The County Engineer at the CCEOC called the County Shop to dispatch the hearing impaired alerting team.

Objective Number 16, the ability to distribute and administer KI once the decision was made, if necessitated by radioiodine releases, was fully demonstrated, to the degree possible by personnel from this facility. Following the decision by appropriate personnel that KI should be distributed, the CCEOC contacted the County Shop. County Shop personnel were told that KI was being ordered and that a list of County Road and Bridge Department personnel in the field who needed KI should be provided to the EOC. Within 10 minutes, the list of County Road and Bridge Department personnel needing KI was provided to the CCEOC so that CCEOC personnel could distribute KI to them. Prior to dispatch, knowledge of KI purpose and procedures was exhibited by the County Road and Bridge Department personnel.

Objective Number 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit dependent persons, special needs populations, handicapped persons and institutionalized persons), was fully demonstrated. County Road and Bridge Department personnel assembled teams to provide transportation, ice control, emergency road service, block secondary roads, and evacuation confirmation. The County's transportation dependent persons and other special needs populations are listed by computer and the County Road and Bridge Department's teams are assembled and dispatched to assist them accordingly.

Objective Number 20, the organizational ability and resources necessary to control evacuation traffic flow and control access to evacuated areas, was fully demonstrated. At the County Shop, the County Road and Bridge Department assembled personnel to establish access and traffic control points on County roads. This effort was undertaken in concert with KHP and KNG personnel who were also establishing control of area roads.

The CCEOC notified the County Road and Bridge Department of two locations for initial traffic and access control at 1110. These control points were established at 1136 and 1143. As the protective action area enlarged, these control points were moved in accordance with CCEOC instructions. Traffic ingress and

egress points were outside the affected area and were established in a timely manner by personnel who had accurate knowledge of their emergency response role in evacuation routes and access control.

Objective Number 25, the adequacy of facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers, equipment and vehicles and for waste disposal, was fully demonstrated to the extent planned at this facility. Personnel are decontaminated at the Reception and Care Centers. Emergency vehicles were monitored and decontaminated at the Coffey County Shop. Contaminated, uncontaminated and unmonitored vehicles could be kept separate. Following monitoring of the vehicle, the driver was also monitored. The car, which was simulated to be contaminated, was actually decontaminated at the facility. A unique device for decontaminating the underbelly of vehicles had been developed by facility personnel and was observed to work very well. The remainder of the vehicle was decontaminated with hot, soapy water and rinsed, then resurveyed. Procedures were good. Water pressures were kept low to avoid spreading contamination. The air filter was removed and monitored.

Procedures and equipment were ready for isolating contaminated clothing, equipment and personal articles. The area where decontamination was performed was shielded from surrounding areas by large curtain like devices.

Summary: One ARCA from the September 1987 Wolf Creek exercise, in which the County Shop had no current County Plan, was resolved at this exercise. Objectives fully demonstrated: 2, 3, 4, 5, 6, 12, 16, 18, 20, and 25.

2.2.3 Medical: Coffey County Hospital

Objectives to be demonstrated were: 6 and 24.

The Coffey County Hospital is located in Burlington, Kansas. Coffey County Hospital is the primary hospital for the Wolf Creek Generating Station and is located within the plume exposure EPZ itself.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was fully demonstrated. Hospital personnel were each equipped with a TLD, both high and low range dosimeters, appropriate instructions for dosimeter use and an exposure record chart on which to record readings. Each person had access to a charger for the direct-reading dosimetry, had charged his/her dosimeters and recorded initial values.

Personnel were aware of their radiological exposure limits, and were knowledgeable of what to do if they received an exposure

higher than authorized, or needed authorization to incur exposure higher than authorized.

Objective Number 24, the adequacy of medical facilities, equipment, procedures and personnel for handling contaminated, injured or exposed individuals, was fully demonstrated. Upon arrival, the hospital demonstrated procedures for checking the patient for radiological contamination and for decontamination of the patient. The proper monitoring equipment was used and carried a recent calibration date. Proper procedures were used.

Staff were aware of levels for initiating decontamination and continued proper decontamination procedures until normal readings were obtained. Staff utilized proper contamination control measures and wore full protective clothing.

Contamination control was demonstrated for this area of the hospital; and visitors and other hospital personnel were prevented from entering the area. Prior to departure, the ambulance and crew were properly monitored by hospital personnel to ensure that they were not contaminated.

Summary: There were no previous inadequacies at this facility which required redemonstration at this exercise. Objectives fully demonstrated: 6 and 24.

2.2.4 Medical: Lyon County Ambulance Service

Objectives to be demonstrated: 4, 6, 16, and 23.

This was the first exercise for this ambulance service. No previous ARCAs existed for correction at this exercise.

The Lyon County Ambulance Service is located in Emporia, Kansas.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. The ambulance contained two radio systems, a low band radio which provided communications with the Emporia Dispatcher, and a Kansas Medical System Radio which was capable of contact with all medical channels in Kansas, including Coffey County. In addition, a hand-held unit carried by the crew was capable of contact with the Emporia Dispatcher and an additional radio in the cab could have reached Coffey County. Communication linkages were demonstrated between the hospital and the ambulance enroute.

