Federal Emergency Management Agency
Washington, D.C. 20472

FEB 14 1995

Mr. R. Lee Spessard, Director
Division of Technical Support
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Spessard:

Enclosed is a copy of the final exercise report for the June 8-9, 1993, full-participation plume exposure pathway exercise of the offsite radiological emergency response plans site-specific to the Monticello Nuclear Power Plant. The State of Minnesota and Sherburne and Wright Counties participated in this exercise. The final exercise report was prepared by the Federal Emergency Management Agency (FEMA) Region V staff. A copy of this report will be provided to the State of Minnesota by the FEMA Region V staff.

There were no Deficiencies identified during the June 8-9, 1993, exercise. There were, however, eight Areas Requiring Corrective Action (ARCAs) identified. Seven ARCAs were corrected and cleared during the August 30, 1994, Prairie Island biennial offsite exercise. FEMA Region V staff will monitor the status of the corrective action for the remaining ARCA.

Based on the results of the June 8-9, 1993, exercise, the offsite radiological emergency response plans and preparedness for the State of Minnesota and affected local jurisdictions, site-specific to the Monticello Nuclear Power Plant can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site. Therefore, the Title 44 CFR, Part 350, approval of the offsite radiological emergency response plans and preparedness for the State of Minnesota site-specific to the Monticello Nuclear Power Plant, granted on May 10, 1985, will remain in effect.

If you should have any questions, please contact Dr. Anne Marie T. SuPrise, Chief, State and Local Regulatory Evaluation and Assessment Branch, at (202) 646-4065.

Sincerely,

O. Megs Hepler, III

O. Megs Hepler, III
Director
Exercises Division
Preparedness, Training, and
Exercises Directorate

Enclosure

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PART I

INTRODUCTION

1. EXERCISE BACKGROUND

This was the sixth joint Radiological Emergency Preparedness (REP) exercise for the State of Illinois, Ogle County, and Commonwealth Edison Company (CECo) resulting from a simulated accident at the Byron Nuclear Power Station (NPS). Previous exercises were held on:

November 15, 1983
June 11, 1985
October 14, 1987
December 6-7, 1989
April 3, 1991✓
[Remedial exercise: July 30, 1991]

This report addresses the May 12, 1993 REP exercise.

2. STATE AND LOCAL GOVERNMENT PARTICIPATION

The 10-mile plume exposure emergency planning zone (EPZ) of the Byron NPS primarily impacts Ogle County and includes a very small section of Winnebago County. The State of Illinois participated partially and Ogle County participated fully in this exercise. Winnebago County participated by including a representative at the Ogle County EOC.

3. EVALUATORS

There were 11 Federal evaluators observing offsite exercise activities. Onsite activities were evaluated by a separate team from the Nuclear Regulatory Commission (NRC). A complete list of offsite evaluators, by name, organization and assignment, can be found at Appendix A.

4. EVALUATION CRITERIA

The offsite response plans evaluated during this exercise were developed using the NUREG-0654/FEMA REP-1, Revision 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*, dated November 1980.

During the evaluation, evaluators used standard evaluation forms based on FEMA REP-15, *REP Exercise Evaluation Methodology (EEM)*, dated September 1991.

5. EXERCISE OBJECTIVES

Objectives selected for this exercise were based on FEMA REP-14, *Radiological Emergency Preparedness Exercise Evaluation Methodology*, dated September 1991. Objectives selected by the State of Illinois and Ogle County were submitted for FEMA Region V review on February 10, 1993. FEMA Region V reviewed and approved the objectives on February 24, 1993. A complete list of the selected objectives can be found at Appendix B.

6. EXERCISE SCENARIO

The exercise scenario was developed by CECo in cooperation with the Illinois Emergency Management Agency (IEMA) and the Illinois Department of Nuclear Safety (IDNS). The scenario was developed to permit demonstration of the selected objectives. A copy of the offsite sequence of events can be found at Appendix C.

7. STATE AND LOCAL RESOURCES ACTIVATED DURING THE EXERCISE

The State of Illinois, partially participating, partially activated its State Emergency Operations Center (SEOC), the Radiological Emergency Assessment Center (REAC), the State Forward Command Post (FCP) and the Joint Public Information Center (JPIC). The REAC simulated the activities of the Radiological Assessment Field Teams (RAFT). The reception center, congregate care center, and emergency worker decontamination center were evaluated through interview and a walk-through.

Ogle County, fully participating, activated and staffed its County EOC, established a traffic and access control post (TACP), and provided for EV-2 school interviews.

8. PREVIOUS EXERCISE FINDINGS

There were two deficiencies noted for the State of Illinois and two deficiencies noted for Ogle County during the April 3, 1991, radiological emergency preparedness exercise. A remedial exercise was conducted on July 30, 1991.

One ARCA was identified during the April 3, 1991, exercise for the State of Illinois (old Objective 11, new Objective 9). This ARCA was cleared during the August 26, 1992, Braidwood exercise.

No ARCAs were identified for Ogle County during the April 3, 1991 exercise. Six ARCAs were identified for the municipalities during the April 3, 1991, exercise. All six will remain open until the 1995 exercise.

DEFINITIONS

Source: FEMA REP-14, dated September 1991

DEFICIENCY:

An observed or identified inadequacy of organizational performance in an exercise that could cause a finding that off-site emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant.

The correction of a Deficiency is required to be demonstrated through appropriate remedial action within 120 days of the original exercise.

AREA REQUIRING CORRECTIVE ACTION:

An observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety.

AREA RECOMMENDED FOR IMPROVEMENT (ARFI):

An aspect of emergency preparedness that could be improved and which is not required to be corrected.

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EXERCISE SUMMARY

1. GENERAL

The Byron Nuclear Power Station (NPS) Radiological Emergency Preparedness (REP) joint exercise was conducted May 12, 1993. The State of Illinois participated partially and Ogle County participated fully. Winnebago County participated by sending a representative at the Ogle County EOC.

This report provides a narrative overview of the observations and findings for the evaluation of the offsite response capabilities of the State of Illinois and Ogle County. Findings are based on FEMA's current interpretation of the objective criteria contained in FEMA REP-14.

Any weaknesses identified in this report will fall into one of three categories: Deficiency, Area Requiring Corrective Action (ARCA), or Area Recommended for Improvement (ARFI).

All identified weaknesses have been reviewed by the Chairman of the Regional Assistance Committee (RAC) for FEMA Region V, and with representatives of FEMA Headquarters.

2. EXERCISE OBJECTIVE STATUS

Source: FEMA REP-14, dated September 1991

Objective		State of Illinois	Ogle County
Group A			
1	Mobilize/Activate	D	D
2	Facilities/Work Environment	D	D
3	Direction and Control	D	D
4	Communications	D	D
5	Emergency Worker Exposure Control	D	D
6	Field Monitoring - Ambient Radiation	N/S	N/A
7	Plume Dose Projection	D	N/A
8	Field Monitoring - Radioiodine	N/S	N/A
9	Plume Protective Action Decision Making	D	N/A

Objective		State of Illinois	Ogle County
10	Alert and Notification	D	D
11	Public Instructions/ Emergency Information	D	D
12	Media	D	D
13	Rumor Control	D	D
Group B			
14	Implement Protective Actions - Use of KI	N/S	D
15	Implement Protective Actions - Special Populations	N/A	D
16	Implement Protective Actions - Schools	N/A	D
17	Traffic/Access Control	D	D
18	Reception Centers	D	N/A
19	Congregate Care	D	N/A
20	Medical Services - Transportation	N/S	N/A
21	Medical Services - Facilities	N/S	N/A
22	Emergency Workers - Decontamination	D	N/A
23	Supplementary Assistance	N/S	N/A
Group C			
24	Post-Emergency Sampling	N/S	N/A
25	Laboratory Operations	N/S	N/A
26	Ingestion Pathway- Dose Projection/ Decision Making	N/S	N/A
27	Ingestion Pathway - PAR Implementation	N/S	N/A
28	Relocation/Re-Entry/ Return - Decision Making	N/S	N/A
29	Relocation/Re-Entry/ Return - Implementation	N/S	D
30	24-Hour Staffing	N/S	D
31	Offsite Support for Onsite Evacuation	N/A	D
32	Unannounced Exercise/Drill	N/S	N/S
33	Off-Hours Exercise/Drill	N/S	N/S

Key:

D	Demonstrated
N	Not Demonstrated
N/S	Not Selected
N/A	Not Applicable

3. POST-EXERCISE MEETINGS

The exercise participants' critique was conducted by FEMA at the Ogle County Sheriff's Training Room located in Oregon, Illinois, at 9:00 am on Friday, May 14, 1993. Representatives from the State, the two Counties and CECo were present.

A public and media briefing held was held immediately following the participants' critique. This briefing was conducted jointly by FEMA Region V and the Nuclear Regulatory Commission.

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PART II

NARRATIVES

STATE OF ILLINOIS

OBJECTIVE 1: MOBILIZATION OF EMERGENCY PERSONNEL

Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

The State of Illinois met this objective.

State Emergency Operations Center (SEOC)

During this exercise the SEOC was only partially activated. The communications officer was notified promptly of each emergency classification level (ECL) by dedicated phone [Nuclear Accident Reporting System (NARS)] from the Byron NPS. Appropriate personnel were alerted at the *Unusual Event* ECL and mobilized at the *Alert* ECL by the State communications operator. This was accomplished by telephone using a current personnel roster. The activation was limited to the SEOC Coordinator, communications personnel, message runner/status board manager, Joint Public Information Center (JPIC) Liaison, and Illinois Department of Nuclear Safety (IDNS) representatives. This partial activation was accomplished in less than 30 minutes.

State Forward Command Post (SFCP)

In accordance with pre-exercise agreements, agencies manning the SFCP were previously notified as to the time to arrive at their stations. Staff positions in the SFCP would be notified by their State agencies and would report accordingly. Activation began upon arrival of Illinois Emergency Management Agency (IEMA) staff at 0905 hours, and was completed with the exception of Department of Conservation Police at 0925 hours.

Radiological Emergency Assessment Center (REAC)

The REAC Commander and selected staff, in accordance with the extent of play agreement, prepositioned themselves at the REAC between 0800-0815 hours. Additional staff, again in accordance with the extent of play agreement, were called out from their work stations and some also prepositioned themselves at the *Unusual Event* ECL. The REAC Commander verbally described the actual process for mobilization of staff and an up-to-date roster

of all shifts was available. This roster is checked and/or updated twice a day. The two SEOC liaisons were paged at the *Alert* ECL, reported to the REAC for a briefing, and then proceeded to the SEOC. The staff member assigned to simulate Radiological Assessment Field Teams (RAFT) responsibilities verbally described the process for mobilizing the RAFT staff. The REAC began activation at 0800 hours and it was completed at 0836 hours.

