

MAR 18 1986

Docket No. 50-293

Boston Edison Company M/C Nuclear
ATTN: Mr. William D. Harrington
Senior Vice President, Nuclear
800 Boylston Street
Boston, Massachusetts 02199

Gentlemen:

Subject: FEMA Reports on the September 5, 1985 Pilgrim Emergency Exercise
and the October 29, 1985 Remedial Exercise

This letter transmits the Federal Emergency Management Agency report of the September 5, 1985 Pilgrim emergency exercise, and the subsequent remedial exercise of October 29, 1985, which was conducted to resolve Category A deficiencies identified during the September exercise.

Four Category A deficiencies were observed at the September 5, 1985, exercise. Three deficiencies were observed at the Carver Emergency Operating Center (EOC) and one was observed at the Taunton reception center. The three deficiencies at the Carver EOC were: (1) the ability to mobilize staff and activate facilities promptly was not demonstrated; (2) the EOC management did not participate in the exercise, make decisions or coordinate emergency activities; and, (3) the EOC staff did not adequately demonstrate their ability to alert the public within the 10-mile EPZ. The fourth deficiency concerned the Taunton reception center. The radiological monitoring capability for evacuees and vehicles was not demonstrated. As a result of the October 29, 1985 remedial exercise, the four deficiencies observed during the September 5, 1985, exercise have been adequately resolved.

If you have any questions concerning this matter please contact W. Lazarus of my staff at (215) 337-5207.

Sincerely,

Original Signed By:

Terry L. Harpster, Chief
Emergency Preparedness Section
Division of Radiation Safety
and Safeguards

Attachments: As Stated

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cc w/encl:

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C. J. Mathis, Station Manager
Joanne Shotwell, Assistant Attorney General
Paul Levy, Chairman, Department of Public Utilities
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Plymouth Civil Defence Director
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~~HIC~~
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Lazarus
3/17/86

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Federal Emergency Management Agency

Washington, D.C. 20472

FEB 19 1986

MEMORANDUM FOR: Edward L. Jordan
Director,
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission

FROM: *Richard W. Krimm*
Richard W. Krimm
Assistant Associate Director
Office of Natural and Technological
Hazards Programs

SUBJECT: Exercise Report of the September 5, 1985, Exercise
of the Offsite Radiological Emergency Preparedness
Plans for the Pilgrim Nuclear Power Station, and a
Report on the October 29, 1985, Remedial Exercise.

Attached is a copy of the Exercise Report of the September 5, 1985, joint exercise of the offsite radiological emergency preparedness plans for the Pilgrim Nuclear Power Station, Plymouth, Massachusetts. The joint exercise was full participation for the Commonwealth of Massachusetts and the five localities located within the Emergency Planning Zone (EPZ). The report, dated December 5, 1985, was prepared by the Federal Emergency Management Agency (FEMA) Region I. Also attached is a report on the October 29, 1985, Remedial Exercise for four Category A deficiencies observed at the joint exercise.

Four category A deficiencies were observed at the September 5, 1985, exercise: three were observed at the Carver Emergency Operating Center (EOC) and one was observed at the Taunton reception center. The three deficiencies at the Carver EOC were that: (1) it did not demonstrate the ability to mobilize staff and activate facilities promptly; (2) the EOC management did not participate in the exercise, make decisions or coordinate emergency activities; and, (3) the EOC staff did not adequately demonstrate their ability to alert the public within the 10-mile EPZ. The fourth deficiency was concerned with the Taunton reception center because the radiological monitoring capability for evacuees and vehicles was not demonstrated.

As a result of the October 29, 1985 remedial exercise the four deficiencies observed during the September 5, 1985, exercise have been corrected.

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In the September 5, 1985, exercise, there were other inadequacies identified requiring corrective actions. The Commonwealth of Massachusetts has received a draft copy of the exercise report and will be preparing schedules of corrective actions. When they are received and analyzed, we will send you copies.

If you have any questions, please contact Mr. Robert S. Wilkerson, Chief, Technological Hazards Division, at 646-2861.

Attachments
As Stated



Federal Emergency Management Agency

Region I J.W. McCormack Post Office and Court House
Boston, Massachusetts 02109

December 16, 1985

MEMORANDUM FOR: Samuel W. Speck
Associate Director
State & Local Programs & Support

FROM: Henry G. Vickers
Regional Director *Henry G. Vickers*

SUBJECT: Pilgrim Nuclear Power Station
Remedial Exercise Corrective
Actions Report

We have attached two copies of our Corrective Action Report regarding the Pilgrim exercise held October 29, 1985. This report is an addendum to the 1985 Pilgrim Exercise Report and describes the corrective actions taken to remedy the four deficiencies found during the subject exercise.

Attachments

REPORT ON THE REMEDIAL EXERCISE

FOR THE

P I L G R I M N U C L E A R P O W E R S T A T I O N

O C T O B E R 2 9 , 1 9 8 5



FEDERAL EMERGENCY MANAGEMENT AGENCY

R E G I O N I

John W. McCormack Post Office and Courthouse Building

Boston, Massachusetts 02109

~~8602240219~~ opp

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SUMMARY

On October 29, 1985 a remedial exercise was held to correct the four deficiencies (listed in the next section) identified in the draft report for the September 5 Pilgrim Exercise. A three hour drill was held, involving the Carver local EOC, and the grounds of the Taunton Reception Center. Tested at this remedial exercise were: the mobilization of staff and activation of facilities at the Carver EOC, the demonstration of decisionmaking and ability to coordinate emergency activities at the Carver EOC, the ability to alert the public within the Carver portion of the 10-mile EPZ, and the demonstration of radiological monitoring capability for evacuees at the Taunton Reception Center. The remedial exercise corrected the four deficiencies, and most of the Areas Requiring Corrective Actions in the Town of Carver, which were observed at the September 5, 1985, exercise.

I. INTRODUCTION

A. Deficiencies of September 5, 1985 Exercise

The four deficiencies observed at the September 5, 1985 exercise were as follows:

CARVER EOC

1. Description:

The Carver EOC did not demonstrate the ability to mobilize staff and activate facilities promptly. The EOC staff notified on the call-up list did not report to the EOC and carry out their assignments. (NUREG-0654, II, E.2, A.2.1)

Recommendation:

Designated staff should report to the EOC to represent the organizations designated in the plan. They should carry out specified assignments promptly. Procedures should be in place for activation of alternate staff to fill vacancies in first shift EOC appointments

2. Description:

EOC management, as specified in the plan, did not participate in the exercise. There was no demonstration of the ability to make decisions and to coordinate emergency activities. (NUREG-0654, II, A.1.d, A.1.b, A.2.a)

Recommendation:

An accurate EOC management structure should be developed and specified in the town plan. Alternate staff should be designated, trained, and procedures put in place for their activation

3. Description:

EOC staff did not adequately demonstrate their ability to alert the public within the 10-mile EPZ. There was no coordinated effort among the participating staff for simulating sounding of sirens, disseminating instructional messages, or route alerting. (NUREG-0654, II, E.6)

Recommendation:

EOC staff should demonstrate the ability to alert the public in the affected portions of their community and disseminate the initial instructional messages.

TAUNTON RECEPTION CENTER

4. Description:

The objective to demonstrate the radiological monitoring capability for evacuees and vehicles was not demonstrated because there were no trained personnel present at the Taunton Reception Center to conduct radiological monitoring. (FEMA-REP-1, Rev 1, II, K.5.a; o.4.c: J.12).

Recommendation:

Staff must be identified and trained to provide radiological monitoring of evacuees and vehicles.