The primary systems were capable of handling all communications traffic from the ambulance without noticeable delay. Backup systems were demonstrated for evaluation, but not required by a breakdown in the primary system.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was fully demonstrated. Ambulance crew members were equipped with TLDs and both high and low range dosimetry. The ambulance crew had access to a dosimeter charger at their dispatch center and had charged their dosimeters and recorded their initial readings upon dispatch. Each crew member had been issued an exposure record chart and instructions for the use of dosimetry. All were aware of their radiological exposure limits and the procedures necessary to receive authorization to exceed exposure limits or to report an exposure higher than authorized.

Objective Number 16, the ability to distribute and administer KI once the decision was made, was fully demonstrated. Ambulance crew members were aware of procedures for the use of KI.

Objective Number 23, the adequacy of vehicles, equipment, procedures and personnel for transporting contaminated, injured or exposed individuals, was fully demonstrated. Upon arrival at the scene, the patient was evaluated for injuries and surveyed for contamination, with a recently calibrated monitoring instrument. Readings were recorded. Crew members were aware of the action level which required decontamination. When determined to be contaminated, the patient was wrapped to prevent the spread of contamination. The crew wore appropriate protective clothing which included masks and paper anti-contamination suits.

The patient was transported to Coffey County Hospital and delivered to the correct entrance. The crew was knowledgeable of both the primary and backup hospital. Proper procedures for contamination control were employed by crew members in the use and disposal of contaminated clothing and supplies.

Summary: This was the first demonstration for this ambulance service. Objectives fully demonstrated: 4, 6, 16, and 23.

2.2.5 Unified School District #243 - Waverly

Objectives to be demonstrated were: 4, 6, 16, and 19.

One ARCA remained from the September 1987 Wolf Creek exercise in which the driver failed to know his exposure limits or how to read his dosimeter.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. The School Superintendent of the Unified School District (USD) #243, Waverly, was informed of emergency actions by telephone and could also have been notified by tone alert radio. Both communication links were observed to work well during this exercise. The Superintendent communicated with the schools

via telephone, but was also equipped with an FM radio link which he demonstrated for this evaluation.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was not adequately demonstrated.

The school bus driver, who reported to the school, was equipped with a TLD, one 0-200 mR dosimeter, and a record keeping chart. Dosimetry was, therefore, inadequate by not including a mid or high range dosimeter capable of reading higher than 200 mR. This is an ARCA.

The driver did know his dose limits and how to read his dosimeter, which corrected the ARCA from the September 1987 Wolf Creek exercise. The driver had instructions for use of dosimetry and an exposure record chart on which to record dosimeter readings. The driver knew who to contact if he needed permission to exceed his dose limits, or if he received an exposure higher than authorized.

Objective Number 16, the ability to distribute and administer KI once the decision was made, was not adequately demonstrated. The bus driver was knowledgeable of KI and its possible use during his emergency response, and of possible side effects. The driver knew how he would be told to take KI; however, he did not know how KI would be made available to him. This is an ARCA.

Objective Number 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was fully demonstrated.

The School Superintendent received a call advising him to evacuate his schools to Ottawa. He then called the bus barn to alert the drivers, instructing them to evacuate the grade school first, then the high school. The Superintendent then called the grade school to tell them to evacuate to Ottawa, and that the buses had been called and would be arriving immediately. The high school was then called to warn of the evacuation and that buses would arrive after the grade school students had been picked up.

At the grade school, the principal received the instruction to evacuate. Through the use of an interview, it was determined that the teachers were to have been notified of the evacuation, student roll was to have been taken, and the school was to have been searched and closed up. Buses were then to have been loaded and student roll again checked. Buses would then depart for Ottawa. Written procedures were available for use by the Principal in the implementation of this process.

The Principal was also aware of procedures for sheltering within the building and at which point doors, windows and ventilation systems would have been secured.

The bus driver was contacted by telephone at the bus barn in Waverly which is close to the schools. He could also have been reached by radio or pager. It took five minutes for the bus to arrive at the grade school. The driver was knowledgeable of evacuation routes and the location of the Reception and Care Center for this portion of the EPZ.

Summary: One previous ARCA, regarding the bus driver's knowledge of his exposure limits and procedures for reading and recording dosimeters, was resolved at this exercise. Objectives fully demonstrated: 4 and 19. Objectives not adequately demonstrated: 6 and 16.

Areas Requiring Corrective Action

26. The bus driver was not equipped with either a mid or high range dosimeter capable of reading higher than 200 mR.

27. The bus driver was unaware of how and where he would receive KI.

2.2.6 Allen County Reception and Care Center

Objective to be demonstrated was: 34.

The Allen County Reception and Care Center is located at the National Guard Armory, 1021 N. State Street, Iola, Kansas. Evaluation of this facility was performed on December 5, 1989.

Objective Number 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was not adequately demonstrated. Allen County failed to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in FEMA GM PR-1, and is a deficiency.

Summary: Objective not adequately demonstrated: 34.

Deficiency

7. Allen County failed to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in GM PR-1.

2.2.7 Franklin County Reception and Care Center

Objectives to be demonstrated were: 21 and 34.

The Franklin County Registration Center is located at the Ottawa High School, 11th and Ash, Ottawa, Kansas. Evaluation of this facility was performed on December 5, 1989.

Objective Number 21, the adequacy of procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees, was partially demonstrated to the degree required.

The previous demonstration of this facility was incomplete in that the shower facilities used for evacuee decontamination were unavailable for inspection. This evaluation, therefore, focused only on the adequacy of this portion of the physical facility.