Emergency Operations Facility (EOF)

Full mobilization of the State of Illinois staff at the EOF in Dixon, occurred when one member of IEMA and two members of IDNS simultaneously arrived at 1000 hours. They had simulated traveling from Springfield after receiving a *Site Area Emergency (SAE)* ECL from the REAC in Springfield. They quickly set up telephones and notified the REAC of their arrival.

Joint Public Information Center (JPIC)

The JPIC was activated in the Commonwealth Edison Building on First Street, Dixon, following the declaration of the *Alert* ECL, and was operational at 0930 hours. The JPIC staff was initially notified of the emergency by the IEMA dispatcher at the SEOC using telephones and pagers.

Monitoring/Decontamination of Evacuees (M/DE) -
Emergency Worker Decontamination Center (EWDC)

The demonstration of the mobilization of emergency personnel at the emergency worker monitoring and decontamination center at the Thomas Jefferson High School in Rockford consisted of an interview with detailed discussion followed by a walk-through of the facility. No actual workers, monitoring equipment or materials were employed nor set-up demonstrated. The principal interviewee was a member of the IDNS.

The discussion revealed that the REAC would notify all emergency workers at the *SAE* ECL by pager or telephone. The State emergency contingent would mobilize in Springfield, and then proceed to their assignments which include manning the emergency worker monitoring and decontamination center. They would bring all the required, instruments, equipment and supplies with them to the center.

Congregate Care Center (CCC)

This objective was demonstrated out-of-sequence in accordance with the pre-exercise agreement through an interview with the Center Manager. The manager was called by phone at 1600 hours, on May 10, 1993. She arrived at the congregate care center at 1615 hours. No other calls for personnel were initiated. The Center Manager, who is the Director of Emergency Services of the Rockford Chapter of the Red Cross, had a current list with telephone numbers of personnel to staff the Congregate Care Center.

OBJECTIVE 2: FACILITIES - EQUIPMENT, DISPLAYS, AND WORK ENVIRONMENT

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

The State of Illinois met this objective.

SEOC

The SEOC had sufficient space, furnishings, lighting, restrooms, ventilation, and backup power to support emergency operations. The following equipment was available for use by the EOC staff: telephones with conferencing capability, typewriters, computers, word processors, copiers, and facsimile machines.

Appropriate maps and displays were also available in the EOC. This included maps depicting the 10-mile plume pathway EPZ sectors, the 50-mile ingestion pathway EPZ, evacuation routes, the location of reception/congregate care centers, designated radiological monitoring points, the population by evacuation sub-area, and traffic and access control points. The status board and electronic ECL sign were updated promptly as changes occurred throughout the exercise.

SFCP

The SFCP was located in the Lee County EOC, a facility adequate for this operation. Adequate space, furnishings, lighting, restrooms, and ventilation were available. Essential equipment to support emergency procedures was in place. All appropriate maps and status boards were in place. The status board was promptly updated as necessary. A copy of the IPRA was available and used.

REAC

The REAC facility had adequate space, furnishings, lighting, restrooms and ventilation. Backup power consisted of two diesel generators. Available equipment was adequate and included numerous telephones, computers, copiers and a facsimile machine.

The staff also had access to typewriters and word processors in adjacent rooms. Plume and ingestion pathway EPZ maps were displayed; these maps also depicted radiological monitoring and environmental sampling points.

Evacuation routes, congregate care centers, reception centers, sector population, special facilities, and traffic and access control point information were not displayed on maps but were available in a copy of the Illinois Plan for Radiological Accidents (IRPA) located in the REAC. Status boards were updated promptly and access to the facility was controlled.

EOF

The State of Illinois work station area in the EOF was located in the same large room as the Utility's EOF and Dose Assessment Teams. Adequate space, furnishings, lighting, restrooms, ventilation, backup power and communication systems were available to support extended emergency operations. Also available were all the maps, displays and information needed to support emergency activities. A status board was used with all messages and information promptly posted. A copy of the IPRA was available along with copies of the IDNS and IEMA EOF procedures.

JPIC

The JPIC operated with sufficient space, lighting, ventilation and restrooms. Extensive administrative equipment, including telephones, a computer, facsimile machine and copy machines were available. All required maps and charts, e.g., evacuation routes, reception and congregate care centers, plume pathway and traffic control points, were displayed within the JPIC with up to date information and status. Access to the facility was well controlled and copies of the IPRA were available for the staff members.

M/DE - EWDC

In accordance with the extent-of-play agreement, the State of Illinois conducted a walk-through of the facility and provided a detailed discussion of practices and procedures for the emergency worker monitoring and decontamination center at the Thomas

Jefferson High School in Rockford, Illinois. Actual workers were not mobilized nor materials or equipment set-up and demonstrated.

The High School is a very large, modern facility. Adequate space, lighting, restrooms, furnishings, showers for both males and females, telephones, backup power and other amenities are available to support emergency operations. A good traffic flow pattern inside, as well as an emergency vehicle monitoring and decontamination control system outside, are in place.

This monitoring and decontamination center would be staffed by State emergency personnel who mobilize in Springfield. These workers would bring all radiological instruments, equipment, supplies, and plans and procedures with them.

CCC

The congregate care center was co-located with the reception-decontamination center at the Thomas Jefferson High School. The facility is spacious with plenty of room to accommodate both activities and has a shelter capacity of 819. The facility also has appropriate accommodations such as: lighting; restrooms; backup power; and the necessary equipment to support emergency operations. Access to the shelter area was controlled.

OBJECTIVE 3: DIRECTION AND CONTROL

Demonstrate the capability to direct and control emergency operations.

The State of Illinois met this objective.

SEOC

The Chief of Operations, assisted by the Communications Officer, was in charge of the emergency response at the SEOC. They issued instructions to the staff and provided instructions on adherence to the IPRA. Copies of the IPRA were available and utilized throughout the exercise. Staff meetings and briefings were held to keep all staff informed of current events. Messages were logged, duplicated and distributed to the necessary staff.

Decision-making was handled in a manner that utilized staff members in the process. Coordination with other jurisdictions concerning traffic and access control points occurred, and protective action decisions were authorized and passed to the necessary jurisdictions for required actions.

SFCP

The capability to direct and control emergency operations at the SFCP was demonstrated by the IEMA Regional Coordinator in the role of Operations Officer. Frequent briefings were conducted to discuss what support Ogle County would require, e.g., barricades, shelters, etc. A copy of the IPRA was available as were procedures at each work station. The Operations Officer directed coordination with th State and Ogle County EOCs, and provided leadership in decis n making.

REAC

The REAC Commander was in charge of the REAC facility and staff. The Commander directed which staff should be notified for mobilization to the REAC and ensured the facility had adequate staffing. He effectively delegated responsibilities to staff when warranted. Staff briefings were conducted upon notification of each ECL and whenever there was a change in pertinent information. Copies of the NARS Forms were provided to each staff member upon receipt in the REAC and one set of the forms was compiled in a central location.

The Commander consulted with his staff on dose projection and protective action recommendation (PAR) decision-making issues. The Commander and staff were frequently involved in "what if" discussions to be prepared for future situations. The Commander coordinated with the Utility's TSC, the JPIC, and the State and Ogle County EOCs at various times during the exercise.

EOF

One IEMA and two IDNS representatives were responsible for activities at the EOF for the State of Illinois. All three representatives knew their functions and performed them as directed.

JPIC

The IEMA Chief, Division of Field Services, was in charge of the emergency response in the JPIC and controlled the information flow, keeping all staff personnel updated on emergency status and events, maintaining good coordination and being a key spokesman during briefings to the media.

M/DE - EWDC

The registration, monitoring, and decontamination of evacuees and emergency workers was demonstrated by a walk-through with a representative of the IDNS. From the discussion, staff are experienced and trained, and could provide effective direction and control for this operation at the Thomas Jefferson High School. They have written procedures on the entire operation. Sequential drawings showing the flow of vehicles and people through the registration, monitoring, and decontamination activities were shown.

OBJECTIVE 4: COMMUNICATIONS

Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

The State of Illinois met this objective.

SEOC

Both primary (commercial telephone) and back-up systems (NARS, State-wide low band VHF radio, facsimile) were used throughout the exercise without any undue delay or breakdowns. The State communicated with the SFCP, the Utility, Ogle County EOC and Sheriff's Office, JPIC, EOF, IDNS, and other necessary jurisdictions.

SFCP

The primary communication system was commercial telephones. There were 15 separate lines in the SFCP. There were no dedicated lines but all phones had conferencing capabilities. Radio was the back-up communication system. There was two-way radio capability with the State Police, Department of Conservation Police, city and County Governments. They also had facsimile capability. All systems worked well; there were no breakdowns or delays. The back-up system also functioned with no delays.

REAC

The primary means of communication was the telephone with radio as a backup. The facility has a dedicated NARS phone line for receiving emergency declarations from the Utility. The REAC Commander and the Reactor Analyst were frequently involved in conference calls with the TSC and SEOC. A fax machine was available and was used. The radio system operator monitored

communications from all field teams being dispatched. Cellular phones were available to be assigned to field staff as needed.

EOF

The State of Illinois staff used commercial telephones as their primary communication system. They had up-to-date telephone listings and communicated with the REAC, State EOC and JPIC. There were no undue delays or problems encountered with the telephone system. A radio in the State car could be used as a back-up system.

JPIC

Commercial telephones were the primary means of communication, with cellular phones and car radio systems as backup. A facsimile machine was also available. The JPIC maintained continuous communication with the SEOC, SFCP, EOF, Ogle County, and IDNS without malfunctions.

Traffic and Access Control

The State Police officer that manned the access control point was equipped with a high band and low band two-way radio. Radio contact with the State police base and communications with the Illinois Department of Transportation (IDOT) was demonstrated. There were no delays or breakdowns.

M/DE - EWDC

The communications aspect of the registration, monitoring and decontamination of evacuees and emergency workers at the Thomas Jefferson High School was demonstrated by a discussion and walk-through with a representative from IDNS. Primary communications consist of low- and high-frequency two-way portable radios. All communications equipment needed to set-up the center are part of vehicles dispatched from Springfield.

CCC

In accordance with the extent-of-play agreement the communications available at the CCC were demonstrated through an interview with the Center Manager. The Center was located at the Thomas Jefferson High School which has adequate telephone communication capability. The Red Cross will also have cellular telephones and a facsimile machine. Back-up communication is fire, police, and amateur radios. The Center should be able to communicate with other organizations as necessary.