B. Objectives for the Remedial Exercise

The objectives for the exercise held on October 29, 1985 to show correction of the deficiencies were as follows:

CARVER EOC

- 1) Demonstrated ability to alert, mobilize staff, and activate facilities at the Carver EOC.
- 2) Demonstrate ability to make decisions and coordinate emergency activities.
- 3) Demonstrate ability to alert the affected public within the 10-mile EPZ.
- 4) Demonstrate the organizational, operational, and physical capabilities of the Carver EOC through its full-scale activation. This is to address as many of the areas requiring corrective action as could be demonstrated.

TAUNTON RECEPTION CENTER

- 1) Demonstrate the radiological monitoring capabilities of Taunton city personnel to receive evacuees at the Taunton Reception Center.

C. Scenario for the Remedial Exercise

See attached scenario.

II. EXERCISE EVALUATIONS

The remedial drill of October 29, 1985 to demonstrate correction of the deficiencies observed during the September 5, 1985 full-scale exercise of the Pilgrim Nuclear Power Plant included activation of the Carver EOC and the radiological contamination monitoring station of the Taunton Reception Center located on the grounds of the Taunton State Hospital. Reports of observations in both locations follow.

A. Taunton Reception Center

Taunton City personnel adequately demonstrated their capability to provide radiological contamination monitoring for evacuees from the Pilgrim EPZ. Present for the exercise were 2 contamination monitors from the fire department and personnel manning a pumper truck for washing down contaminated vehicles. The fire department has a total of 8 trained monitors. There was a city policeman present for security and traffic direction. From the Taunton Civil Defense Agency, there were two trained monitors, plus the Civil Defense Director and Deputy Civil Defense Director. The Civil Defense Agency has the capability of fielding 20 trained people.

The Civil Defense Director brought with him seven CDV-777 kits. Each kit contains 1 CDV 700 geiger counter, 2 CDV-715 monitors, and an assorted supply of CDV-138's 742's, and 730's. The Deputy Civil Defense Director required each participating emergency worker (all who were present) to register by filling out a personnel record form and log of all dosimetry issued. Each emergency worker received a zeroed CDV-138 and CDV-742. TLD's were not actually issued. They would normally be provided through the Area II State Civil Defense Office.

For the purpose of the exercise, three vehicles were monitored in a segregated portion of parking area at the entrance to the reception area. The four monitors methodically checked all surfaces, including wheel wells, of all the vehicles. One truck was simulated as being contaminated. Written procedures were available, and followed.

The deficiency observed at this location during the September 5 exercise was corrected.

B. Town of Carver EOC

The Carver EOC, located in the Police Station was notified via the Minitor Alert System by the State Police of an Unusual Event at 1:30 p.m. Key EOC staff (Civil Defense Director and Fire Chief) were notified of such by beeper. All further communications to Carver originated from the Area II office for this exercise. At 1:51 p.m. Area II, notified Carver of an Alert. At 2:11 p.m., a Site Area Emergency was declared by Area II. Between 2:14 p.m. and 2:25 p.m., all EOC staff were called and reported for duty. EOC staff present were; the Civil Defense Director, a town Selectman, Police Chief, Fire Chief, School Superintendent, and the Department of Public Welfare and local Health agency heads. By 2:34 p.m., the EOC was fully activated. At 2:46 p.m., Area II notified the dispatcher at Carver that a General Emergency was declared at 2:35 p.m.

At 2:47 p.m., Area II relayed a protective action recommendation for sheltering in-place from 2-5 miles, applicable to Plymouth only. At this point, EOC staff began discussing in detail among themselves the range of preparatory steps they should be taking to prepare for a protective action response in Carver. There was good command and control exhibited by the Civil Defense Director, and excellent input from all EOC staff regarding activities to be accomplished in Carver, should the need arise.

At 3:09 p.m., Area II advised Carver that a sheltering in-place protective action recommendation for Carver East of Rte 58 would become effective at 3:15 p.m. The Civil Defense Director felt that the recommendation should have included the whole town. At 3:15 p.m., the activation of the public notification system (7 sirens) was simulated. EBS messages were inserted by an exercise controller to coincide with messages to be released to the public by the State.

At 3:25 p.m., it was simulated that the telephone system was not working. The communications officer adequately compensated by using RACES. Evacuation was simulated at 3:45 p.m. The local EOC staff knew their responsibilities regarding schools, special facilities, and were able to deal with a simulated traffic accident blocking an evacuation route and a simulated heart attack victim requiring medical attention.

The Carver EOC is now located in an operations room of the police station. It was adequate. Displays, maps, and status boards were used and kept current.

The three deficiencies noted at this location during the September 5 exercise have been corrected.

III. CONCLUSIONS

The one deficiency observed in the September 5 exercise of the plans and preparedness for the Pilgrim Nuclear Power Plant in Taunton, and the three observed in Carver, have been addressed and corrected. In addition, all six Areas Requiring Corrective Action and the one Area Recommended for Improvement in Carver were also addressed and corrected.

In conclusion, there is reasonable assurance that appropriate measures can be taken off-site in the event of a radiological emergency to adequately protect the public health and safety.



FINAL EXERCISE ASSESSMENT

JOINT STATE AND LOCAL RADIOLOGICAL EMERGENCY RESPONSE EXERCISE
FOR THE PILGRIM NUCLEAR POWER STATION
PLYMOUTH, MASSACHUSETTS

SEPTEMBER 5, 1985

FEDERAL EMERGENCY MANAGEMENT AGENCY

REGION I

John W. McCormack Post Office and Courthouse
Boston, Massachusetts 02109

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110 pp.

PILGRIM NUCLEAR POWER STATION

LICENSEE: Boston Edison Company
LOCATION: Plymouth, Massachusetts
DATE OF REPORT: December 5, 1985
DATE OF EXERCISE: September 5, 1985

PARTICIPANTS:

Commonwealth of Massachusetts
Plymouth, Mass.
Duxbury, Mass.
Carver, Mass.
Kingston, Mass.
Marshfield, Mass.

NONPARTICIPANTS: None

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LIST OF ABBREVIATIONS

ARC	American Red Cross
BECO	Boston Edison Company
CAP	Civil Air Patrol
CD	Civil Defense
CEP	Civil Emergency Preparedness
DPH	Department of Public Health
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EAL	emergency action level
EBS	Emergency Broadcast System
EOC	emergency operations center
EOF	emergency operations facility
EPA	U.S. Environmental Protection Agency
EPZ	Emergency Planning Zone
FEMA	Federal Emergency Management Agency
G-M	Geiger-Mueller
KI	potassium iodide
MCDA	Massachusetts Civil Defense Agency
MDPH	Massachusetts Department of Public Health
NAWAS	National Warning System
NIAT	Nuclear Incident Advisory Team
NOAA	National Oceanic and Atmospheric Administration
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654/ FEMA-REP-1	"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
PAG	protective action guide
PIO	public information officer
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RADEF	radiological defense
REP	radiological emergency preparedness
SOP	standard operating procedure
TCP	traffic control point
TLD	thermoluminescent dosimeter
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture

SUMMARY

The Commonwealth of Massachusetts, communities within the Pilgrim emergency planning zone, and the Boston Edison Company conducted an exercise of the plans and preparedness for off-site radiological emergency response for the Pilgrim Nuclear Power Station (PNPS) in Plymouth, Massachusetts, on September 5, 1985. Following the exercise, preliminary observations were indicated by the 22-member federal observer team, and briefings for exercise participants and the general public were held on September 6, 1985 at Memorial Hall in Plymouth. The evaluation, deficiencies, areas requiring corrective actions, areas recommended for improvement, and recommendations are included in this document.

Each deficiency or area requiring corrective action and a corresponding recommended corrective action is described by jurisdiction in Section 2 of this report. Areas recommended for improvement, which do not require corrective actions, are also similarly described.

Section 3 provides a summary listing of: (a) deficiencies which would lead to a negative finding, and (b) areas requiring corrective actions. It also provides a suggested format for the state to use in responding to these items.