Adequate separation of contaminated persons from uncontaminated persons was demonstrated. Evacuees were segregated at the monitoring line, at which time contaminated individuals were routed to the shower facilities. The showers were segregated for male and female. A large area was available for disrobing and included an area designated for bagging and tagging of belongings. The shower was adequately large. There was an area into which the evacuees could then go, where remonitoring could be performed and the distribution of replacement clothing could be accomplished.

Objective Number 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was not adequately demonstrated. Franklin County failed to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in GM PR-1, and is a deficiency.

Summary: Objective partially demonstrated: 21. Objective not adequately demonstrated: 34.

Deficiency

8. Franklin County failed to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in GM PR-1.

2.2.8 Lyon County Reception and Care Center

Objectives to be demonstrated were: 2, 3, 4, 6, 21, 22, and 34. In addition, an ARCA identified in the 1984 exercise and

which concerned the use of campus police as a communications linkage, was corrected in this exercise.

The Lyon County Reception and Care Center is located at the Emporia State University Campus in Emporia, Kansas. Evaluation of this facility was performed on December 5, 1989.

Objective Number 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was fully demonstrated. This facility was demonstrated out of sychronization with the exercise. Calldowns were begun by the County Clerk using a computer generated roster.

Objective Number 3, the ability to direct, coordinate and control emergency activities, was fully demonstrated. The Lyon County EPC was effectively in charge of the emergency response. Periodic briefings were held to update staff on the situation and new information was promptly provided to staff. An internal message handling system was used at this facility and the Sheriff's Dispatcher kept records of messages through logs or file copies. A current copy of the Plan was available for reference.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated. Commercial telephones and law enforcement radio systems were available for communications linkages at this facility, as well as RACES (Radio Amateur Civil Emergency Services, i.e., a volunteer portable ham operator) support. Backup communications were demonstrated by the RACES operator although no breakdowns required use of backup systems.

The appropriate use of planned communications systems corrected an ARCA from the 1984 Wolf Creek exercise, when campus police communication linkages, which did not comply with existing plans, were used by this facility.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was fully demonstrated. Monitoring personnel were each equipped with a TLD and both high and low range dosimeters. Each monitor was also equipped with instructions for use of dosimetry and exposure record charts on which to record dosimeter readings. This staff had access to dosimeter chargers and had charged their dosimetry and recorded initial readings. Additionally, they were aware of their radiological dose limits, what to do if they exceeded their authorized limits or needed authorization to exceed those limits. All monitors exhibited a very good understanding of protective procedures.

Objective Number 21, the adequacy of procedures, facilities, equipment and personnel of the registration, radiological monitoring and decontamination of evacuees, was fully demon-

strated. Reception Center monitoring was demonstrated by 2 seven person teams, one performed evacuee monitoring and the other recorded results in counts per minute. When a scan was completed, those evacuees who were not contaminated were given a hand stamp and were directed to registration. Those evacuees who were discovered to be contaminated were directed to the showers. Monitors were aware of the action level for decontamination of evacuees. This procedure was adequate to segregate contaminated individuals from noncontaminated individuals.

Monitoring personnel were made up of personnel from the County Emergency Management Office, County Sheriff's Office and the County Division of Health.

Fourteen monitors were present for the evaluation of seven two person teams. This was adequate to satisfy FEMA's requirement that 1/3 of the total number of monitors required to monitor 20% of the population to be received at a host county be evaluated during demonstration of this objective.

If evacuees were found to be contaminated, they were decontaminated at this facility via a system which provides total segregation of clean and contaminated persons. If contaminated, evacuees followed a closed route to the area where disrobing and showering took place and where evacuees were remonitored upon completion of showering. If the person was still contaminated, the Reception Center Manager was notified. After all evacuees had been processed, bagged and tagged clothing was removed. Paper gowns were available for passage to reception and care.

A sufficient number of CDV-777 radiological monitoring kits were available for this facility and the survey meters were labeled to indicate proper calibration.

Adequate arrangements had been made for segregating contaminated and unmonitored vehicles from clean vehicles and sufficient parking was available for the number of expected cars. Procedures for the monitoring of evacuee vehicles were demonstrated. Monitoring personnel were aware of the action level for decontamination of vehicles and decontamination of these vehicles was to occur at this location. Contaminated vehicles were moved to an isolated soccer/baseball field which was equipped with a hydrant for water hookup. Here, the vehicles were washed down, remonitored and returned to the main parking area, if clean. All parked vehicles were impounded until monitored.

Registration procedures were demonstrated and no evacuee would have been processed without first receiving a hand stamp from the monitoring station signifying that he/she was uncontaminated. The only alternative to the "clean" stamp process would occur if an evacuation had been undertaken as a precaution, in the absence of a release from the plant.

The overall Reception and Care Center evaluation revealed that both the first shift Reception Center Manager and his replacement were very knowledgeable of functions and activities of the Center, as defined by the Plan. The monitoring teams displayed good technique and the supervisor was knowledgeable of procedures for special cases, e.g., mothers with nursing children.

One area is recommended for improvement. Decontaminated individuals should have access to clothing, beyond simple paper gowns, before departing the Reception Center and arriving at the Congregate Care Center.