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.

The State of Illinois met this objective.

Traffic and Access Control

The capability to continuously monitor and control radiation exposure to emergency workers was demonstrated by the State trooper assigned to the access control point. He was provided with one thermo-luminescent dosimeter (TLD), a 0-200 R direct-reading dosimeter (DRD), a Xetex 415 (0-200 mR) digital exposure dosimeter, a vial of KI tablets, instructions for the use of dosimetry and KI, and a personal log for recording dosimeter readings every 30 minutes. The dosimeters were issued at the State Police District Headquarters by name, dosimeter serial number, and initial reading. Chargers for dosimeters were available. The State trooper was knowledgeable of the 3 R administrative exposure limit, and when it was exceeded, to call into the supervisor. All dosimetry would be turned in at the District Headquarters at the end of the mission.

M/DE - EWDC

The monitoring/decontamination of evacuees and emergency worker decontamination activities were conducted during an out-of-sequence walk-through at Thomas Jefferson High School. The principal interviewee was an IDNS representative who indicated that all dosimetry would be in the containers provided by IDNS. These containers would have a TLD and two DRDs (0-20 R and 0-200 R) with the necessary chargers. Instructions for use of the DRDs and a record for daily exposures was a part of the kit. The IDNS representative stated the administrative limit for emergency workers was 3 R with a maximum of 25 R for life-saving operations. All staff from IDNS were trained and knowledgeable of these operations, the use of dosimetry, record keeping requirements, and exposure limits. If the exposure limit was to exceed 3 R the emergency workers knew to contact their dosimetry control officer.

OBJECTIVE 7: **PLUME DOSE PROJECTION**

Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering.

The State of Illinois met this objective.

The REAC Commander, and reactor and environmental analysts worked well together in evaluating the large amount of information available in the REAC. Plume dose projections were completed for whole body (plume) and ingestion pathways. They also monitored meteorological data. Source-term dose projection data, meteorological data, and field team data were provided to the REAC by the Utility. Dose projection calculations were performed on computer using models. Dose projections were consistent with those provided by Utility. Back-up dose projection computers also existed but were not demonstrated because the scenario did not drive it.

Release dose rates were very low and did not drive PARs. The PARs were based on a degrading plant condition and an estimated release duration of six hours.

There were also very low projected iodine levels that did not drive the recommendation for ingestion of KI. Ingestion of KI was recommended based on the fact that the release was unfiltered and unmonitored. The field monitoring teams were simulated as having been mobilized and dispatched.

At the EOF two IDNS staff members functioned as liaisons between the REAC, the Utility and other State agencies. They were to implement any directives or instructions ordered from the REAC in Springfield. Due to the scope of the exercise they were not involved in the dose assessment or PAR decision-making activities because all recommendations were made by the RAC based on plant conditions. No assistance was requested from the EOF.

OBJECTIVE 9: **PLUME PROTECTIVE ACTION DECISION MAKING**

Demonstrate the capability to make timely and appropriate protective action decisions (PAD).

The State of Illinois met this objective.

SEOC

All protective action recommendations (PAR) were forwarded by the IDNS representatives to the Chief of Operations located in the

State EOC, based on information received from the REAC and the Utility. Two PARs were made and promulgated during this exercise. The first PAR addressed the sheltering of dairy animals and that the public should stay tuned to the station for further information, and the second PAR included evacuation and sheltering people, and ingestion of KI for emergency workers and immobile populations.

The initial decision regarding sheltering animals was primarily based on facility recommendations. The subsequent PAR regarding evacuation and sheltering people, ingestion of KI for emergency workers and immobile populations, was made after more extensive discussion and consideration of all pertinent factors.

Once the PARs were received by the Chief of Operations they were forwarded to the Governor's office for approval.

REAC

The REAC Commander was responsible for the formulation of protective actions. The REAC Commander conferred with the reactor and environmental analysts in formulating recommendations. The REAC Commander had access to dose projection data, meteorological data, plant conditions, plant status, and plant, site boundary, and plume EPZ radiological data for use in the formulation of protective actions.

The low-level radiation release was not sufficient enough to drive protective actions. Protective actions were based on degrading plant conditions and a Utility estimated release duration of six hours. The protective action recommended (second PAR) to the SEOC at 1127 hours called for evacuation of the general population radially within 0-2 miles, sheltering within 2-10 miles downwind. and issuance of KI to emergency workers. The Ogle County liaison questioned why immobile and institutionalized individuals were not included in the recommendation. The REAC Commander responded saying he did not know if they should have been and did not refer to Standard Procedure 4-SOP-4, Attachment 2 [IDNS Recommendation to Administer Potassium Iodide (KI) (a form)]. The REAC Commander did revise the recommendation to include immobile and institutionalized individuals, however, that was due to staff discussions not because he followed the procedure. The REAC Commander did not send Attachment 2 of 4-SOP-4 to State EOC to confirm the KI recommendation. With this exception, plans and procedures were followed.

ISSUE: Failure to Follow Procedures **ARCA**

NUREG Reference: J.9.

The REAC Commander recommended KI for emergency workers but did not include immobile and institutionalized individuals. Additionally, a form that would have outlined the KI recommendation (Attachment 2 to Procedure 4-SOP-4) should have been transmitted to the SEOC but was not.

Recommendation: That REAC personnel re-familiarize themselves with the procedures contained in the IDNS portion of the IPRA.

OBJECTIVE 10: ALERT AND NOTIFICATION

Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.

The State of Illinois met this objective.

The staff in the State EOC initially alerted and notified the public in Ogle County when the *SAE* was declared by the Byron NPS. A general information message was provided to the local emergency broadcast station, WROK (1440 KHz) and WZOK (97.5 MHz).

This general information message informed the public of the *SAE* declared by the Byron Nuclear Power Station. The message also included information to farmers to place milk producing animals on stored feed and protected water 0-2 miles, and informed the public to stay tuned to their local emergency broadcast station for further information.

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

The State of Illinois met this objective.

The alert and notification system was activated a second time when a *General Emergency (GE)* was declared by the Station. It was reported that a release was occurring in Sector L. The Utility recommended the general public should shelter radially within 0-2 miles of the Station, and in downwind Sectors K, L, and M from 2-10 miles.

The IDNS considered the utility recommendation, but ultimately recommended that an evacuation be conducted radially within 0-2 miles, and the public should shelter within 2-10 miles in downwind Sectors K, L, and M. The IDNS further recommended that KI be given to emergency workers and, eventually, to the immobile populations in the EPZ. It was further recommended that milk producing animals be sheltered and placed on stored feed and protected water out to 10 miles.

OBJECTIVE 12: EMERGENCY INFORMATION - MEDIA

Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.

The State of Illinois met this objective.

SEOC

The capability to coordinate the development and dissemination of clear, accurate, and timely information, including protective action decisions, to the news media from the State EOC was demonstrated. Due to the State's partial participation a designated media briefing area was identified, but not activated, next to the operations room.

A JPIC liaison person was present to support appropriate functions, such as forwarding of PARs, rumors, or other inaccurate information being received by the SEOC. The JPIC liaison had access to all pertinent media information and was familiar with the necessary subjects to be addressed at media briefings.

JPIC

The JPIC staff demonstrated the ability to coordinate the development and dissemination of clear, accurate, and timely information.

The first of three media briefings was held at 1030 hours, by the State Public Information Officer (PIO), the IEMA Spokesperson (who was in charge of JPIC operations), and Utility representatives. The media was given media kits, copies of news releases and local EBS messages; and received briefings about events at the Station, the current situation, and what actions the State was recommending to protect the population in the affected areas.

The IEMA staff had the responsibility for overall operation of the JPIC, but the briefings were conducted in a designated briefing room separate from the JPIC operations room. Prior to each briefing, staff members and spokespersons met to exchange accuracy of information and current status. During the briefings, current emergency conditions were described regarding potential or actual releases of radioactivity and the current ECL. The media was kept informed about evacuation routes, location of reception and congregate care centers, information for special populations and transportation dependent individuals, rumor control functions, and provisions for relocation, re-entry and return.

Spokespersons at the briefings utilized maps and displays to illustrate specific points, and provided clear and accurate information without resorting to technical jargon. Information and instructions regarding protective action decisions were consistent and current.

Not all news releases were sent to, or received at, those locations that needed them, e.g., SEOC and REAC. Assurance should be made that information is received at all designated locations.

ISSUE: Distribution of News Releases **ARCA**

NUREG Reference: E.7.

Copies of all news releases were neither sent to nor received at locations that needed them, e.g., SEOC and REAC. It is preferable that the SEOC and REAC receive copies of each news release so they can be aware of the information being released to the media.

Recommendation: That a checklist be developed for use in the JPIC to ensure that all news releases are distributed and received at key response organizations.

OBJECTIVE 13: EMERGENCY INFORMATION - RUMOR CONTROL

Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

State of Illinois met this objective.

SEOC

The State of Illinois rumor control program is designed to support affected EPZ Counties and municipalities for locally-

generated rumors. In accordance with the extent-of-play agreement, IEMA (simulated) requested that eight "1-800" telephone lines be installed at the SEOC to handle rumor control questions from the public. These lines would take approximately four hours to be installed and become operational. The telephone numbers would be furnished to the JPIC to be broadcast to the public in the affected area by press briefings and news releases. As calls are received, they would be written down and the response would be incorporated into the next press briefing at the JPIC. Rumor control staff would have access to all current news releases.

JPIC

The rumor control function was established within the JPIC and became operational at *Alert*. The IEMA staff had the responsibility and were adequately trained to provide this function which was conducted in a coordinated and timely manner.

The regular JPIC telephone numbers were used for rumor control until specific "1-800" numbers could be installed, made operational, and publicized in press briefings; the target time was 1600 hours. The media was advised about rumors received. Information was available on the status of the emergency. Calls were documented and analyzed in order to refer the callers to appropriate personnel, if available information was not sufficient to permit an immediate response.

The JPIC staff monitored radio broadcasts to determine what information was provided by the media to the public and to determine if any of this information was contributing to the spread of false or misleading information.

OBJECTIVE 17: TRAFFIC AND ACCESS CONTROL

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

The State of Illinois met this objective

According to the extent-of-play agreement, the State established one traffic and access control post and the rest were simulated. At 1225 hours, the SEOC received information from the SFCP that the traffic and access control points had been established (simulated). The Illinois Department of Conservation (IDOC) reported that State parks in the affected area had been closed and access control had been established on the river.