FEMA has recently adopted some changes in terminology to describe exercise inadequacies. The revised terminology is reflected in this report. The different classes of exercise inadequacies are defined in Section 1.5 of this report. *Deficiencies* are exercise inadequacies which were previously identified as "Category A Deficiencies," *Areas Requiring Corrective Actions* are those previously identified as "Category B Deficiencies," and *Areas Recommended for Improvement* are those previously identified as "Areas for Improvement."

COMMONWEALTH OF MASSACHUSETTS OPERATIONS

The Commonwealth of Massachusetts operations for this exercise included the state emergency operations center (EOC), the emergency operations facility (EOF), the Area II EOC, two radiological field monitoring teams, the Taunton reception center, ambulance and hospital emergency medical services, the state police warning point, and the media center. The performance of the Commonwealth of Massachusetts was characterized by improved performance over past exercises and the correction of many earlier inadequacies.

The state EOC is an outstanding facility ideally suited for extended emergency operations. The EOC was promptly activated, but staffing of the EOC was not fully demonstrated due to prepositioning of most key staff members. Emergency operations management at the state EOC was good. The State Civil Defense Director provided excellent leadership and involved key staff members in decision making. The EOC staff was competent and well trained. Communications at the state EOC were very good. However, very little technical information regarding accident assessment was provided to the EOC by the EOF staff. Because of their lack of data, the EOC staff did not have

a good technical basis for the actions they took. Public alerting, notification and instruction were adequately coordinated from the state EOC. Although there was not sufficient time at the end of the exercise for a full demonstration of recovery and re-entry operations, the Director and his staff demonstrated that they were knowledgeable of the process and potential problems and were prepared to cope with the situation.

The on-site EOF is housed in three trailers which tended to become crowded, hot and noisy. A new EOF is presently under construction. Activation and staffing of the EOF was prompt, although players were prepositioned in the area of the plant. Communications systems were excellent at the EOF. Accident assessment and determination of off-site consequences to the public health was satisfactory at the EOF, and protective actions recommended were carefully considered. The technical aspects of dose and dose rate projections were primarily carried out by the utility staff. More time should have been spent by the state personnel at the EOF in critically reviewing the dose assessments and protective action recommendations made by the utility. The flow of technical information from the EOF to the state EOC also needs improvement.

The facilities at the Area II EOC were adequate. EOC activation and staff mobilization were adequate, although some players were prepositioned. Command and control of the emergency operations were very well demonstrated. Leadership by the Director, and staff teamwork were evident. Message flow within the Area II EOC was very good. The coordination of information with the state and local EOCs was also adequately demonstrated. Communications systems functioned effectively.

Both radiological field monitoring teams mobilized for this exercise had all appropriate equipment. The technical operations of the NIAT-3 team were excellent, however, a problem with determining monitoring point locations by the NIAT-7 team was observed. Communications between the field teams and the EOF were adequate with the exception of temporary loss of contact with the EOF by both teams on several occasions. Radiological exposure control equipment and procedures used by the field teams were adequate. Because of scenario limitations, however, there was not sufficient time to fully test the capabilities of the field monitoring teams.

The Taunton reception center was activated for this exercise. Much space is available but is ordinarily not maintained in usable condition. Although a fire truck and three men were present to wash down cars, there were no trained people on site to perform radiological monitoring. The ability to perform radiological monitoring at the reception center was, therefore, not demonstrated. There is also some question as to whether the existing local agreement to have the Red Cross do the registration at the reception center is compatible with the overall State/Red Cross agreement.

The emergency medical services of the Metro Ambulance Service and the Jordan Hospital were evaluated for this exercise. The ambulance crew did an excellent job and demonstrated themselves to be very patient and professional under difficult conditions. However, there is a need for better communications on the ambulance. The hospital staff at Jordan Hospital did a creditable job of handling the contaminated patient; however, the communications capabilities could be improved.

The State Police warning point at Middleborough had good facilities, and emergency operation management was effective. Coordination between staff members was good. However, the possibility exists that the radio dispatcher could not handle both routine and radiological emergency calls in a timely manner in a real emergency. Some communications problems also continue to exist in the notification and verification of messages between the State Police warning point and the local EOCs. Adequate resources and equipment are available to handle possible traffic control requirements. Staff demonstrated that they are aware of potential traffic problems, manpower requirements, evacuation routes, relocation/decontamination center locations, and dosimetry requirements.

The Media Center had adequate facilities. Activation and staffing of the media center was good, although actual notification and mobilization of PIOs was not demonstrated. The communications systems were generally good, although some improvements could be made. The public information functions at the media center were generally performed in an excellent manner. Media briefings were generally thorough, accurate and clear. Coordination and information exchange between PIOs was excellent.

LOCAL OPERATIONS

Each of the five communities within the 10-mile emergency planning zone (EPZ) participated in the radiological emergency exercise. Operating facilities and resources were adequate at all local EOCs except for Carver. However, many of the EOCs lacked adequate population distribution information on local residents and seasonal transients. Key EOC staff received initial notification through their local police and/or fire dispatcher. Pagers and telephones were utilized to notify EOC staff. EOCs were completely activated at the Site Area Emergency although key officials and some staff were present in their respective EOC facilities prior to this notification. Staffing was efficiently completed in all EOCs. However, at Carver the EOC director and his staff did not respond and the EOC was not formally activated.

Communication equipment functioned effectively at each EOC. The primary system was the telephone and backup was provided by the RACES radio system.

Fixed sirens and route alerting teams were dispatched by the local EOCs (except Carver) to notify the public. Evacuation was simulated. The local civil defense directors discussed evacuation procedures and the logistics required for traffic and access control.

All EOCs had an adequate supply of radiological exposure control equipment. Except for Carver, EOC staff demonstrated that acceptable procedures are in place to distribute dosimetry, maintain records, and control individual dose and decontamination. Recovery and reentry procedures were not performed although these procedures were available in all municipal plans and were discussed at some EOCs.

The scenario was generally adequate to test the emergency response capabilities of participating EOCs. The scenario provided a sufficient opportunity to correct inadequacies reported from the previous exercises.

1 INTRODUCTION

1.1 EXERCISE BACKGROUND

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

FEMA's immediate basic responsibilities in Fixed Nuclear Facility Radiological Emergency Planning include:

- Taking the lead in off-site emergency planning and in the review and evaluation of state and local government emergency plans for adequacy.
- Determining whether the plans can be implemented on the basis of observation and evaluation of exercises conducted by emergency-response jurisdictions.
- Coordinating the activities of volunteer organizations and other involved federal agencies:
 - Nuclear Regulatory Commission (NRC)
 - U.S. Environmental Protection Agency (EPA)
 - U.S. Department of Agriculture (USDA)
 - U.S. Food and Drug Administration (FDA)
 - U.S. Department of Transportation (DOT)
 - U.S. Coast Guard (USCG)
 - American Red Cross (ARC)

Formal submission of emergency plans to the regional assistance committee (RAC) by the state and relevant local jurisdictions was followed by the first joint radiological emergency response exercises on March 3, 1982. Additional exercises were conducted on June 29, 1983 and September 5, 1985. This report presents findings for the September 5, 1985 exercise. The purpose of these exercises was to assess the capability of the state and local emergency preparedness organizations to protect the public in the event of an accident at the Pilgrim Nuclear Power Station.

An observer team consisting of FEMA Region I personnel, regional assistance committee members, and supporting personnel from federal and state agencies evaluated the September 5, 1985 exercise. A total of 22 observers trained in radiological emergency response were assigned to evaluate state, local, and field activities.

Following the exercise, a closed critique of the exercise for the participating state officials was held at 1:00 p.m. on Friday, September 6, 1985, at Memorial Hall in Plymouth Mass. This critique was followed at 2:00 p.m. with an open meeting for the public and local participants.