Objective Number 22, the adequacy of facilities, equipment and personnel for congregate care of evacuees, was fully demonstrated. Congregate care facilities were located on the campus of Emporia State University where dormitory and other University buildings were made available through prior agreement. Sufficient shelter space is available on campus for all expected evacuees. Shelter staff were aware of alternative resources, if shelter capacities were exceeded. University facilities contained sufficient sleeping accommodations which would have been available within 24-hours, as well as sufficient toilets, drinking water, secure storage and parking for the expected evacuees. Food supplies were available immediately, from the University cafeteria, with support from the American Red Cross and Salvation Army warehouses within 24-hours.

Shelter facilities were staffed and equipped to handle disabled evacuees, such as those in wheelchairs, and a nursing station was established in the facility.

Quick access was available to hospital care and crisis counseling was available in the community.

Periodic briefings were held by the Center Manager to inform the public of events in the affected area and staff had been briefed by the Center Manager regarding pertinent aspects of the care facility, such as how many evacuees were expected.

Objective Number 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was fully demonstrated. The organization demonstrated a shift change at 1510. Both Lyon County Reception and Care Center Managers, one from each of the two planned 12-hour shifts, were knowledgeable of Lyon County Reception and Care procedures. Each Center Manager was familiar with the facility, layout and procedures for the activation and operation of the facility. Both Center Managers were aware of procedures to provide monitoring and decontamination, congregate care locations, and the capability to provide congregate care.

Summary: One ARCA from the 1984 Wolf Creek exercise was corrected at this exercise, when communication linkages were utilized in accordance with present Plans. Objectives fully demonstrated: 2, 3, 4, 6, 21, 22, and 34.

Area Recommended For Improvement

4. Decontaminated individuals should have access to clothing, beyond simple paper gowns, for the trip from the Reception Center to the Congregate Care Center.

3 SUMMARY OF DEFICIENCIES AND AREAS REQUIRING CORRECTIVE ACTION

DEFICIENCIES

KANSAS STATE OPERATIONS

State Emergency Operations Center (SEOC)

1. The SEOC failed to correct inadequate EBS messages generated by the CCEOC, which resulted in inadequate instructions being issued to the public. (Corrected at remedial.)

Joint Radiological Monitoring Teams (JRMTs)

The JRMTs provided an inadequate demonstration of their role by using only one of the two evaluated field teams to define and track the plume.

More specifically, this demonstration resulted in four deficiencies, numbers 2 through 5, for the JRMTs.

2. One field team demonstrated the appropriate equipment and procedures for determining field radiation measurements. The second team did not demonstrate this capability. (Corrected at remedial.)

3. One field team demonstrated the appropriate equipment and procedure for the collection of an airborne radioiodine sample in the presence of noble gases, except for a failure to aspirate the cartridge. This team took the requisite air samples, but the second team did not demonstrate this capability. (Corrected at remedial.)

4. Neither team demonstrated the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analysis.

   One team partially demonstrated this objective by taking an air sample. However, it did not package the particulate filter, nor dispatch it for transport to the laboratory for analysis. The second team did not demonstrate this capability. (Corrected at remedial.)

5. Neither team fully demonstrated a shift change required for demonstration in 1989. This failure caused the JRMTs to exceed the six year requirement imposed by NUREG-0654, as redefined in Guidance Memorandum (GM) PR-1.

One team partially demonstrated this objective by a shift change of the County team member only. The second team did not demonstrate this capability. (Corrected at remedial.)

COUNTY OPERATIONS

Coffey County Emergency Operations Center (CCEOC)

6. CCEOC drafted and released, to the SEOC, inadequate EBS messages for dissemination of public emergency information. These messages were inadequate in the following respects: a) evacuation messages failed to identify evacuation routes; b) the public was directed to Reception and Care Centers based upon the emergency planning zone subarea in which they reside; however, these subareas were not described in terms of local landmark descriptions for each Reception and Care Center; c) the public was not informed of the Reception and Care Center to which school children had been evacuated; and d) the EBS message erroneously informed the public of hospital and nursing home evacuations when no such facilities were impacted. (Corrected at remedial.)

Allen County Reception and Care Center

7. Allen County failed to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in GM PR-1. (Corrected at remedial.)

Franklin County Reception and Care Center

8. Franklin County failed to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in GM PR-1. (Corrected at remedial.)

AREAS REQUIRING CORRECTIVE ACTION

KANSAS STATE OPERATIONS

State Emergency Operations Center (SEOC)

1. The SEOC Communications Center staff failed to distribute an EBS release to the Operations staff and the Information Clearinghouse staff after it was issued to the public.

2. The SEOC backup radio communications system with the plant EOF failed.

Dose Assessment/Field Team Coordination

3. Dose Assessment and Field Team Coordination personnel failed to record the implementation of a protective action on the status board and logs for 40 minutes.

4. The initial protective action recommendation was released by the utility to the County and then the County to the SEOC without consultation/coordination with State representatives at the EOF. This same inadequacy was observed at the September 1987 Wolf Creek exercise and remains an ARCA to be demonstrated at the next exercise.

Forward Staging Area (FSA)

5. Telephone equipment failed to work properly for the Kansas Highway Patrol (KHP), and radio communication traffic was also intermittent.

6. Kansas National Guard (KNG) and KHP personnel were inadequately equipped with dosimetry in that only a low range dosimeter was worn. TLDs and film badges were available for distribution, but not distributed to the KHP; and, KNG personnel entered the plume EPZ without dosimetry.