The organizational capability and resources necessary to control access to evacuated and sheltered areas was demonstrated by State Police and Illinois Department of Transportation (IDOT) personnel assigned to the SFCP. A map displayed in the SFCP indicated the locations of all traffic and access control points to be manned by State and/or County personnel.

A State trooper was deployed from the SFCP by pre-agreement at 1215 hours, arriving at the designated location at 1229 hours. He was knowledgeable of the functions necessary at this location including: the need for traffic barriers and the organization that would provide them, current protective actions, the location of reception and congregate care centers; etc. There was no change in protective actions nor were there traffic impediments during the field demonstration.

The IDOT has the responsibility to provide traffic barricades, cones, and equipment to remove impediments when necessary. The State trooper demonstrated the high- and low-band radio in his vehicle by contacting the base station and the IDOT.

OBJECTIVE 18: RECEPTION CENTER - MONITORING, DECONTAMINATION, AND REGISTRATION

Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

The State of Illinois met this objective.

The monitoring/decontamination of evacuees was demonstrated during an interview and walk-through with a representative of the IDNS at the Thomas Jefferson High School. During the interview he discussed the overall operation of the facility including:

- The movement of cars/people entering the school yard,
- The monitoring of vehicles and evacuees for contamination,
- The movement of non-contaminated individuals directly to the Red Cross for registration,
- The decontamination of contaminated individuals using showers, with subsequent registration by the Red Cross.

The monitoring of vehicles was accomplished using hand-held radiation monitors with pancake probes and earphones. A trigger point of 300 counts per minute (cpm) above background was used to identify the need for decontamination. Following monitoring, vehicles were moved to separate parking lots depending on whether it was clean or contaminated. If contaminated the vehicle would eventually be decontaminated by a local fire department.

Evacuees were monitored with two Eberline portal monitors. These portal monitors are used to identify general contamination on a person. If a person is identified as contaminated, they are singled out for a more lengthy monitoring process using hand-held monitoring devices; this process localizes the source of the contamination and the person is then decontaminated as necessary. Again, a trigger point of 300 cpm above background is used as an identifier both before and after decontamination.

There are two showers, both handicapped accessible, one for males, one for females. If an individual cannot be decontaminated after two attempts, he/she are referred to a medical facility for further treatment. Following successful decontamination, an individual is given clothing and sent to the Red Cross for registration.

All necessary equipment, except for that provided by a local fire department for the decontamination of vehicles, is provided by the IDNS; they have trucks that are outfitted with portal monitors, hand-held monitors, ropes, cones, paperwork, etc. These trucks stage in Springfield at the IDNS headquarters and are dispatched to designated reception centers when needed.

OBJECTIVE 19: CONGREGATE CARE

Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.

The State of Illinois met this objective.

This objective was demonstrated out-of-sequence in accordance with the pre-exercise agreement, by discussion, with the Congregate Care Manager. The manager was called by phone at 1600 hours. She arrived at the congregate care center at 1615 hours. No other call for personnel was initiated. The congregate care manager who is the Director of Emergency Services of the Rockford Red Cross Chapter did have current listings and phone numbers of personnel to staff the congregate care center. The manager indicated that mobilization of personnel would present no problem.

Other agencies that would be represented at the congregate care shelter are: mental health for crisis counseling, Rockford Police for security and traffic control, and the school district for custodial care and feeding.

Primary communications would be by telephone. Other backup communications would be available through, amateur radio, fire department, police department cellular telephones, and a facsimile machine. The manager would be notified to activate the

shelter by the EOC. Capacity of this facility is 819 evacuees with the capability to expand if necessary. Other back-up facilities are specifically designated in the plan. All designated facilities are capable of handling disabled evacuees.

Registration procedures will indicate when capacity is being reached and there is a need to open additional shelters. All essential services such as: food, sanitation, family assistance, child care, medical care, and first aid are available. Essential staff such as: managerial personnel, nurses, registration clerks, cook, kitchen help, servers, building maintenance, security, sanitation, crisis counseling, social workers, child care, and others necessary to assist evacuees are available for this facility.

All essential services and resources such as: comfort kits, registration supplies, water tankers, toilets, etc., were listed in the Red Cross planning guidelines handbook.

Evacuees entering the congregate care shelter must have a card to show that they have been through the monitoring and decontamination process. Capability of registering and tracking evacuees would be accomplished using standard Red Cross procedures. The designated congregate care manager was knowledgeable, well informed and very cooperative throughout the interview process.

OBJECTIVE 22: EMERGENCY WORKERS, EQUIPMENT, AND VEHICLES - MONITORING AND DECONTAMINATION

Demonstrate the adequacy of procedures for the monitoring and decontamination of emergency workers, equipment, and vehicles.

The State of Illinois met this objective.

The State participated in an interview with detailed discussion and a walk-through of the emergency worker monitoring and decontamination center at the Thomas Jefferson High School in Rockford. No actual emergency workers were employed nor were material, equipment, instruments, or supplies used. An IDNS employee was the principal interviewee.

State emergency personnel would be mobilized in Springfield and transport all the calibrated instruments, equipment, materials, and supplies to operate the center. The equipment would include at least two portal monitors for initial personnel contamination checks and additional survey instruments for subsequent or additional hand monitoring. All the additional contamination

control supplies and materials would be available if needed once the flow patterns were well established.

All participating workers would be provided with refresher instructions to follow good monitoring and contamination control practices. Thomas Jefferson High School provides adequate shower facilities for both sexes. In addition, equipment was available outside for vehicular decontamination. An action level of 0.1 mR/hr on the portal monitors and 300 cpm on hand-held instruments (both above background) was established and would be followed and carefully observed.

Through these discussions and facility walk-through, it was indicated that the State could successfully carry out emergency worker, equipment, and vehicle monitoring and decontamination operations in the event of an emergency at the Byron Nuclear Power Station.

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OGLE COUNTY

OBJECTIVE 1: MOBILIZATION OF EMERGENCY PERSONNEL

Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

Ogle County met this objective.

Notification of Unusual Event emergency classification level (ECL) was received by the Sheriff's dispatcher at 0847 hours through the Nuclear Accident Reporting System (NARS) telephone from the State EOC. The dispatcher immediately called back on a different telephone to verify authenticity of the message. Within three minutes after receiving the message, the required key staff were notified.

Upon receipt of the NARS notification of the *Alert* ECL which was also verified, the County Emergency Services and Disaster Agency (ESDA) Coordinator instructed the dispatcher to activate the EOC staff. This was accomplished through the use of: commercial telephone, automatic dialing system, pagers, and radios. The dispatcher used a current personnel listing to log the time each person or location was notified. In the case of pagers, the time paged and the time of call-back was logged. The personnel rosters included alternates for each staff position.

The EOC is maintained in a constant mode of readiness. Staff members needed only to sit down at their positions and begin work.

OBJECTIVE 2: FACILITIES - EQUIPMENT, DISPLAYS, AND WORK ENVIRONMENT

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

Ogle County met this objective.

Entrance to the EOC was controlled by the County Sheriff's personnel. All equipment, displays, and materials were provided. Each participant had a copy of appropriate SOPs. Several additional copies of the Plan were available. The facility also had a copier and a facsimile. Current information was available on wall displays, including maps depicting the 10-mile EPZ,

agricultural information, evacuation routes, reception and congregate care centers, population by evacuation areas, and special population facilities. Additional displays showed current weather data and the current ECL.

Status board information was updated within several minutes of receipt. The EOC message handling system operated without undue delays. Once a message was received in the EOC, each message was distributed to EOC participants following entry on the status board.

The facility was adequate to support the work stations and equipment. There were adequate space, furnishings, lighting, restrooms, and ventilation. Back-up power was provided to the EOC by Hospital diesel generators. A new Cummins diesel generator was installed by the Hospital in November, 1992.

OBJECTIVE 3: DIRECTION AND CONTROL

Demonstrate the capability to direct and control emergency operations.

Ogle County met this objective.

The Assistant ESDA Coordinator and, after a shift change the ESDA Coordinator, provided direction and control in the EOC. Both coordinators issued instructions to the staff, coordinated briefings, provided copies of the Plan and a well-coordinated message system, and instructed staff to follow the County Plan. Both coordinators demonstrated good leadership through resolution of conflicts, decision-making, and authorization of protective actions.

A representative of the County Executive Board was present throughout the exercise, demonstrating support for the actions being carried out. It was apparent that the cooperative relationship between the local and State agencies provided an operation that was responsive and capable of dealing with all of the activities presented to them.

OBJECTIVE 4: COMMUNICATIONS

Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

Ogle County met this objective.

The Ogle County EOC was equipped to maintain communications connectivity with all necessary field-based activities. The Ogle County EOC staff communicated with the State EOC, SFCP, and REAC; local radio station; municipalities; and other jurisdictions.

Available equipment included: commercial telephones, with 22 telephones activated as the primary communication system; a dedicated telephone line as a back-up system; and several cellular telephones for the EOC Coordinators, Police, and Sheriff's Departments. The EOC was also equipped with a facsimile machine. Several pagers were available and used by EOC participants. There were no delays or breakdowns in the EOC communications equipment or procedures.

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.

Ogle County met this objective.

There was a Dosimetry Control Officer (DCO) at the Ogle County EOC with adequate dosimetry for all staff at this location. Equipment included: a thermo-luminescent dosimeter (TLD); two direct-reading dosimeters (DRD), one ranging 0-20 R and one reading 0-200 R; a dosimetry control log; and KI tablets. A representative from IDNS in the County EOC stressed the administrative limit of 3 R exposure for emergency workers and that they should contact their DCO if they reach or exceed their limit. The Ogle County EOC is outside the 10-mile EPZ and no dosimetry was actually distributed.

OBJECTIVE 10: ALERT AND NOTIFICATION

Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.

Ogle County met this objective.

Ogle County demonstrated the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within the required 15-minute time limit.

At 1028 hours, Ogle County received from the State EOC, a *Site Area Emergency* ECL notification and a PAR to place all animals on stored feed and protected water out to two miles radially. In addition, the message provided general information to the public. The sirens and local emergency broadcast station message were simultaneously activated at 1030 hours.

The notification methods were fixed siren systems, local emergency broadcast station, and telecommunication devices for the deaf (TDD).

An out-of-sequence local emergency broadcast station interview was conducted at 1600 hours, on Wednesday, May 12, 1993. The local station engineer provided assurance that personnel at the station were aware of their duties and were trained in the use of their SOPs. The station has a current agreement with Ogle County to support them in broadcasting emergency information messages. The station engineer knew the SOPs and explained that the station would receive calls from the State soon after receiving calls from the County. He stated that the station has 24-hour staffing and all staff were aware of the verification procedure and knew the procedure for taping incoming messages.