The findings presented in this report are the results of a review of the federal observers' evaluations and were reviewed by the RAC chairman for FEMA Region I. Since the FEMA Region I director is responsible for certifying to the FEMA associate director of State and Local Programs and Support that any significant deficiencies and areas requiring corrective action observed during the exercise have been corrected, and that such corrections have been incorporated into state and local plans as appropriate, FEMA suggests that the State complete the schedule for corrections of the significant deficiencies and areas requiring corrective actions included as Section 3 of this report.

1.2 FEDERAL OBSERVERS

Twenty-two federal observers participated in evaluating this exercise. These individuals, their agencies, and their observation location(s) are given below.

<u>Observer</u>	<u>Agency</u>	<u>Location</u>
Edward A. Thomas, RAC Chairman	FEMA ^a	General Observations
Lawrence Robertson, Team Leader	FEMA	State EOC
Jack Dolan	FEMA	State EOC
David Rohrer	NRC ^b	State EOC (Radiological Health)
Robert Rospenda	ANL ^c	State EOC
Thomas Baldwin, Team Leader	ANL	Area II EOC
Bruce Swiren, Team Leader	FEMA	EOF
Frederick Oleson	FEMA	EOF
Warren Church	FDA ^d	EOF
Neil Gaeta, Team Leader	FDA	Field Monitoring Teams and Radiological Health Laboratory
Michael Leal	FDA	Field Monitoring
James Roesler	BNL ^e	Field Monitoring
Kenneth Horak, Team Leader	FEMA	Media Center (Plymouth Memorial Hall)
William Gasper, Team Leader	ANL	State Warning Point (Middleborough)
Sue Ann Curtis, Team Leader	ANL	Plymouth EOC
Michael Goetz	FEMA	Carver EOC
Deirdre Donahue	FEMA	Carver EOC
Dorothy Nevitt	USDA ^f	Duxbury EOC
Elizabeth Dionne	FEMA	Marshfield EOC
Gary Kaszynski	ANL	Kingston EOC
John Stepp		Emergency Medical Services (Ambulance and Jordan Hospital)
Donald Connors	ARC ^g	Taunton Reception Center

^aFEMA: Federal Emergency Management Agency

^bNRC: Nuclear Regulatory Commission

^cANL: Argonne National Laboratory

^dFDA: U.S. Food and Drug Administration

^eBNL: Brookhaven National Laboratory

^fUSDA: U.S. Department of Agriculture

^gARC: American Red Cross

1.3 EXERCISE OBJECTIVES

The overall objectives of the state and local communities were to demonstrate that their emergency-response plans, operations, and capability for mobilizing and coordinating necessary resources are adequate to cope with an emergency at the Pilgrim Nuclear Power Station (PNPS).

The objectives for the September 5, 1985 exercise were as follows:

1. Demonstrate ability to mobilize staff and activate facilities promptly. (State EOC, Area II EOC, EOF, Media Center, EOCs for the five towns within the plume exposure EPZ and one [Taunton] reception center will be activated.)
2. Demonstrate ability to fully staff facilities and maintain staffing around the clock. (Staffing backup will be indicated by roster backup. Actual shift changes will not be undertaken.)
3. Demonstrate ability to make decisions and to coordinate emergency activities. (These objectives will be exercised at state and local EOCs.)
4. Demonstrate adequacy of facilities and displays to support emergency operations. (Facilities and displays will be exercised at all locations activated [see objective 1].)
5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel. (Communications among all emergency facilities and for field teams will be exercised.)
6. Demonstrate ability to mobilize and deploy field monitoring teams in a timely fashion. (Two field monitoring teams will be exercised.)
7. Demonstrate appropriate equipment and procedures for determining ambient radiation levels. (Both field teams will be appropriately equipped.)
8. Demonstrate appropriate equipment and procedures for measurement of airborne radioiodine concentrations as low as 10^{-7} uCi/cc in the presence of noble gases. (Field teams will be exercised in this regard; no laboratory work is planned. Radlabs have been satisfactorily exercised in past events.)
9. Demonstrate appropriate equipment and procedures for collection and transport of samples of soil, vegetation, snow, water, and milk. (Field teams will be exercised against this objective; laboratories will not.)

11. Demonstrate ability to project dosage to the public via plume exposure, based on plant and field data, and to determine appropriate protective measures, based on PAG's, available shelter, evacuation time estimates, and all other appropriate factors. (This capability will be demonstrated by State staff at the EOF.)
14. Demonstrate ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes. (Alerting will be exercised up to and including EBS testing. No siren activation is planned during the exercise, however.)
15. Demonstrate ability to formulate and distribute appropriate instructions to the public, in a timely fashion. (Instructions to the public will be demonstrated at the state EOC.)
16. Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the plume EPZ. (Ability to organize and implement an evacuation will be demonstrated. No physical movement of evacuees is planned.)
17. Demonstrate the organizational ability and resources necessary to deal with impediments to evacuation, as inclement weather or traffic obstructions. (Abilities consistent with the types of impediments expected in September will be exercised [i.e., no winter impediments are foreseen].)
21. Demonstrate ability to continuously monitor and control emergency worker exposure. (This capability will be exercised from the EOF and from local EOCs. Also by field teams.)
22. Demonstrate the ability to make the decision, based on pre-determined criteria, whether to issue KI to emergency workers and/or the general population. (EOF personnel will demonstrate this capability. Massachusetts plans do not call for KI for the public.)
25. Demonstrate ability to brief the media in a clear, accurate and timely manner. (This capability will be exercised at the media center. If press appear, a briefing will be provided at the state EOC as well.)
26. Demonstrate ability to provide advance coordination of information released. (Coordination at media center and with state EOC and EOF.)
27. Demonstrate ability to establish and operate rumor control in a coordinated fashion. (Rumor control capability among media center, state EOC and EOF will be exercised.)

28. Demonstrate adequacy of procedures for registration and radiological monitoring of evacuees. (This objective will be exercised at a single reception center.)
31. Demonstrate adequacy of ambulance facilities and procedures for handling contaminated individuals. (Use of ambulance in transporting injured and contaminated worker from Pilgrim plant to Jordan Hospital will be demonstrated.)
32. Demonstrate adequacy of hospital facilities and procedures for handling contaminated individuals. (Facilities and procedures at Jordan Hospital will be exercised.)
35. Demonstrate ability to estimate total population exposure. (This capability will be tested at the EOF.)
36. Demonstrate ability to determine and implement appropriate measures for controlled recovery and reentry. (This capability will be tested at the state and Area II EOCs.)

1.4 EXERCISE SCENARIO

An operator was conducting a routine operability surveillance at about 8:00 a.m. During this surveillance, the operator was sprayed and burned by steam and hot water escaping from the gland seal condenser due to a blown gasket. The failure of the exhaust line also resulted in a direct path from the torus to the torus room atmosphere, although this was not yet known by the plant operators. At about 8:05 a.m., the injured and contaminated operator stumbled away from the accident location. When he was discovered, an Unusual Event was declared since this was a contaminated injury requiring off-site medical treatment.

The drywell floor sump was routinely pumped down at about 8:30 a.m. The drywell floor sump high level alarm annunciated in the radwaste control room at about 8:45 a.m. and was reported to the operating supervisor by the radwaste operator. Since it had been only 20 minutes since the last pumpdown of the sump, the alarm indicated reactor coolant system leakage in excess of 50 gallons per minute for this period which, therefore, triggered an Alert declaration a short time after.

At about 8:53 a.m., the RBCCW head tank water level fell and the volume of the RBCCW loop B was reduced to the point where adequate cooling for the drywell coolers could not be provided. This caused the drywell to overheat. As a result of this, and in accordance with procedures, the operator scrambled the reactor at about 8:54 a.m. Reactor relief valves were manually operated to control reactor pressure after the scram and isolation. However, unknown to the operator, the use of the relief valves allowed primary steam to pass into the torus and out through an exhaust line into the torus room and then to the reactor building atmosphere. At about 9:15 a.m. increasing airborne radiation levels, from leakage through the broken exhaust line, were indicated by the air

particulate monitor at the drywell entrance. The main stack normal range monitor also indicated increasing effluent radiation levels.