7. KI was not distributed to KHP personnel, although KNG representatives had acquired KI for distribution to them.

8. The KHP monitoring instrument was out of calibration.

Joint Radiological Monitoring Teams (JRMTs)

9. Teams failed to wear anti-contamination clothing. (Corrected at remedial.)

10. Dosimeters prepared for JRMT use were charged and recorded as reading zero, when some read as high as 180 mR. (Corrected at remedial.)

11. Team 1 read and recorded dosimetry values only once during the entire exercise. (Corrected at remedial.)

12. Team 1 members were unaware of where vehicle decontamination was available.

13. Neither team knew their radiological dose limits. (Corrected at remedial.)

14. Team 2 failed to demonstrate the availability of all necessary equipment for field sample taking. As an example, this team did not demonstrate that they had preservative, cool-

ers, scoops, shovels, clippers, funnels, etc. (Corrected at remedial.)

15. Team 1 did not adequately label soil samples. The team failed to identify the size of the area from which samples were taken (i.e., a square meter, or a square foot, etc.). Failure to provide sample configuration would make ground deposition determinations impossible. (Team 1 attempted to correct this ARCA at the remedial; however, labeling of samples was still inadequate and remains an ARCA to be corrected at the next exercise.)

16. Team 2 failed to adequately label vegetation samples. The team failed to identify the size of the area from which samples were taken (i.e., a square meter, or a square foot, etc.). Failure to provide sample configuration would make ground deposition determinations impossible. (Corrected at remedial.)

17. Both teams failed to monitor the ground surface at sample locations prior to taking soil samples. (Corrected at remedial.)

18. Team 1 failed to follow written procedures for soil sampling by collecting a soil sample 1/2 inch deep from an area approximately 100 cm^2. Soil sampling procedures in the Plan and SOPs conflict, in that they provide for samples to be from areas of 625 cm^2 or 1 m^2. (Corrected at remedial.)

Radiological Laboratory (RADLAB)

19. The laboratory measured/counted vegetation and soil sample aliquots without reference or documentation of the size of the original sample area, or the portion of that sample which made up the aliquot analyzed. This factor must be addressed by improved procedures to assure that ground deposition values can be derived from field sample analyses.

Information Clearinghouse (IC)

20. The IC was commanded by the utility PIO although the State PIO was to be in charge according to the Plan.

21. The first EBS message was not distributed to IC staff for two hours.

Media Release Center (MRC)

22. The utility assumed the lead at media briefings in conflict with the State Plan.

23. MRC staff were unable to provide the media with boundaries of the protective action areas using a map, and failed to follow up on media requests for further information.

COUNTY OPERATIONS

Coffey County Emergency Operations Center (CCEOC)

24. CCEOC personnel were not issued dosimetry.

25. One emergency worker dispatched to the field was not aware of his exposure limits.

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26. The bus driver was not equipped with either a mid or high range dosimeter capable of reading higher than 200 mR.

27. The bus driver was unaware of how and where he would receive KI.

4 REMEDIAL EXERCISE

January 17-18, 1990

The deficiencies summarized in Section 3 necessitated a remedial exercise for the State of Kansas SEOC and the CCEOC. This was held on January 18, 1990. Other deficiencies necessitated a remedial exercise of the JRMTs and the Allen and Franklin County Reception and Care Centers. These functions were redemonstrated on January 17, 1990.

4.1 KANSAS STATE OPERATIONS

4.1.1 State Emergency Operations Center (SEOC)

The remedial demonstration at the SEOC required the adequate demonstration of Objective Number 13, so as to correct the SEOC's failure to correct inadequate EBS messages disseminated during the December 6, 1989 exercise.

Objective Number 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion after the initial alert and notification has occurred, was fully demonstrated. Appropriate staff disseminated instructions to the public after the first alert and notification sequence during the remedial exercise. The SEOC was notified of SAE at 1033 and the initial protective action recommendation (PAR) required the evacuation of JRR. At 1037, the CCEOC finished providing the text of the draft EBS message to the SEOC and staff immediately contacted the EBS station. (CCEOC and SEOC times differed slightly due to clock differences.) By 1038, the text had been provided to the station and the station was directed to air the message at 1040. The second PAR, received by the SEOC at 1100, at the time of the General Emergency notification, recommended downwind sectors K, L, and M be evacuated from 0 to 10 miles. This area was defined as subzones CTR, JRR, S-1, SW-1, W-1, S-2, SW-2 and W-2. Milk producing animals were placed on stored feed in the same area. CCEOC drafted the EBS message and telephoned it to the SEOC, finishing at 1112. At that time, the SEOC called the EBS station to convey the message for broadcast. The message was completed at 1115, and the EBS station was told to broadcast it beginning at 1120. These messages were rebroadcast every 15 minutes as indicated on the prescripted messages.

The staff had access to current, accurate and timely information. They obtained PARs from Wolf Creek and protective action decisions from the CCEOC. The SEOC then notified the CCEOC of the timing of the EBS message broadcast. Newly written

prescripted messages were used which corrected problems from the December 1989 exercise.