The engineer stated that after a message was received and verified, it would be played over the air and repeated at a minimum of 30-minute intervals until a new message is received or the ESDA Coordinator contacted them and told them to discontinue message play over the air.

The radio station is equipped with a 90 Kw generator for back-up power in the event of an electrical failure.

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

Ogle County met this objective.

A second PAR was received from the State at Ogle County at 1137 hours. The recommendation was to evacuate 0-2 miles radially; shelter 2-10 miles in downwind Sectors K, L, and M; place all animals on stored feed and protected water out to 10 miles radially; and that emergency workers and immobile populations take KI.

In accordance with the current FEMA interpretation of operative guidance, the alert and notification sequence is to occur in a particular order: activate the sirens, and then contact the local emergency broadcast station. During the second alert and notification sequence in Ogle County the sequence was reversed: the sirens were sounded at 1138 hours and the EBS message was at 1136 hours.

ISSUE: Alert and Notification Sequence Reversed **ARCA**

NUREG Reference: E.6.

During the second alert and notification sequence in Ogle County the alert and notification sequence was reversed from that described in FEMA REP-14.

Recommendation: Since the first sequence was satisfactory, and the County should conduct additional training to ensure the procedure is standardized and all personnel are familiar with the procedure.

OBJECTIVE 12: EMERGENCY INFORMATION - MEDIA

Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.

Ogle County met this objective.

The Ogle County Public Information Officer (PIO) was in charge of the County's role in the development and dissemination of clear, accurate, and timely information to the news media, and was

located in the JPIC. The Ogle County PIO maintained continuous communication with the Ogle County EOC.

The County PIO was alerted soon after the *Alert* ECL. The PIO was available and participated in briefings to the media, which included protective actions taken by the County, identification of evacuation routes, and location of reception and congregate care centers. The media was also informed as to the provision for special populations and transportation-dependent individuals.

OBJECTIVE 13: EMERGENCY INFORMATION RUMOR CONTROL

Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

Ogle County met this objective.

The Ogle County EOC staff were alert to detect rumors and took action to assist in preventing rumors from spreading. In accordance with the extent-of-play agreement, simulated telephone calls received by EOC staff reflecting possible misinformation were quickly analyzed and correct information was obtained and forwarded to the JPIC, including informing the caller when a call-back was not necessary. In at least two instances, inquires were forwarded to the JPIC.

OBJECTIVE 14: IMPLEMENTATION OF PROTECTIVE ACTIONS - USE OF KI FOR EMERGENCY WORKERS, INSTITUTIONALIZED INDIVIDUALS, AND THE GENERAL PUBLIC

Demonstrate the capability and resources to implement potassium iodide (KI) protective actions for emergency workers, institutionalized individuals, and, if the State plan specifies, the general public.

Ogle County met this objective.

The Ogle County EOC is located outside the 10-mile EPZ. However, there was sufficient KI at this facility for all staff should any of them be required to go into the EPZ. The KI had an expiration date of June 1996. Complete instructions for the KI were in the kits. The record log was available to record any KI taken. The representative from IDNS recommended to the Ogle County EOC at 1145 hours that emergency workers and immobile populations could take KI if they chose to. The Ogle County EOC did not actually issue KI to staff at the EOC (see Objective 17).

OBJECTIVE 15: IMPLEMENTATION OF PROTECTIVE ACTIONS - SPECIAL POPULATIONS

Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

Ogle County met this objective.

The Ogle County EOC staff demonstrated the capability and availability of resources necessary to implement protective actions for special populations. The EOC Health Representative used a current computer print-out which listed persons with special needs living inside the EPZ.

The County ESDA office generates, maintains, and provides the listing. During the exercise, attention was focused on transportation for the dependent, handicapped, and institutionalized persons. There were 17 individuals plus two nursing homes within the EPZ that required assistance. These people and institutions were notified through the local emergency broadcast station and by simulated telephone calls.

Transportation assistance for the 17 individuals was provided by Stillman Valley Fire Department. In event additional resources were needed, Ryder Transportation Company would have been called. Sheltering was the protective action recommended for the nursing homes. In this mode, it became necessary to provide and administer KI at the nursing homes, which was simulated.

OBJECTIVE 16: IMPLEMENTATION OF PROTECTIVE ACTIONS - SCHOOLS

Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency planning zone (EPZ).

Ogle County met this objective.

An evaluation of the Meridian Community School District, which encompasses the schools in Ogle County, was conducted out-of-sequence on May 11, 1993. Findings from this evaluation were complemented the following day by activities demonstrated in the Ogle County EOC during the exercise.

During the May 11 evaluation, separate interviews were conducted with the District Superintendent, the Meridian Junior High School Principal, a Monroe Center teacher/bus driver, and the District Bus Supervisor. Each person interviewed was selected at random by the Federal evaluator from among the group of principals, teachers, and drivers that had been assembled by the District

Superintendent. All were aware of the school's written procedures and knowledgeable of their specific emergency functions.

Tone-alert radios located in the superintendent's and each principal's offices are the schools' first alert of an incident involving Byron Station. These radios are tested every Wednesday This alerting method is augmented by a telephone notification from the Regional School Superintendent located in the Ogle County EOC. The District Superintendent initiates a telephone call-down tree to: the various schools, the bus supervisor and drivers, administrative staff, and custodians. A copy of the call-down list to be used was available and current.

The District Superintendent can initiate early dismissal of the schools if warranted. Each student has been issued a handbook containing information pertinent to emergency procedures. Each student's parent/guardian has also completed a form providing the school with instructions concerning the student in event of an emergency. This process ensures that the parents and the schools are aware of the student's whereabouts. The process is supplemented by telephone calls from the schools to the parents' emergency contacts. It is further enhanced by brochures distributed with the mailing of utility bills. There are a few sixth, seventh, and eighth graders who, unless met at the bus stop by an adult, would be kept on the bus and returned to the reception center. The buses are equipped with two-way radios and the bus supervisor can instruct the driver concerning these "latch-key" children or others whose homes may be in the plume. Information concerning the schools is also included in local emergency broadcast station radio broadcasts and press releases from the JPIC.

It is estimated that 21 buses would be required to evacuate the 1,310 students, pre-school through 12th grade. The District has 28 buses, including a lift-equipped bus, which is in daily use to accommodate the one mobility-impaired student presently enrolled. Additional resources are available from other nearby districts and the Ryder Transportation Company. Traffic control around the schools and escort for bus convoys is provided by Ogle County Auxiliary Police.

Bus drivers would be on routes familiar to them. Additionally, they would be issued dosimetry kits, receive a briefing from the bus supervisor and given packets containing emergency information and maps. These materials are kept ready for issue at the bus garage from where dispatch occurs; dosimetry kits are maintained separately. All interviewed persons correctly confirmed the students, if instructed, would be transported to the reception/ congregate care center at Jefferson High School in Rockford.

There were 28 dosimetry kits and four dosimeter chargers available for the bus drivers. Each kit contained a thermo-luminescent dosimeter (TLD); two DRDs, one 0-20 R and one 0-200 R (both calibrated on January 12, 1993); a vial of KI with an expiration date of March 1996; an exposure record card; and instructions concerning use of the instruments, KI, and key exposure limits. The bus supervisor had a form on which to record the issue of the instruments, readings, and other relevant information. The driver that was interviewed knew to report readings to the bus supervisor and request guidance from her in event of radiation exposure limits being exceeded. He was aware of the 3 R administrative dose limit. He knew to return the dosimetry to her at the end of his mission. He also understood the potential need to take KI.

During the course of the exercise, the school representative in the EOC initiated, coordinated, and monitored the simulated evacuation of all schools within the evacuated area, which included all schools in Stillman Valley, the Town of Byron, and the Ogle County Educational Cooperative in Byron. In accordance with the Plan, the students were transported (simulated) to Jefferson High School.

In preparation for a possible emergency, the District Superintendent has been in frequent contact with the County ESDA Coordinator to develop and update plans and SOPs. In conjunction with the County, State, and utility, the District had conducted training for involved personnel. The most recent training session was in April 1993, and all but one teacher attended.

OBJECTIVE 17: TRAFFIC AND ACCESS CONTROL

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

Ogle County met this objective.

Responsibility for traffic and access control was successfully shared between the Ogle County Sheriff's Department and the Illinois State Police. Special assistance for barriers and/or equipment to remove impediments could be obtained from the Highway Department. Traffic and access control points were established and shown on the special map. Traffic and access control points were also shown on the map throughout the relocation, re-entry and return phase of the exercise.

An out-of-sequence traffic/access control point was successfully established during the exercise. An Ogle County Sheriff's officer received the proper dosimetry from the Dosimetry Control

Officer at base operations. The kit included the same equipment and paperwork as shown in Objective 16, above. He was aware of the 3 R administrative limit on radiation exposure and whom to contact if the limit was reached or exceeded.

He successfully demonstrated the capability to set-up a traffic and access control point at Sector G, location 28-6, using his vehicle. He was aware of where to request assistance for barriers and/or equipment to remove impediments.

OBJECTIVE 29: RELOCATION, RE-ENTRY, AND RETURN - IMPLEMENTATION

Demonstrate the capability to implement appropriate measures for relocation, re-entry, and return.

Ogle County met this objective.

The Ogle County ESDA Coordinator, with technical support from IDNS and IEMA implemented successfully the return, re-entry, and relocation of evacuees from the restricted areas. Access control points were established through cooperation of the Ogle County Sheriff's Department and Illinois State Police, at the Oregon and Byron Fire Departments based upon the restricted areas of Marion Township West of Marrill Road and all of Rockvale Township. The portion of the City of Byron which lies North of the Rock River was not restricted.

Substantial identification, e.g., a driver's license, will be required for any individual who needed to enter the restricted area, e.g., farmers with dairy herds, and all those who would enter when the restriction was cleared. Stillman Valley and Byron residents were advised as to the re-entry timing. Transportation will be provided for any person still in a congregate care center.

A small area identified in Rockvale Township: the area bounded on the north by Ash Road, the west by Razorville Road, the south by Pleasant Grove Road, and the east by German Church Road, was designated a long-term restricted area. Access control and isolation of this area would have been provided by the State Police using cement barricades. Lodging for the few residents involved would be provided by Red Cross.

OBJECTIVE 30: CONTINUOUS, 24-HOUR STAFFING

Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.

Ogle County met this objective.