Due to airborne radiation levels, the reactor building was evacuated at about 9:30 a.m. based on a recommendation from Health Physics personnel. The reactor building crane operator evacuated from the refuel floor leaving the DOT shipping cask supported by the reactor building overhead crane. The cask was abandoned over an area of the refuel floor near the edge of the spent fuel pool which is not capable of withstanding a heavy object drop. At about 10:30 a.m. a very loud, resounding, heavy noise was heard throughout the reactor and administration buildings. This was the result of the DOT cask falling on the edge of the fuel pool when the supporting cables failed. Unknown to the Watch Engineer, the cask severely damaged the fuel pool structural concrete and liner and some of the recently irradiated fuel. At about 10:31 a.m. four refuel floor vent exhaust monitors went into alarm indicating high releases from the refuel floor ventilation system. This triggered declaration of a Site Area Emergency. When the DOT cask fell on the north edge of the fuel pool, shrapnel and the concussion damaged the cladding of some of the freshly irradiation fuel in the pool, releasing a fraction of the contained gap activity to the fuel pool water and subsequently to the refuel floor atmosphere. Unknown to the operator, the impact of the cask also caused substantial damage to the fuel pool structural concrete. The liner was severely torn at a weld seam and buckled into the pool. There was still sufficient intact concrete to prevent leakage.

At about 11:30 a.m. the fuel pool water level began to drop at the rate of several feet per minute. Latent structural damage to the fuel pool resulted in a large crack in the concrete in the side of the fuel pool which suddenly propagated and opened a hole, and the fuel pool liner failed catastrophically, resulting in a large amount of water leakage. The upper two feet of fuel became uncovered at about 11:35 a.m. before the leakage abated. Direct radiation levels on the refueling floor and near the hole were lethal due to the exposed fuel. The location of the hole was such that only the uppermost two feet of the active fuel bundles were uncovered. The uncovered sections of the fuel were heating up and would begin to perforate and melt in about 5 hours if supplemental cooling was not provided. A General Emergency was declared based on projected off-site dose consequences.

At about 12:45 p.m. time was compressed during the exercise so that fuel melting began sooner than the laws of physics would allow. High radiation levels existed throughout the reactor building and were indicated on the main stack effluent monitors. A General Emergency was declared based on off-site projected whole body doses and main stack high range effluent monitor reading. Significant airborne releases to the refuel floor atmosphere, standby gas treatment system, and the environment occurred. Radiation levels on the refuel floor and near the hole in the fuel pool were lethal due to the uncovered fuel. Scatter of gamma radiation from the walls of the pool caused the entire refuel floor to be inaccessible.

At about 2:30 p.m. the fuel perforated and partially melted down to the residual water level in the fuel pool. Damage ceased, releases were decreasing rapidly, airborne levels in the reactor building were decreasing to the point where reentry was possible. The General Emergency ended.

1.5 EVALUATION CRITERIA

The exercise evaluations presented in Section 2 are based on applicable planning standards and evaluation criteria set forth in Section II of NUREG-0654, FEMA-REP-1, Rev. 1 (Nov. 1980). Following the overview narrative for each jurisdiction or activity, deficiencies, areas requiring corrective actions, and areas recommended for improvement are presented with accompanying recommendations.

Deficiencies are demonstrated and observed inadequacies that would cause a finding that off-site emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of a nuclear power facility in the event of radiological emergency. Because of the potential impact of deficiencies on emergency preparedness, they are required to be promptly corrected through appropriate remedial actions including remedial exercises, drills or other actions. Deficiencies are inadequacies that lead to a negative finding. A negative finding must be based on at least one deficiency. Four (4) deficiencies were observed in the September 5, 1985 exercise.

Areas requiring corrective actions are demonstrated and observed inadequacies of state and local government performance, and although their correction is required during the next scheduled biennial exercise, they are not considered, by themselves, to adversely impact public health and safety.

Areas recommended for improvement also are listed as appropriate for each jurisdiction or activity. These are problem areas observed during the exercise that are not considered to adversely impact public health and safety. While not required, correction of these would enhance an organization's level of emergency preparedness.

It should be noted that the above definitions reflect recently adopted changes in terminology by FEMA. *Deficiencies* were previously identified as "Category A Deficiencies," *Areas Requiring Corrective Actions* were previously identified as "Category B Deficiencies," and *Areas Recommended for Improvement* were previously identified as "Areas for Improvement."

TABLE I Selected Events and Observed Times

Event	Scheduled	State EOC	EOF	Area 11 EOC	Media Center	State Warning Point	Plymouth EOC	Duxbury EOC	Carver EOC	Kingston EOC	Marshfield EOC	Taunton EOC
Unusual Event	8:15 a.m.	8:30 a.m.	8:38 a.m.	8:24 a.m.	8:32 a.m.	8:20 a.m.	8:25 a.m.	8:25 a.m.	8:22 a.m.	8:18 a.m.	8:20 a.m.	8:46 a.m.
Alert	8:56 a.m.	9:06 a.m.	9:01 a.m.	9:02 a.m.	9:07 a.m.	8:59 a.m.	9:07 a.m.	9:04 a.m.	9:00 a.m.	9:22 a.m.	9:01 a.m.	9:14 a.m.
EOC Activated	-	9:06 a.m.	-	8:00 a.m.	-	-	10:45 a.m.	10:43 a.m.	-	9:22 a.m.	7:30 a.m.	8:45 a.m.
EOC Operational	-	9:10 a.m.	9:25 a.m.	8:00 a.m.	-	-	11:00 a.m.	10:55 a.m.	-	10:00 a.m.	7:30 a.m.	9:00 a.m.
Site Area Emergency	10:42 a.m.	10:35 a.m.	10:34 a.m.	10:35 a.m.	10:38 a.m.	10:39 a.m.	10:39 a.m.	10:43 a.m.	10:38 a.m.	10:41 a.m.	10:42 a.m.	10:42 a.m.
Sirens Sounded (Simulated)	-	-	-	12:20 p.m.	-	-	12:18 p.m.	12:40 p.m. 2:42 p.m.	-	12:38 p.m.	12:38 p.m.	-
General Emergency	12:20 p.m.	11:39 a.m.	11:35 a.m.	11:40 a.m.	11:37 a.m.	11:41 a.m.	11:41 a.m.	11:44 a.m.	11:41 a.m.	11:46 a.m.	12:01 p.m.	-
State of Emergency Declared	-	10:45 a.m.	10:51 a.m.	10:46 a.m.	10:50 a.m.	-	11:00 a.m.	10:55 a.m.	-	10:59 a.m.	10:58 a.m.	10:59 a.m.
Downgrade to Alert	3:00 p.m.	3:39 p.m.	3:30 p.m.	3:27 p.m.	3:31 p.m.	-	3:40 p.m.	3:50 p.m.	3:48 p.m.	3:52 p.m.	3:50 p.m.	-
Termination of Exercise	3:15 p.m.	3:40 p.m.	3:34 p.m.	3:53 p.m.	-	3:40 p.m.	3:40 p.m.	4:00 p.m.	3:56 p.m.	4:00 p.m.	4:10 p.m.	-
EBS Messages	-	10:48 a.m. 12:07 p.m. **	-	-	11:52 a.m. 2:15 p.m.	-	-	-	-	12:38 p.m.	-	-
Shelter Order	-	12:00 p.m.	10:43 a.m. 11:40 a.m. 1:20 p.m.*	11:50 a.m. 2:20 p.m.	11:52 a.m.	-	12:00 p.m. 2:30 p.m.	12:40 p.m.	12:33 p.m. 2:31 p.m.	12:17 p.m.	12:35 p.m.	12:34 p.m.
Evacuation Order	-	2:10 p.m.	1:35 p.m.*	2:20 p.m.	2:12 p.m.	-	2:30 p.m.	2:42 p.m.	-	2:38 p.m.	2:38 p.m.	3:36 p.m.