Message content was scrutinized to ensure that specific inadequacies within the EBS messages, observed at the initial exercise, were corrected. In these messages, protective action areas were accurately described in terms of familiar landmarks and boundaries for the affected areas. Messages included instructions for transients without shelter. Evacuation routes and the locations of Reception and Care Centers were identified in messages for subareas of the EPZ which were defined by landmark descriptions. The public was correctly informed of the Reception and Care Centers to which school children had been evacuated and that hospital and nursing home residents also were being evacuated.

Formulation and dissemination of these messages were coordinated effectively and provided accurate and timely information to the public.

A log was maintained of all releases disseminated to the public and copies of releases were kept and were accessible to staff. Return flow of information from the SEOC to the CCEOC was accomplished well. When the CCEOC initially contacted the SEOC with an EBS message, a time was specified for the broadcast of that message over EBS. After the SEOC had given the message to the EBS station, the EBS station was instructed to air that message at the specified time. The CCEOC was then called to reconfirm the timing of the EBS broadcast.

The communications coordinator handled EBS messages rapidly. Also commendable was the demonstration of the EBS station link in the remedial. The EBS calls were transmitted from the SEOC to a simulated EBS station. The message was actually taken down by a simulated EBS representative, allowing confirmation of accurate message transmission. The message was then reread, as if by a broadcaster, to assess the time needed to read the messages.

This redemonstration of Objective Number 13 corrected the deficiency identified during the December 6, 1989 Wolf Creek exercise.

4.1.2 Joint Radiological Monitoring Teams (JRMTs)

The deficiencies for the JRMTs required correction through a shift change at a remedial exercise. This shift change required four teams to fully demonstrate field team operations, two teams in a first shift and two teams in a second shift. All three members of each team were required to demonstrate a shift change.

To fully demonstrate field team operations, each team was required to demonstrate Objectives Number 4, 6, 7, 8, 9, 16, 27, and 34.

Objective Number 4, the ability to communicate with all appropriate locations, organizations and field personnel, was fully demonstrated.

Communications traffic for both shifts of both field teams was adequately handled by portable radios and radios affixed to the field team vehicles. Contact was maintained with the Field Team Coordinator at the EOF without any observed delay or breakdown.

Objective Number 6, the ability to continuously monitor and control emergency worker exposure, was fully demonstrated.

Each team member was equipped with a TLD and three direct-reading dosimeters. The ranges of the dosimeters were 0 to 200 mR, 0 to 5 R and 0 to 200 R. Coffey County personnel had been equipped by the County with Civil Defense dosimeters at the CCEOC and were, therefore, doubly equipped. Dosimetry was provided to teams at the EOF, where a large stock was stored, and where chargers were available. Dosimetry was charged and initial values were correctly recorded at the EOF. This corrected an ARCA cited for incorrectly recorded initial readings during the December 6, 1989 exercise.

During the remedial exercise, dosimetry was read and values recorded each 30 minutes, when prompts were given to the teams by radio, and values were reported to the EOF for record keeping at that location. This corrected an ARCA cited for insufficient monitoring and recording of dosimetry values during the December 6, 1989 exercise.

Appropriate instructions were issued regarding dosimeter use and team members all knew their radiological exposure limits. All team members were aware of procedures to seek permission to exceed authorized exposure levels and what to do if they receive an exposure higher than authorized. This corrected an ARCA cited because team members failed to know their radiological dose limits during the December 6, 1989 exercise.

One area is recommended for improvement. Field team kits should each include a dosimeter charger. This capability would enhance team performance. Teams are not presently capable of recharging dosimeters in the field; they must return to the EOF if recharging of dosimetry becomes necessary.

The teams were equipped with full anti-contamination clothing including coveralls, hoods, boots and boot covers. Team res-

pirators had available lens inserts for people with glasses. To avoid the public concern generated by teams working in full anti-contamination gear, evaluators assessed the adequacy of team equipment and procedural training by having members of the first shift dress out prior to leaving the EOF. Procedures for removal of this equipment were then demonstrated across a simulated hotline. The first shift teams were then dispatched to the field. Second shift personnel were permitted to relieve the first shift and perform their duties without donning their anti-contamination clothing; however, upon conclusion of the exercise, the second shift demonstrated the correct use of protective clothing. In this way, with the exception of surgical gloves, anti-contamination clothing was not worn in public. This demonstration of protective equipment corrected an ARCA from the December 6, 1989 exercise.

Objective Number 7, the appropriate equipment and procedures for determining field radiation measurements, was fully demonstrated. The teams were properly equipped, had access to equipment spares, utilized an equipment checklist, and performed battery and source checks. Equipment had been calibrated within the prescribed time limit.

Teams had maps showing predetermined monitoring points and were able to promptly find and arrive at monitoring locations. This endeavor was aided by the local team members who were familiar with the area. Vehicles were large enough for all equipment and personnel.

Team members used the appropriate instrument and scale for the range supplied by the controller. Readings were logged along with location, time, date and name of the monitor.

Determination of groundshine was demonstrated by taking gamma only and beta plus gamma readings at about one meter (waist level) and at about 2 cm (near ground level). Field readings were transmitted promptly to the EOF. This corrected the deficiency.

Objective Number 8, appropriate equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^{-7} (.0000001) microcurie per cc in the presence of noble gases, was fully demonstrated. The teams were equipped with appropriate equipment which included an air sampler (pump). Team vehicles were equipped with an inverter which provided the power to operate the sampler. Teams used an appropriate iodine absorber (silver zeolite) and particulate filter paper. Air samples were taken using the proper flow rate and sample duration. Sample components were properly bagged and labeled with time, date, location and identification of the person who took the samples. Teams left the plume and traveled to a low background area before attempting to count the air sample media with an instrument which

was within its calibration date. Air cartridges were aspirated by hand prior to counting. This demonstration by both teams corrected the deficiency cited in the December 6, 1989 exercise regarding demonstration of this objective.