The key staff necessary for demonstration of a shift change included: the Ogle County Board Chairman, ESDA Coordinator, Sheriff's representative, Highway Superintendent, and the Superintendent of Educational Services.

The shift change was demonstrated during the middle of the exercise. The first message initiating the shift change was received at approximately 1031 hours. After receiving a message at the EOC, each participant contacted their replacement by using the EOC roster and a telephone list. All replacement personnel were at the EOC by 1230 hours, and were briefed by their counterpart. All briefings were sufficient to inform incoming personnel of all information necessary for decision-making. The shift change was completed at approximately 1235 hours.

OBJECTIVE 31: OFFSITE SUPPORT FOR THE EVACUATION OF ONSITE PERSONNEL

Demonstrate the capability to provide offsite support for the evacuation on onsite personnel.

Ogle County met this objective.

The Sheriff at the Ogle County EOC received a request at 1039 hours, from the Byron Station to provide transportation to remove non-essential onsite staff. The Sheriff responded at 1043 hours, and provided four special cars to assist in this operation. Evacuation was completed within an hour. Coordination with State Police and the County Highway Department was established for traffic control.

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PART III

STATE OF ILLINOIS

Deficiencies

There were no deficiencies identified for the State of Illinois during this exercise.

Area Requiring Corrective Action

Two ARCAs were identified for the State of Illinois during this exercise.

OBJECTIVE 9: Failure to Follow Procedure

NUREG Reference: J.9.

The REAC Commander recommended KI for emergency workers but did not include immobile and institutionalized individuals. Additionally, a form that would have outlined the KI recommendation (Attachment 2 to Procedure 4-SOP-4) should have been transmitted to the SEOC but was not.

Recommendation: That REAC personnel re-familiarize themselves with the procedures contained in the IDNS portion of the IPRA.

PROPOSED CORRECTIVE ACTION: A revised version of 4-SOP-4, clarifying the intent of the recommendation and eliminating Attachment 2 will be issued in late 1993. The change will be reflected in the upcoming revision to the IPRA, Volume I, and will be addressed in revision to the NARS Form now under consideration.

OBJECTIVE 12: Distribution of News Releases

NUREG Reference: E.7.

Copies of all news releases were neither sent to nor received at locations that needed them, e.g., SEOC and REAC. It is preferable that the SEOC and REAC receive copies of each news release so they can be aware of the information being released to the media.

Recommendation: That a checklist be developed for use in the JPIC to ensure that all news releases are distributed and received at key response organizations.

PROPOSED CORRECTIVE ACTION: This ARCA has been corrected through subsequent demonstrations. This situation has not arisen during several subsequent REP exercises since this time. The State of Illinois routinely faxes copies of news releases to the SEOC and other State rewsponse organizations.

Areas Recommended For Improvement

There were no Areas Recommended for Improvement identified for the State of Illinois during this exercise.

OGLE COUNTY

Deficiencies

There were no deficiencies identified for Ogle County during this exercise.

Area Requiring Corrective Action

One Area Requiring Corrective Action identified for Ogle County during this exercise.

OBJECTIVE 11: Alert and Notification Sequence Reversed

NUREG Reference: E.6.

During the second alert and notification sequence in Ogle County the alert and notification sequence was reversed from that described in FEMA REP-14.

Recommendation: Since the first sequence was satisfactory, and the County should conduct additional training to ensure the procedure is standardized and all personnel are familiar with the procedure.

PROPOSED CORRECTIVE ACTION: Ogle County will conduct additional training for County officials to ensure proper the sequencing of siren activiation and the broadcast of EBS messages.

Areas Recommended for Improvement

There were no Areas Recommended for Improvement identified for Ogle County during this exercise.

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APPENDICES

APPENDIX A

EVALUATORS

Individual	Organization	Location
Danny Bement[1,2]	FEMA V	State of Illinois
Tom Carroll	ANL	
Kevin Flynn	ANL	
Al Lookabaugh	ANL	
Bill Lueders	CPR	
Tom Rigney	SET	
Jerry Staroba	ANL	
Anna Pudlo[2]	FEMA V	Ogle County
Rick Anthony	CPR	
Neil Gaeta	ANL	
Brent McMahan	FEMA V	

Key:

ANL	Argonne National Laboratory
CPR	Center for Planning and Research
FEMA V	Federal Emergency Management Agency
SET	SE Technologies, Inc.

NOTES:

1 - Exercise Director
2 - Team Leader

APPENDIX B

EXERCISE OBJECTIVES

Revised 4/15/93

BYRON NUCLEAR POWER STATION EXERCISE
MAY 12, 1993

SCOPE OF PARTICIPATION

State of Illinois

The State of Illinois will participate on a partial scale basis in the 1993 Byron Station exercise. The State EOC in Springfield will be partially activated with representatives from IEMA and IDNS. Other State agencies may be contacted but will not report to the State EOC. The Radiological Emergency Assessment Center (REAC) and Radiological Assessment Field Teams (RAFT) will be staffed with simulators.

The State Forward Command Post in Dixon will be activated as a training tool for State district and region personnel. IEMA personnel will be prepositioned in the Byron Station vicinity for response to the Forward Command Post, the Ogle County EOC, the JPIC and the EOF. IDNS personnel will be prepositioned in the Byron Station vicinity for response to the EOF, TSC, Forward Command Post, Ogle County EOC and the JPIC.

A relocation and decontamination center walk-through inspection will be conducted at Thomas Jefferson High School in Rockford at 3:30 p.m. on May 10.

The State will expect FEMA evaluators at the State EOC, REAC, JPIC, Forward Command Post, RAFT, EOF and the relocation/decontamination center inspection.

Ogle County

Ogle County will fully participate in the 1993 Byron exercise. Ogle County intends to fully activate the EOC in Rochelle. Ogle County officials and representatives from the EPZ municipalities, Winnebago County, IEMA, IDNS, ISP and Commonwealth Edison Company will staff the EOC. Key staff in the County EOC will demonstrate a shift change.

Ogle County will demonstrate traffic and access control procedures and emergency worker exposure control. An EV-2 interview will be conducted at 10 a.m. on May 11 at the Meridian Community Unit School District (Stillman Valley). An interview of the local emergency broadcast radio station will be conducted on May 12 at 4 p.m.

Ogle County will expect FEMA evaluators at the County EOC, at the EV-2 interview and at the radio station interview.

Revised 4/15/93

STATE OF ILLINOIS OBJECTIVES
FOR THE
BYRON NUCLEAR POWER STATION EXERCISE

MAY 12, 1993

1. Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

   The State Emergency Operations Center (EOC) will be partially activated with IEMA and IDNS personnel. The IEMA Dispatcher will implement notification procedures as defined in the IPRA-State General Plan, Volume I. State agency liaisons may be contacted but will not report to the State EOC.

   The State Forward Command Post in Dixon will be activated as a training tool for State district and region personnel. IEMA personnel will be pre-positioned in the Byron Station area and dispatched to the Ogle County EOC, Forward Command Post, the JPIC and EOF.

   The IDNS Dispatcher will simulate notification procedures as defined in the IPRA-State General Plan and in accordance with IDNS SOPs. REAC and RAFT will be activated with simulators. IDNS personnel will be prepositioned in the Byron Station vicinity for response to the Ogle County EOC, Forward Command Post, JPIC, EOF and TSC.

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

   This objective will be demonstrated in State facilities through the use of maps, status boards and displays as appropriate.

3. Demonstrate the capability to direct and control emergency operations.

   The ability to direct and control emergency response activities will be demonstrated at the State EOC, REAC, the Forward Command Post, RAFT and JPIC. Coordination will be demonstrated between the State EOC, REAC, the State Forward Command Post, RAFT, the JPIC, the EOF, and the Ogle County EOC.

4. Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

   IEMA will use a variety of communication systems [Nuclear Accident Reporting System (NARS), telefax, commercial telephone, radio] to communicate with other organizations and locations.

   IDNS (intra/inter-agency) communications capabilities will be demonstrated in accordance with appropriate SOPs (e.g. NARS, telefax, commercial telephone, radio).

5. Demonstrate the ability to continuously monitor and control radiation exposure to emergency workers.

   This objective will be demonstrated during the Illinois State Police traffic and access control demonstration.

6. Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.

   This objective was not selected by the State of Illinois.

7. Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering.

   The ability to project dosage to the public via plume exposure based on plant and field data will be demonstrated by IDNS through coordination between REAC, RAFT and the EOF.

8. Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^{-7} (0.0000001) microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.

   This objective was not selected by the State of Illinois.

9. Demonstrate the capability to make timely and appropriate protective action decisions (PAD).

   The coordination to determine protective action recommendations based upon available shelters, evacuation time estimates and other relevant factors will be demonstrated between the State EOC and REAC.

   The ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons will be demonstrated by IDNS in REAC.

10. Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.

    This capability will be demonstrated as outlined in the IPRA-State General Plan. The Governor, or his representative in the State EOC, will notify the appropriate radio station. The radio station will be contacted during the first alert and notification sequence. The IEMA NARS operator will notify Ogle County via NARS of the need to initially activate sirens and the local radio station. A protective action recommendation will be included if appropriate.

11. Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

This capability will be demonstrated as outlined in the IPRA-State General Plan. The Governor, or his representative in the State EOC, will notify the appropriate radio station. Calls to the radio station will be simulated for each alert and notification sequence following the initial sequence. The IEMA NARS operator will notify Ogle County via NARS of the appropriate recommendation regarding protection for the public.

12. Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.

This objective will be demonstrated at the JPIC in coordination with the State EOC, REAC and the Ogle County EOC. IEMA and IDNS personnel will be present at the JPIC to coordinate with Commonwealth Edison Company.

13. Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

This objective will be demonstrated by the State through coordination between the JPIC, State EOC, REAC, Forward Command Post and the Ogle County EOC. The ability to coordinate and address rumors will be demonstrated. A bank of phones will not be operated during the exercise.

14. Demonstrate the capability and resources to implement potassium iodide (KI) protective actions for emergency workers, institutionalized individuals, and, if the State plan specifies, the general public.

This objective was not selected by the State of Illinois.

15. Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

This objective is not applicable to the State of Illinois.

16. Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency planning zone (EPZ).

This objective is not applicable to the State of Illinois.

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

    This objective will be demonstrated by the State through coordination between the Forward Command Post and the Ogle County EOC, in accordance with 6-SOP-7, "Byron Station EPZ Traffic and Access Control". The Illinois State Police will man one traffic and access control post. The manning of the remaining State posts will be simulated during the exercise.

18. Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

    To demonstrate this objective, a walk-through inspection of Thomas Jefferson High School in Rockford will be conducted at 3:30 p.m. on May 10. An IDNS representative will explain how the monitoring and decontamination stations will be arranged and how the flow of evacuees will occur. The IDNS representative will also provide information regarding procedures, personnel and equipment available for the monitoring and decontamination operation. A monitoring and decontamination center will not be fully activated. Evacuees will not be processed through the facility.

19. Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.

    To demonstrate this objective, a walk-through inspection of Thomas Jefferson High School in Rockford will be conducted at 3:30 p.m. on May 10. The evaluator will be able to inspect the facility to determine its adequacy for congregate care of evacuees. Representatives of the local agencies responsible for operation of the congregate care center will be available to provide information regarding procedures, personnel, equipment and supplies available for activation and operation of the facility. A congregate care center will not be fully activated and evacuees will not be processed through the facility.

20. Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.

    This objective was not selected by the State of Illinois.

21. Demonstrate the adequacy of the equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.

    This objective was not selected by the State of Illinois.

22. Demonstrate the adequacy of procedures for the monitoring and decontamination of emergency workers, equipment, and vehicles.

    To demonstrate this objective, a walk-through inspection of Thomas Jefferson High School in Rockford will be conducted at 3:30 p.m. on May 10. An IDNS representative will explain where the monitoring and decontamination stations will be arranged and how the flow of emergency workers and equipment will occur. The IDNS representative will also provide information regarding procedures, personnel and equipment available for the monitoring and decontamination operation. A monitoring and decontamination center will not be fully activated. Emergency workers and equipment will not be processed.

23. Demonstrate the capability to identify the need for external assistance and to request such assistance from Federal or other support organizations

    This objective was not selected by the State of Illinois.

24. Demonstrate the use of equipment and procedures for the collection and transportation of samples from areas that received deposition from the airborne plume.

    This objective was not selected by the State of Illinois.

25. Demonstrate laboratory operations and procedures for measuring and analyzing samples.

    This objective was not selected by the State of Illinois.

26. Demonstrate the capability to project dose to the public for the ingestion exposure pathway and to recommend protective actions.

    This objective was not selected by the State of Illinois.

27. Demonstrate the capability to implement protective actions for the ingestion exposure pathway.

    This objective was not selected by the State of Illinois.

28. Demonstrate the capability to develop decisions on relocation, re-entry, and return.

    This objective was not selected by the State of Illinois.

29. Demonstrate the capability to implement appropriate measures for relocation, re-entry, and return.

    This objective was not selected by the State of Illinois.

30. Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.

This objective was not selected by the State of Illinois.

31. Demonstrate the capability to provide offsite support for the evacuation of onsite personnel.

This objective is not applicable to the State of Illinois.

32. Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.

This objective was not selected by the State of Illinois.

33. Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.

This objective was not selected by the State of Illinois.

OGLE COUNTY OBJECTIVES
FOR THE
BYRON NUCLEAR POWER STATION EXERCISE

MAY 12, 1993

1. Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

   Ogle County intends to fully activate the County EOC in Rochelle, Illinois. The County will implement notification procedures as defined in IPRA-Byron.

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

   This capability will be demonstrated in the Ogle County EOC through the use of maps, status board and other displays as appropriate.

3. Demonstrate the capability to direct and control emergency operations.

   Decision making will be demonstrated at the State EOC and Ogle County EOC. Coordination of decisions and emergency activities will be demonstrated between Ogle County, the State EOC, Forward Command Post and the JPIC, and between Ogle County, the municipalities within the EPZ and Winnebago County.

4. Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

   Ogle County will use NARS, commercial telephone, radio and telefax to communicate with departments and agencies at other locations. Field personnel will be contacted by commercial telephone and radio.

5. Demonstrate the ability to continuously monitor and control radiation exposure to emergency workers.

   Ogle County will demonstrate this objective by close coordination with IDNS and timely dissemination and exchange of information within the County Dosimetry Control Officer network. Exercise messages will be injected which will ensure the opportunity to demonstrate this objective in the County EOC. This objective will also be demonstrated during the EV-2 interview and traffic and access control demonstration.

6. Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.

   This objective is not applicable to Ogle County.

7. Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering.

   This objective is not applicable to Ogle County.

8. Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^{-7} (0.0000001) microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.

   This objective is not applicable to Ogle County.

9. Demonstrate the capability to make timely and appropriate protective action decisions (PAD).

   This objective is not applicable to Ogle County.

10. Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.

    This objective will be demonstrated through the simulated activation of the Byron Station EPZ Prompt Notification System as defined in IPRA-Byron and 6-SOP-6, "Byron Station EPZ Prompt Notification System". The Prompt Notification System (outdoor warning sirens) will not be activated during the exercise.

    The ability to provide instructions to the public will be demonstrated through the simulated activation of the local radio station. The radio station will be contacted during the first alert and notification sequence. After the appropriate contact is made, the County official will hang up before the message is read aloud. An interview will be conducted with WROK/WZOK at 4 p.m. on May 12.

11. Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

    Ogle County will demonstrate this objective by using pre-scripted messages, as indicated in IPRA-Byron and 6-SOP-8, "Byron Station EPZ Sheltering and Evacuation - General Population", to develop the messages. Calls to the radio station will be simulated for each alert and notification sequence following the initial sequence. The messages will be read aloud, however broadcast of the messages will be simulated.

12. Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.

    This capability will be demonstrated by Ogle County through media briefings conducted at the JPIC. Ogle County will provide a representative to the JPIC to coordinate with State personnel. Media briefings will not be conducted at the Ogle County EOC.

13. Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

    This objective will be demonstrated by Ogle County through coordination between the County EOC, State Forward Command Post and the JPIC. The Ogle County EOC controller will inject exercise messages which will ensure the opportunity to demonstrate this objective.

14. Demonstrate the capability and resources to implement potassium iodide (KI) protective actions for emergency workers, institutionalized individuals, and, if the State plan specifies, the general public.

    If notified by the State of Illinois to distribute and administer KI, Ogle County officials will discuss the issuance of KI to emergency workers and immobile populations, as a voluntary measure, and will notify the municipalities of the State's recommendation.

15. Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

    This objective will be demonstrated by Ogle County through the simulated implementation of the appropriate SOPs. The appropriate officials will coordinate transportation and receiving facilities for special populations. The public will not be involved in the demonstration.

16. Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency planning zone (EPZ).

    Ogle County officials will demonstrate this capability through the simulated implementation of the appropriate SOPs in the County EOC. An EV-2 interview will be conducted on May 11 at 10 a.m. at the Meridian Community Unit School District (Stillman Valley).

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

    Coordination between Ogle County agencies designated to provide traffic and access control will be exhibited in the Ogle County EOC. A Ogle County deputy will be available to demonstrate the manning of one post. The manning of the remaining posts will be simulated.

18. Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

    This objective is not applicable to Ogle County.

19. Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.

This objective is not applicable to Ogle County.

20. Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.

This objective is not applicable to Ogle County.

21. Demonstrate the adequacy of the equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.

This objective is not applicable to Ogle County.

22. Demonstrate the adequacy of procedures for the monitoring and decontamination of emergency workers, equipment, and vehicles.

This objective is not applicable to Ogle County.

23. Demonstrate the capability to identify the need for external assistance and to request such assistance from Federal or other support organizations.

This objective is not applicable to Ogle County.

24. Demonstrate the use of equipment and procedures for the collection and transportation of samples from areas that received deposition from the airborne plume.

This objective is not applicable to Ogle County.

25. Demonstrate laboratory operations and procedures for measuring and analyzing samples.

This objective is not applicable to Ogle County.

26. Demonstrate the capability to project dose to the public for the ingestion exposure pathway and to recommend protective actions.

This objective is not applicable to Ogle County.

27. Demonstrate the capability to implement protective actions for the ingestion exposure pathway.

This objective is not applicable to Ogle County.

28. Demonstrate the capability to develop decisions on relocation, re-entry, and return.

This objective is not applicable to Ogle County.

29. Demonstrate the capability to implement appropriate measures for relocation, re-entry, and return.

The Ogle County EOC staff will demonstrate the objective through discussions within the County EOC and with the State EOC, REAC, Forward Command Post, RAFT and the JPIC as necessary. The controller will provide a break message which will contain the predesignated decisions regarding relocation, re-entry and return. The County EOC staff will discuss the implementation of the decisions. The State will participate to the extent necessary to support Ogle County.

30. Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.

This objective will be demonstrated in the Ogle County EOC through an actual shift change of key positions. These key positions are: the County Board Chairman, ESDA Coordinator, Sheriff's Representative, Highway Superintendent, Superintendent of Educational Services, Health Officer and Coroner. Positions not demonstrating a shift change will be the administrative support staff, and the liaisons from the municipalities, the Red Cross, Winnebago County, IEMA, IDNS, ISP and Commonwealth Edison Company.

31. Demonstrate the capability to provide offsite support for the evacuation of onsite personnel.

This objective will be demonstrated in the County EOC through coordination between the utility representative and the County agencies designated to provide traffic and access control.

32. Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.

This objective was not selected by Ogle County.

33. Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.

This objective was not selected by Ogle County.

APPENDIX C

EXERCISE SCENARIO

Byron Nuclear Power Station
1993 GSEP Exercise
May 12, 1993

Narrative Summary
Initial Conditions

Unit One:
Unit One has been operating at 100% power for the past one-hundred twenty (120) days. The 1B Safety Injection (SI) pump is out of service (OOS) due to repairs necessitated by high vibration readings. Mechanical Maintenance is scheduled to make repairs and return the pump to service on May 12th around 1300. The Unit has been experiencing Digital Electro-Hydraulic Control (DEHC) problems and Operations Analysis Department (OAD) has been notified and are scheduled to begin troubleshooting by 1200 today (5/12/93). Nuclear Fuel Services PWR Plant Support Engineers have been working closely with the station's Nuclear Group Engineers (NUKEs) to resolve recent unexplained Reactor Core Quadrant Power Tilt Ratio (QPTR) problems. Incore Flux Maps have revealed increased localized axial peaking in quadrant four (4) of the station's core. Unit One has been experiencing increased Iodine (I^{131}) levels in the core for the past eight (8) days and the Shift Engineer has requested the Chemistry Department to increase their sampling frequency. Chemistry levels are below the Technical Specification's limit. The Unit 1A Diesel Generator monthly surveillance run has been scheduled for today at 0745.

Unit Two:
Unit Two is in Day One (1) of an expected 59 day refueling outage. Fuel Handlers are preparing the necessary equipment in the spent fuel pool area for the upcoming Unit Two refueling activities. Fuel Handlers are expected to test the Fuel Handling Building crane and grappling tools today to ensure their operability for the upcoming scheduled outage. The transfer canal is dry and has not been flooded for refueling activities.