*Recommendation

**The 2:15 p.m. EBS message observed at the Media Center was not observed at the State EOC.

2 EXERCISE EVALUATIONS

2.1 MASSACHUSETTS STATE OPERATIONS

2.1.1 Emergency Operations Center (EOC)

The Commonwealth of Massachusetts EOC is located at the Massachusetts Civil Defense Agency and Office of Emergency Preparedness underground facility in Framingham, Massachusetts. This is an outstanding facility and is ideally suited for conducting emergency operations for an extended period. Although much supplemental space is available throughout the EOC building, most emergency operations are centralized in the operations room. The operations room is a large room with a tiered arrangement which provides good working space and excellent visibility of displays for all key staff members. Telephone communications are available for all staff members in this operations room.

The EOC is ideally suited for extended operations if they become necessary and has been used in the past for actual emergencies. The EOC has eating and sleeping facilities as well as sufficient lavatories and showers. Backup generating capability is present although it was not demonstrated for the exercise.

The operations room contained all required maps, displays, and status boards. All were prominently posted with the exception of population data by evacuation area. However, population data were available in the plan if needed for reference. Emergency action levels and meteorological data were posted. Several of the supplemental status boards did not have the first sheltering protective action recommendation posted until late in the exercise, however. Overall, the exercise objective on the adequacy of facilities and displays was effectively demonstrated.

According to the plan, the EOC is activated and staffed at the Alert emergency action level (EAL). However, most key staff members were prepositioned during the Unusual Event and the EOC was observed to be operational and staffed with key personnel by 9:10 a.m., almost immediately after the call notifying the civil defense (CD) director of the escalation to Alert which was received at 9:06 a.m. from the state police. Because of this prepositioning, the exercise objective on staff mobilization was not considered fully demonstrated. However, it should be noted that staff participation at the state EOC was excellent and all required personnel were present and all agencies were represented. The ability to maintain staffing around the clock was demonstrated by presentation of a roster showing staffing changes for three shifts, thereby satisfying an exercise objective.

The EOC activation procedure is put in motion by a call from the Pilgrim plant to the state police warning point. The state police then call the Massachusetts Civil Defense Agency (MCDA) and the Massachusetts Department of Public Health. These agencies then notify other individuals and agencies using a call out list.

Emergency operations management at the state EOC was good. The state civil defense director was clearly in charge, conducting frequent informative briefings for the EOC staff. He also consulted with staff members in formulating protective actions and involved them in the decision-making process as necessary. The staff appeared to be competent and well trained. They were able to operate independently, paid close attention to detail in implementing decisions, and planned for contingencies. Message handling at the EOC was efficient. Message logs were maintained by staff members and copies of messages were distributed to key staff members. Verification of key messages at the EOC was demonstrated by requiring the receipt of hard-copy messages on the facsimile machine before acting on the content of a message. This verification process corrects a previous area requiring corrective action (#11). Since the transmission of hard-copy messages was standard operating procedure and was done quickly, this procedure was demonstrated to be workable and effective.

Overall, the communications at the state EOC were very good. The exercise objective to demonstrate the ability to communicate with all appropriate locations was met and the previous area requiring corrective action #9 is considered corrected. Commercial telephone lines were used for most of the routine communications at the EOC. Each key agency had its own telephone available in the operations room. Although these telephones generally worked well, occasional problems were observed when minor delays occurred in placing a call or when staff members had difficulty with clear voice communications over the telephones. No major delays were observed, however. An extensive radio and teletype communication system was also available at the EOC if needed. These systems are located in a communications area outside of the operations room, and consist of numerous radio nets and hard-copy teletypes including statewide civil defense, NAWAS and RACES. These provide ample backup if needed. No major delays were observed in communicating with any location or individual due to equipment problems. Telefax was used for hard-copy transmission between the EOC and the emergency operations facility (EOF). This key link operated quickly and efficiently. Telefax was also used for hard-copy transmissions to and from the media center and also worked effectively.

Accident assessment and determination of protective action recommendations were performed at the EOF and transmitted to the state EOC by the Massachusetts Department of Public Health (MDPH) personnel at the EOF. The personnel at the state EOC did a commendable job with the very limited technical data available to them. Because of this lack of data, the EOC staff did not have a good technical basis for the actions they took. Although the information flow between the state EOC, EOF and Area II EOC was timely and improved over past exercises, there was very limited technical information coming to the EOC from the EOF regarding plant conditions and the reasons for emergency action levels. Therefore, a previous area requiring corrective action (#14) remains uncorrected. However, meteorological information was transmitted from the EOF to the EOC in a timely manner using the new form developed by MDPH and the licensee. This corrects a previous area requiring corrective action (#47). The EOC staff also assumed incorrectly that the basic technical work was being done by the DPH staff at the EOF. However, as described in the EOF section of this report, the DPH staff depended entirely on dose assessments and protective action recommendations developed by the licensee. The lack of technical information and the basis for decisions can be

corrected by a more formalized process of gathering and transmitting the necessary data from the EOF to the EOC. In addition, there was no technical representative from the licensee in the EOC who could have provided the necessary briefings to EOC personnel on plant conditions and the safety significance of these actual or projected conditions. This can be easily remedied by the dispatch of such a person to the EOC by the licensee during a radiological emergency.

Public alerting, notification and instruction were adequate. Public instructional messages were prepared and transmitted over the Emergency Broadcast System (EBS) (simulated). Prescribed EBS messages were used to supply specific information on sheltering and evacuation, including how to do it and where to go. The simulated EBS messages were broadcast after sirens were sounded, allowing a brief interval between siren sounding and message broadcast, so that citizens could turn on radios or televisions. This corrects a previous area requiring corrective action (#15). EBS evacuation messages were sent directly to the EBS stations from the state EOC. Operational evacuation instructions were transmitted promptly from the state EOC to the Area II EOC and then to the local EOCs using established command and control communications systems. New emergency planning zone EPZ maps were used at each EOC and there was no difficulty reported in translating EPZ sector information into local landmark information. These observations correct a previous area requiring corrective action (#48). Discussions were held at the EOC concerning the use of loud speakers and emergency vehicles to give instructions to the transient population, especially along the beaches. The beach populations were considered in the development of protective actions. EBS messages were prepared for use when the emergency classifications were changed and when changes in the emergency situation resulted in a need to provide the public with additional information. The rumor control telephone number was activated during the exercise, meeting one of the exercise objectives.

EOC personnel demonstrated that they were knowledgeable of the implications of protective evacuation and the inherent problems, such as traffic control and control of access to the evacuated areas. A special Civil Air Patrol (CAP) flyover of the area to be evacuated was performed to identify any potential traffic congestion points based on actual traffic conditions on the day of the exercise. Videotape of evacuation routes was made during this flyover and was shown to the EOC staff after completion of the flyover. As part of the evacuation process, consideration was also given by the EOC staff to institutionalized persons, ships and boats in the area. At the exercise the U.S. Coast Guard operated in accordance with its new memorandum of understanding with the Commonwealth of Massachusetts and was not required to send helicopters or boats into the plume area to alert the boating public. The establishment of this memorandum of understanding corrects a previous area requiring corrective action (#49). Schools were also considered during the evacuation process. At 11:16 a.m. schools were directed to implement the prerelease program. Overall there was good preplanning and distribution of resources to support any needed evacuation. There were also adequate messages over EBS to inform and direct the population in the affected areas.