A fixed (reproducible) geometry used to count the air sample media was transmitted promptly to the EOF.

Teams demonstrated the procedures for converting the counting data to radioiodine concentrations while in the field.

Objective Number 9, the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analysis, was fully demonstrated. Teams in the first shift took their air samples separately between 1050 and 1130. Both left the plume to count the samples and reported data to the EOF between 1130 and 1155.

The JRMTs were directed by radio to be prepared for courier rendezvous and particulate sample pickup and transport. Teams were directed to a specific rendezvous point.

The courier, a Kansas Radiological Control (RADCON) team member, had been staged for courier duty at the EOF, and had been equipped with anti-contamination clothing, dosimetry, communications equipment, maps, a compass and a radio equipped vehicle. He had been trained in procedures for sample handling.

Samples were provided to the courier at the team rendezvous point between 1305 and 1330, and were delivered to the FSA at 1346.

This series of events was repeated by both second shift teams in the afternoon.

At both rendezvous' between the courier and the field teams, the same series of procedures was observed. The courier and field teams were directed to depart for the rendezvous point by the Field Team Coordinator at the EOF.

The courier checked his dosimetry and recorded his values and simulated donning his anti-contamination clothing. He performed a radio check from his vehicle prior to departing the EOF parking lot. He then proceeded to the rendezvous point and informed the EOF of his location. Upon arrival of the teams, field samples were inspected by the courier for proper labeling without physically touching the sample containers. Once he was assured that proper labels were in place for each sample, the courier prepared a clean, clear plastic bag for receipt of the sample container. Field team members placed the sample within the courier's clean bag without touching the clean bag. The courier then carefully removed his rubber surgical gloves, one at a time,

placing each within the clean bag with the sample and sealed the zip lock. The courier then donned fresh gloves and the procedure was repeated until all samples were transferred.

The courier then placed the samples carefully within the vehicle, as far from the driver as possible. The courier monitored the sample containers, with a monitoring instrument, to ensure that the samples were contained and secure. Then the courier notified the EOF that he was departing the rendezvous point, with the samples, to proceed to the FSA, where the samples would have been transferred to the KNG helicopter for airlift to the State RADLAB. Transport of the samples from the rendezvous point to the FSA took 16 minutes, arriving at 1346.

The courier knew his dose limits and was knowledgeable of the procedures he was to follow if he had exceeded his limits or needed permission to exceed same. The courier was also well aware of the purpose and appropriate procedures for KI instruction and use.

Objective Number 16, the ability to distribute and administer KI, once the decision was made, was fully demonstrated. In this remedial exercise, the Field Team Coordinator communicated the State's decision to issue KI to the JRMTs. Instructions for taking KI were issued to both the first and second shifts. KI was available in sufficient quantities for the team members, and supplies carried an expiration date of 1990. The majority of JRMT members in both shifts refused to take the KI. The EOF was notified and made a record of those individuals refusing KI.

Objective Number 27, the appropriate use of equipment and procedures for collection and transport of samples of vegetation, food crops, meat, poultry, water and annual feeds (indigenous to the area and stored), was not adequately demonstrated because of incorrect sample labeling.

Teams were able to find sampling locations promptly and demonstrated proper technique in sample collection. Surface samples were taken from a consistent geometric configuration, in that soil and vegetation samples were taken from a 1 square meter area.

Ground surface radiation measurements were taken and recorded at sample locations using an appropriate survey instrument. This demonstration corrected an ARCA from the December 6, 1989 exercise.

Procedures were demonstrated for collection of soil, vegetation and water samples only, by prearrangement with FEMA.

Teams were equipped with scoops and/or shovels, plastic collection bags with ties or fasteners, plastic containers, identi-

fication labels, writing materials, an area measuring device, grass clippers, and funnels. This corrected an ARCA from the December 6, 1989 exercise.

Written SOPs were available and were followed. Field samples taken by Team 2 were properly logged and labeled with time, date, location and other pertinent data, which corrected an ARCA for inadequate labeling of samples during the December 6, 1989 exercise. The second shift of Team 1, however, failed to include the area of the first vegetation sample and incorrectly labeled their 1 square meter vegetation and soil samples as being 1 cubic meter. Inadequate labeling of samples was identified as an ARCA during the December 6, 1989 exercise and remains an ARCA for Team 1 to be corrected at the next exercise.

Teams took soil samples comprised of 1/2 inch of soil from an area approximately 1 m^2 in compliance with one of the Plan SOPs. This corrected an ARCA from the December 6, 1989 exercise.

During sample taking, precautions were taken to ensure that equipment used in collecting samples was decontaminated prior to the collection of additional samples. Samples were transferred to a courier at a rendezvous point for transport to the State RADLAB. Proper packaging and handling was employed for sample transport.

Objective Number 34, the ability to maintain staffing on a continued 24-hour basis by an actual shift change, was fully demonstrated. All members of both first shift teams were relieved by their second shift counterparts at 1330. Incoming staff were briefed appropriately at the EOF by the State and utility, and again by the outgoing team. The second shift staff demonstrated appropriate knowledge and capabilities of their emergency response roles and functions. Twenty-four hour staffing capability was demonstrated through simulation of two 12-hour shifts.