Unit Zero:
Commonwealth Edison's Public Affairs Department has scheduled a tour of one of its nuclear facilities for the month of May. Byron Station being among the industry leaders was chosen to host the tour services for a group in order to provide intervenors (10 representatives) with an informed and educational background on the operation of a nuclear facility and the need to support nuclear energy. Citizen for Efficient Energy (CEE), Union for the Preservation of the Earth (UPE), and Lawyers Aligned with Wind Energy (LAWe) are among the expected groups to tour the facility at (1000) today.

Byron Nuclear Power Station
1993 GSEP Exercise
May 12, 1993

Unusual Event
(0800 - 0830)

At 0800 an audible alarm is received on the Unit One Control Room RM-11, (1RT-PR006) Gross Failed Fuel Monitor indicating fuel failure.

Expected Action

The Unit One NSO will call up the alarming channel and discover, the 1RT-PR006, failed fuel monitor is the problem. The NSO upon examining the EALs will discover that an Unusual Event should be declared as a result of the alarm.
The Shift Engineer shall declare an Unusual Event per EAL 2b (failed fuel monitor [_REPR006B (RM-11 _PS206)] indicates ≥ .22 microcurie/ml indicative of 0.1% fuel failure). Chemistry will be notified to sample RCS and perform required Technical Specification Surveillance.

Alert
(0830 - 0945)

At 0815, the Fuel Handlers (Response Cell) will call the Control Room to inform them that a tool-box was accidently toppled over into the Transfer Canal gate, severing an Instrument Air line, causing a rapid drop in level within the Spent Fuel Pool. The Fuel Pool will have dropped below the Technical Specification required level by 0830. The Control Room receives an alarm on panel 1PM06J indicating a problem with the Spent Fuel Pit level. The Spent Fuel Pit will continue to drain until it is either stopped by the Station or when the Transfer Canal volume levels out with the Spent Fuel Pool. At 0930 a fault occurs on the 1A Control Room Chiller. The Control Room Chiller breaker fails open causing an eighty-six (86) lockout and a loss of Bus 141.

Expected Action

After being notified by the Fuel Handlers of the accident involving the toppled toolbox, the Control Room should dispatch an operator to investigate. The shift upon hearing the operator's report will then dispatch mechanical maintenance to troubleshoot and make repairs. The Control Room NSO will investigate the alarm by using the BARs. An Alert will be declared per EAL 9g (Fuel Pool Level with irradiated fuel in the pool decreases below the Technical Specification limit) or EAL 5c (same as previous). The operator will isolate the instrument air line

Expected Action (continued)

at the Spent Fuel Pool location and should attempt to add volume to the Spent Fuel Pool by aligning the RWST, Fire Protection, Primary Water or the Demins System up to pump water via a Fire hose or other means. Electrical maintenance and an Operator will be dispatched to investigate the fault on Bus 141 as well as the Control Room chiller breaker failure. The Corporate Emergency Operations Facility (CEOF), located in Downers Grove on the fifth floor, will be activated in a support role at the Alert stage.

Site Emergency
(0945 - 1100)

The 1B and 1C Feedwater pumps trip and the 1A Feedwater pump will not start. The Control Room receives the S/G Low-Low Reactor Trip alarm on panel 1PM05J. An Anticipated Transient Without SCRAM (ATWS) occurs and manual attempts by the Control Room crew to trip the reactor will result in failure. The turbine will also fail to manually trip due to a clogged return line on the EH reservoir caused by an EH reservoir leak. In response to the increasing pressure in the Reactor Coolant System (RCS), the Pressurizer Power Operated Relief Valves (PORVs) and 1RY8010A,B,and C Safeties will lift in response to the pressure transient. The resulting transient will cause the Pressurizer Relief Tank (PRT) to rupture and permit a release of radiative steam and fluids to the containment building and containment sump. The 1B Aux-Feed pump fails to start due to low suction pressure resulting from a failed pressure transmitter. Two (2) Steam Generator (S/G) Safeties will have stuck open on the 1D S/G. At 0948 the 1B Chemical Volume (CV) pump will shear its shaft key and degrades below design operation capability. The Control Room NSO will be able to observe low motor amps on the pump when monitoring the panel. When the Briefing Officers or Corporate Emergency Planner arrives at the EOF and attempts to power up the Emergency Management Center (EMC) visual equipment, the equipment initially starts-up but shortly de-energizes. All attempts to turn the equipment on by the power switch will fail. At 1005 the group of intervenors, scheduled to tour the site, phones the station manager from a gas station in Byron inquiring about the validity of conditions that they have heard via radio news announcements. They will request information about what they should do and the acceptability of going to the EOF for further information.

Expected Action

An operator will be dispatched to the Reactor Trip Breaker to manually trip the reactor. A Site Emergency will be declared on EAL 3k (Failure of the Reactor Protection System instrumentation to initiate OR complete an automatic trip once a Reactor Protection System setpoint has been exceeded AND a manual trip was NOT successful). An operator will be dispatched to investigate the problem with the Aux-Feed pump. Maintenance will subsequently be called to troubleshoot the pump. An operator will be dispatched to investigate the cause of the low amperage reading on the CV pump and will discover that the pump has sheared its shaft key. Mechanical maintenance should be dispatched to investigate and make repairs. Core Exit Thermocouple will exceed 1200 F. Bus 141 will be restored allowing the plant to recover. The 1B SI pump will be returned to service. The Briefing Officers/Corporate Emergency Planner should check the unit's fuse located inside of the Main Power Supply and discover that is has blown due to a probable power surge. The Briefing Officer/Corporate Emergency Planner will have to locate and replace the defective fuse in order to power up the unit.

The Station Director or designee should inform the group of intervenors that the Station's conditions will not permit the scheduled tour to occur at this time and due to present conditions he does not have time to discuss alternatives. The intervenors will contact Public Affairs and finally Communication Services to inquire about plant conditions and request permission to go to the Emergency Operations Facility to become better informed.

General Emergency
(1100- 1300)

The Steam Generator tubes rupture on the 1D S/G due to the differential pressure increasing to 2600 psig (1000 psig above the design limit). This result in an uncontrolled release to the environment through the ruptured S/G tube via the S/G safeties. At 1130, a fire erupts in the CEOF Protective Measures area as a result of an electrical fire under a workspace located in the facility. The fire destroys an outlet and portion of a work desk causing the temporary loss of the area.

Expected Actions

The Emergency Operations Facility (EOF) should declare a General Emergency based upon EAL 2m (Challenge to <u>two</u> of the three Fission Product Barriers <u>AND probable</u> loss of the third Fission Product Barrier.) based upon the Steam

Byron Nuclear Power Station
1993 GSEP Exercise
May 12, 1993

Expected Actions (continued)

Generator tube ruptures. Mechanical Maintenance should be dispatched to physically gag the S/G Safeties in order to close the release path. The fire burns for less than 10 minutes, however, it burns quickly. A fire extinguisher can be used to extinguish the flames.

Recovery (time-jump)
(1300 - 1400)

(May 12th 1300 through May 13th 1400)

The following information pertains to events occurrences as a result of the time-jump which occurred on May 12th at 1300.

May 12th	
< 1400	One Field Team was sent to assist from Quad Cities Station.
< 1400	State of Illinois requested DOE support for Aerial Radiation Field Mapping.
1300	Release is terminated upon Safety Valve being physically closed.
1445	IDNS Field Teams Ready for deployment
2010	DOE decides to activate a FRMAC, based in Rockford.
May 13th	
0400	DOE cargo planes arrives at the Greater Rockford Airport.
0800	One DOE helicopter began a preliminary overflight of the Byron Station Area.
1000	One DOE helicopter begins a preliminary radiation survey of the Byron Emergency Planning Zone (EPZ).
1300	Preliminary overflight data availaable for the Byron EPZ (see attached maps).

APPENDIX D

TIME LINE[1]

Event[2]	Utility	State of Illinois	Ogle County
Notification of Unusual Event			
Classified	0816		
Received		0818	0847
Verified		0848	0849
Alert			
Classified	0847		
Received		0856	0917
Verified		0915	0919
Site Area Emergency			
Classified	0953		
Received		1008	1028
Verified		1009	1029
Governor's Decision		1023	
Siren Sounding			1030
EBS			1030
PAR: Precautionary Message: General information to include placing dairy animals in shelter out to 2 miles radially and placing them on stored feed and protected water. The public told to stay tuned for further information.			
State of Disaster Declaration		1200	
General Emergency			
Classified	1105		
Received		1116	1137
Verified		1120	1139

Governor's Decision 1126
Sirens 1138
EBS 1136
PAR: Evacuate 0-2 miles radially, and shelter 2-10 miles in downwind Sectors K, L, and M. Recommended that KI be given to emergency workers and the immobile populations in the EPZ. It was further recommended that milk-producing animals be placed on stored feed and protected water out to 10 miles radially.

NOTES:

1 - Time shown in 24-hour clock, Central Daylight Time (CDT)

2 - ECLs shown in *italics*.

APPENDIX E

GLOSSARY

ARCA	Area Requiring Corrective Action
ARFI	Area Recommended for Improvement
CCC	Congregate Care Center
CoO	Chief of Operations
DCO	Dosimetry Control Officer
DRD	Direct-Reading Dosimeter (pencil-type)
EBS	Emergency Broadcast Station [Illinois usage]
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPZ	Emergency Planning Zone
ESDA	Emergency Services and Disaster Agency
GE	General Emergency
IDNS	Illinois Department of Nuclear Safety
IDOT	Illinois Department of Transportation
IEMA	Illinois Emergency Management Agency
IPC	Illinois Power Company
ISP	Illinois State Police
ISU	Illinois State University
JPIC	Joint Public Information Center
KI	Potassium Iodide *[Kalium Iodide]*
MDC	Monitoring Decontamination Center
mR	Milli-REM
NARS	Nuclear Accident Reporting System
NPS	Nuclear Power Station
NUE	Notice of Unusual Event
NUREG	Nuclear Regulatory Commission Publications Identifier
R	Radiation Equivalent Man (REM)
RACES	Radio Communications Emergency System
RAFT	Radiological Assessment Field Teams
REAC	Radiological Emergency Assessment Center
REP	Radiological Emergency Preparedness
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
SFCP	State Forward Command Post

TACP	Traffic and Access Control Point
TCP	Traffic Control Point
TLD	Thermo-luminescent Dosimeter
TSC	Technical Support Center