Although sufficient time was not available at the end of the exercise for a full demonstration of recovery and reentry activities, the civil defense director met with key

staff members near the end of the exercise to discuss recovery and reentry. He discussed the recovery and reentry situation in general and asked the staff members what specific actions their agencies would be involved with and what specific problems would have to be addressed. Even though the scenario did not allow a full demonstration of recovery and reentry and for a verification that previous areas requiring corrective action (#3, #21) had been corrected, the civil defense director and his staff demonstrated that they were knowledgeable of the process and potential problems and were prepared to cope with the situation.

Deficiencies

None.

Areas Requiring Corrective Actions

1. **Description:** There was very limited technical information coming to the State EOC from the EOF regarding plant conditions and the reasons for emergency action levels, which also limited information flow to the Area II and local EOC's (FEMA-REP-1, Rev. 1, II, I.10, F.1.d).

Recommendation: Coordination between the state EOC and EOF should be improved to ensure that sufficient data are gathered at the EOF and transmitted to the State EOC to form a basis for sound decision making, and subsequently transmitted to the Area II and local EOC's.

2. **Description:** Because of scenario limitations, a full demonstration of recovery and reentry activities was not conducted (FEMA-REP-1, Rev. 1, II, M.1, M.3, M.4).

Recommendation: Recovery and reentry should be fully tested in a future exercise.

Areas Recommended for Improvement

1. **Description:** The supplemental status boards in the state EOC operations room did not have the first sheltering protective action recommendation posted until late in the exercise.

Recommendation: All status boards on display should be updated with the current protective action recommendation in a timely manner in order to prevent misinterpretation by staff members in the EOC.

2. **Description:** Most key staff members were prepositioned at the state EOC prior to the Alert EAL when the EOC is planned to be activated and staffed.

Recommendation: In order to fully demonstrate activation and staffing procedures, players should either not be prepositioned or should not participate in EOC activities for a reasonable period of time in order to simulate travel time to the EOC.

3. **Description:** Occasional problems were observed with the telephone equipment in the state EOC operations room, resulting in minor delays.

Recommendation: Telephone equipment and systems should be periodically checked and repaired or replaced as needed in order to prevent communications delays during an emergency situation.

4. **Description:** There was no technical representative from the licensee in the EOC who could have provided briefings to EOC personnel on plant conditions and the safety significance of these actual or projected conditions.

Recommendation: During a radiological emergency the licensee should dispatch a technical representative to the state EOC.

2.1.2 Emergency Operations Facility (EOF)

The EOF facilities are unchanged from the last exercise. The on-site EOF is housed in three trailers which tended to become crowded, hot and noisy. In spite of the less than ideal conditions, the EOF facility was able to adequately support the emergency operations, and the cooperation between utility and state representatives was excellent. The utility has started the construction of a more adequate EOF several miles from the reactor site. The displays at the EOF were all adequate to support EOF informational functions. However, many maps were not oriented to true north, although they were labeled to indicate this. The development of new maps, oriented vertical north, was not complete, continuing part of an earlier area requiring corrective action (#50).

A full complement of staff was present at the EOF. Staffing was accomplished quickly although some of the players were prepositioned in the area of the plant. The EOF was staffed by three representatives from the MCDA, two from the MDPH, and field monitoring teams from MDPH, assisted by two individuals from FDA. The capability for 24-hour staffing of the EOF was demonstrated by presentation of a roster and by a simulated shift change.

Communications systems were excellent at the EOF. Numerous telephone lines were available as the primary means of communication. Backup communications systems were also available and were adequate for reliably reaching all sites. There was a dedicated telephone line to both NRC Region I and to the Plymouth EOC. There were also Massachusetts Civil Defense radios, state police radios, local Plymouth police radio, marine band radio for reaching the Coast Guard, and RACES radio. This radio equipment was staffed by the utility simultaneously in the communications trailer which was used by state personnel, and the assessment trailer which was used by the utility staff. A previous area requiring corrective action (#9), which noted some communications problems among the state EOC, the EOF, and the Area II EOC and which recommended a dedicated telephone line between the state EOC and EOF, remains uncorrected. Although there were no communications problems observed at this year's exercise, a dedicated telephone line has not been installed. The procedure in use consists of dialing up the state EOC on a commercial line and then keeping the line open by continuously staffing the line.

Internal communications at the EOF were handled adequately by frequent oral briefings. The internal communications were sometimes hindered, however, by the crowded and noisy conditions at the EOF.

Although the media center is the primary location for information exchange, there was a public information function staffed by the utility in the communications trailer in the EOF. The role played by the utility public information officer (PIO) at the EOF was to coordinate the accuracy of state and utility information flowing from the EOF to the media center, and circulating hard copy of all news releases to state and utility EOF personnel for review before being released by the media center.

In spite of the crowded and noisy conditions in the EOF, the assessment of off-site consequences to the public health was satisfactory and the protective actions recommended were carefully considered. Both sheltering and evacuation were advised by

the EOF players for state and local implementation. Sheltering during the early phase of the exercise was precautionary and selective; perhaps overly conservative in terms of the protective action guides (PAGs). Later, when predictable fuel damage would allow up to 5 hours advance notice for evacuation, this was advised out to a full 5 miles with sheltering out to a full 10 miles.

The technical aspects of dose and dose rate projections were primarily carried out by the utility staff. The state DPH staff were prepared and qualified to do nomographic estimates for populated areas but the unusual nature of the scenario required engineering skills as well as health physics consideration.

Remarkable cooperation was shown by the utility's technical staff in briefing the state DPH staff on the reasons for the utility's recommended protective actions off-site. However, no attempt was made to preempt the state DPH and Civil Defense staff in making the final decisions for either sheltering or evacuation. In the early stages of this exercise minor releases resulted in sheltering recommendations for limited distances. Preparation of the messages describing plant conditions requiring these recommendations were somewhat delayed by the crowded conditions at the assessment trailer and by procedural problems.

In general, the state personnel at the EOF did not inquire as to the assumptions that were used by the utility for the dose projections and protective action recommendations. More time should have been spent by the state in critically reviewing the dose assessments and protective action recommendations made by the utility. Information flow from the EOF to the state EOC requires improvement. Although state DPH staff at the EOF were included in detailed briefings by the utility as to plant status and the radiological significance of the plant status, the DPH staff at the EOF did not pass on this detailed information to the EOC. Because of this, the EOC staff had very limited technical information to use as a basis for decision making. Additional training in the assessment of nuclear power plant accidents is recommended for state staff located at the EOF. Another aspect of information flow from the EOF requiring improvement is the use of proper forms. The Nuclear Power Plant Accident Communication Form which was extensively used is not appropriate for all plant information to be conveyed to the state EOC. In addition, much information was transmitted from the EOF to the state EOC over the telephone from handwritten notes. Because of these observations, two previous areas requiring corrective action (#14 and #50) remain uncorrected. However, the transmission of meteorological information was observed to be timely and improved from the previous exercise, thereby correcting an earlier area requiring corrective action (#47).

The exercise scenario was not very realistic and was at times a source of confusion for the players. One of the problems was the lack of a definitive weather forecast. Another problem was that the scenario time during which the plume activity was significant was too short to adequately exercise the state field monitoring teams. During the early phase of the exercise the minor releases were insufficient for the deployment of the off-site monitoring teams. However, it did provide for the team members and DPH to assemble and check out their instrumentation and procedures. FEMA observers considered these teams to be well equipped and trained. However, due to the unique nature of the scenario which delayed significant releases until late in the play, only one team had a opportunity to detect any radiation with their instrumentation.

The scenario was designed to create an anticipated release of large quantities of fission products because of spent fuel damage within the time frame of the exercise. Not all of the control data were adjusted accordingly nor was the persistence of wind direction (exercise control) in accordance with last-minute changes in the weather forecasts.

Deficiencies

None.

Areas Requiring Corrective Actions

1. **Description:** Dose projections and protective action recommendations were done by the utility at the EOF. The state personnel at the EOF did not perform independent analysis and did not inquire as to the assumptions that were used by the utility in their analysis (FEMA-REP-1, Rev. 1, II, I.10).