In summary, this redemonstration of Objectives Number 4, 6, 7, 8, 9, 16, 27, and 34 by both field teams corrected the deficiency identified during the December 6, 1989 Wolf Creek exercise. In addition, eight (8) of ten (10) ARCAs identified during that exercise were also corrected. Corrected ARCAs have been identified again in the Summary of Deficiencies and ARCAs, Section 3 of this report. One ARCA regarding inadequate labeling of field samples by Team 1 remains to be corrected at the next exercise. [Teams did not attempt to correct the other ARCA which was cited because team members failed to know where decontamination would be provided. This ARCA remains to be corrected at the next exercise.] One new ARFI was identified during the remedial exercise.

Area Recommended for Improvement

1. It was recommended that field team kits be equipped with dosimeter chargers. Presently, teams must return to the EOF if recharging of dosimetry becomes necessary.

4.2 COFFEY COUNTY OPERATIONS

4.2.1 Coffey County Emergency Operations Center (CCEOC)

The remedial demonstration of the CCEOC required the adequate demonstration of Objective Number 13. This was necessary to correct the CCEOC's failure to draft, and release to the SEOC, adequate EBS messages for dissemination of public emergency information.

Objective Number 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely manner after the initial alert and notification has occurred, was fully demonstrated.

Appropriate staff disseminated instructions to the public after the first alert and notification sequence in the remedial exercise. The initial protective action instruction occurred at the notification of SAE and required evacuation of JRR. The CCEOC was notified of the SAE at 1029. At 1030, the CCEOC called the SEOC to transmit the draft EBS message for review and broadcast over EBS. The message was completed at 1035 and the proposed time for broadcast was specified to be at 1040. At 1038, the CCEOC ordered sirens to be sounded at 1039, so that they would proceed the EBS message broadcast. At 1039, the SEOC called the CCEOC to confirm that the message release would occur at 1040, and were informed that sirens had been sounded.

At 1101, the CCEOC was notified of the General Emergency and received the recommendation that an expanded evacuation be undertaken which included subzones JRR, CTR, S-1, S-2, SW-1, SW-2, W-1 and W-2. At 1102, the simulated County Commissioner was informed of the situation and maps were consulted. The decision to evacuate this area was concurred upon at 1104 and the CCEOC staff began constructing the EBS message.

At 1109, the CCEOC contacted the SEOC with the EBS message which directed the evacuation of the affected EPZ subzones. Milk producing animals were placed on stored feed in the same area. Upon completion of this message, it was agreed that 1120 would be specified as the time of broadcast. Rebroadcast would occur every 15 minutes according to the instructions on the message.

Staff had access to current and accurate information and utilized prescripted messages which had been rewritten to correct

problems identified in the deficiency from the December 1989 exercise.

Message content was scrutinized to ensure correction of previous inadequate message content. Protective action areas were described in terms of familiar landmarks and boundaries for the affected areas. Messages included instructions for transients without shelter. Evacuation routes and the locations of relocation centers were properly identified in messages for subzones of the EPZ which were defined by landmark descriptions. The locations of Reception and Care Centers to which evacuated school children had been sent were also included. The public was properly informed that hospitals and nursing home residents were being evacuated.

Formulation and dissemination of these messages were coordinated effectively and provided accurate and timely information to the public. A log was maintained of all releases.

This redemonstration of Objective Number 13 corrected the deficiency identified at the December 6, 1989 Wolf Creek exercise.

4.2.2 Allen County Reception and Care Center

Objective to be demonstrated for remedial action was: 34.

This deficiency resulted from a failure to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in GM PR-1, and is a deficiency.

The two Allen County Reception and Care Coordinators, one from each of two planned 12-hour shifts, were interviewed separately; one during the December 6, 1990 Wolf Creek exercise and one during this remedial exercise. Both were knowledgeable of Allen County Reception and Care procedures. Each Coordinator was familiar with the facility, layout and procedures for the activation and operation of the facility. Both Coordinators were aware of procedures to provide monitoring and decontamination, transportation to Congregate Care Centers, Congregate Care Center locations and the capability to provide congregate care.

These shift leaders adequately demonstrated their independent understanding of the operation of the center and how they would brief their replacements during a shift change. This deficiency is closed.

4.2.3 Franklin County Reception and Care Center

Objective to be demonstrated for remedial action was: 34.

This deficiency resulted from a failure to perform a shift change required for demonstration by 1989. This failure caused this facility to exceed the six year limit imposed by NUREG-0654, as redefined in GM PR-1, and is a deficiency.

The two Franklin County Reception and Care Coordinators, one from each of two planned 12-hour shifts, were interviewed separately; one during the December 6, 1990 Wolf Creek exercise and one during this remedial exercise. Both were knowledgeable of Franklin County Reception and Care procedures. Each Coordinator was familiar with the facility, layout and procedures for the activation and operation of the facility. Both Coordinators were aware of procedures to provide monitoring and decontamination, transportation to Congregate Care Centers, Congregate Care Center locations and the capability to provide congregate care.

These shift leaders adequately demonstrated their independent understanding of the operation of the center and how they would brief their replacements during a shift change. This deficiency is closed.