Recommendation: State personnel at the EOF should either conduct independent analysis or should spend more time in critically reviewing the dose assessments and protective action recommendations made by the utility.

2. **Description:** Although the state DPH staff at the EOF were included in detailed briefings by the utility as to plant status and the radiological significance of the plant status, the DPH staff did not pass on this detailed information to the state EOC. Because of this, the EOC staff had very limited technical information to use as a basis for decision making (FEMA-REP-1, Rev. 1, II, I.10).

Recommendation: Additional training in the assessment of nuclear power plant accidents is recommended for state staff located at the EOF. Responsibility should be assigned to DPH or utility staff at the EOF for preparing plant status updates and meteorological data on standard forms as well as written recommendations and reasons for protective actions.

Areas Recommended for Improvement

1. **Description:** Some of the map displays in the EOF are not oriented vertical north. Although this is noted on the maps, it can still potentially cause misunderstandings on geographic sectors.

Recommendation: New maps should be developed which are oriented vertical north.

2. **Description:** EOF players were prepositioned in the area of the plant prior to the start of the exercise.

Recommendation: In order to fully demonstrate EOF activation and staffing in a future exercise, personnel should not be prepositioned.

3. **Description:** Internal communications at the EOF were sometimes hindered by the crowded and noisy conditions at the EOF.

Recommendation: The ability to control noise at the EOF should be demonstrated in a future exercise.

4. **Description:** Information flow procedures from the EOF to the state EOC can be improved. In some cases information was passed on over the telephone from handwritten notes. In other cases, although the Nuclear Power Plant Accident Communication Form was used, this form is not appropriate for all plant information to be conveyed to the state EOC.

Recommendation: All communications between the EOF and the state EOC should be properly logged and documented, and the appropriate documentation forms should be used. Redesign of the existing forms is recommended.

5. **Description:** The exercise scenario was not very realistic and did not provide the opportunity to adequately exercise all of the state field monitoring teams.

Recommendation: Future scenarios should be designed to allow the full demonstration of field monitoring teams' capabilities.

2.1.3 Area II EOC

The Area II EOC is located in the basement of the Massachusetts Civil Defense Agency (MCDA) Area II office building on the grounds of the state prison in Bridgewater, Massachusetts. As demonstrated in previous exercises, the facilities at this EOC were adequate to carry out the Area II responsibilities for communication with local EOCs and the provision of state assistance as requested by local authorities. Extended 24-hour operations could be sustained at the EOC. Backup emergency power for communications was available and demonstrated. Status boards showing emergency classification levels with times each level was declared, activated reception centers, school closings and activated traffic control points were maintained throughout the exercise. Maps showing the 10-mile EPZ, evacuation routes, access/traffic control points and population by sector were posted and utilized by staff as needed. A detailed map showing the locations of dairy farms, food processing plants and water supply sources was available for use in the alternate EOC which is located in the Area II building.

The objective to mobilize staff and promptly activate facilities was adequately demonstrated. Since the exercise took place during normal working hours, MCDA staff normally assigned to the Area II office reported to work as usual. Other agency representatives (i.e., American Red Cross, state department of public works, state police, Civil Air Patrol and RACES) were notified as provided in the Area II procedures. All agency representatives were in place at the EOC during the Alert ECL. It was observed, however, that some responders from other areas of the state who would have to travel some distance to the Area II EOC were prepositioned. While it is recognized that this prepositioning is necessary due to the compressed time frame of an exercise, prepositioned players should simulate their travel time by not actively participating for a reasonable period at the beginning of an exercise. Twenty-four hour staffing was adequately demonstrated by presentation of a roster which designated backup personnel for each emergency response position at the Area II EOC.

Command and control of emergency activities was very well demonstrated at the Area II EOC. The Area II director demonstrated very effective leadership and the training, knowledge and teamwork of the staff were evident throughout the exercise. This leadership and team work were especially evident when it became necessary for the director to request clarification of evolving protective action recommendations that were received from the state EOC. Periodic briefings were held to apprise the staff of the situation. Appropriate staff were involved in the timely implementation of communications to the local EOCs. Messages from the state EOC were developed, typed, logged and communicated to the local EOCs in a timely manner via telephone and RACES radio as a backup. The area for improvement in the receipt and logging of messages, identified at the previous exercise, has been corrected. Message flow within the Area II EOC was very good. All incoming and outgoing messages were logged and a journal of events was maintained throughout the exercise.

The coordination of information with the state and local EOCs was adequately demonstrated. A brief malfunction of the microwave telephone line to the state EOC was quickly compensated for with land line telephone until use of the microwave line was restored. Verification of notification of changes in the emergency classification through the "Menitor" notification system and protective actions recommended by officials at the

state EOC were communicated to the local EOCs by three telephone operators and two RACES operators. The NUREG-0654 system of emergency classification was used in all communications with the local EOCs (rather than the Massachusetts number system), thereby correcting a previous area requiring corrective action (#13). All of the necessary equipment and procedures to carry out these communications functioned effectively. The communications staff was well trained in message logging procedures. Complete logs of all communications with the state and local EOCs were available.

The Area II EOC does not have media responsibilities. All press inquiries would be referred to the media center. However, an area for media representatives could be set up in another part of the MCDA Area II building should it become necessary to shift the media center from its primary location at Memorial Hall in Plymouth, Massachusetts.

The Area II EOC had very limited involvement in the implementation of protective actions recommended by the state. Area II's primary responsibility is to communicate these recommendations to the local EOCs for implementation at the local level. Verification of the action to shelter population within five miles of the plant was received from the state EOC at approximately 12:08 p.m. and as requested, simulated sounding of the sirens by directors at the local EOCs was coordinated for 12:20 p.m. Verification of notification of the action to evacuate the town of Plymouth and shelter all other communities within the 10-mile EPZ at 2:20 p.m. was completed at approximately 2:38 p.m. Area II MCDA has developed a computerized data base of resources that are available to assist the local implementation of protective actions if requested. Use of this data base was demonstrated when an inquiry regarding possible assistance with ambulance resources was received from the town of Duxbury.

The radiological defense (RADEF) officer described in detail the radiological exposure control responsibilities at the Area II EOC. Direct-reading dosimeters were available in sufficient number and ranges (60 0-200 mR instruments and 100 0-20 R instruments). Chargers were available and emergency worker dosimetry instructions were available for distribution to workers who may be deployed to field assignments. Sixty thermo luminescent dosimeters (TLDs) were available and, according to the RADEF officer, procedures are in place for a utility representative to take these badges to a laboratory for analysis at the end of each day if necessary.

The ability to implement appropriate measures for controlled recovery and reentry was adequately demonstrated through a briefing by the Area II director and discussion with the EOC staff.

Deficiencies

None.

Areas Recommended for Improvement

1. **Description:** Some responders from other areas of the state who would have to travel some distance to the Area II EOC were

prepositioned for the Sept. 5, 1985, exercise (FEMA-REP-1, Rev. 1, II, E.2).

Recommendation: While the prepositioning of some state responders assigned to the Area II EOC is necessary due to the compressed time frame for an exercise, prepositioned players should simulate their travel time by not actively participating for a reasonable period of time at the beginning of an exercise.

training in respirator usage would be an asset in the radiological exposure control program for field monitoring team members.

The scenario was not sufficient to fully test the capabilities of the field monitoring teams. The activity involving the field monitoring teams was too compressed near the end of the exercise so that there was insufficient time to perform soil, vegetation, milk, and water sampling, thereby not meeting one of the exercise objectives. The opportunity for field team activity provided by the scenario was so short that the NIAT -7 team missed its only opportunity to take an air sample because of delays caused by a dead vehicle battery.

Radiological Health Laboratory. The demonstration of capabilities of the Radiological Health Laboratory was not included in the exercise objectives. However, an arrangement was made to discuss the capabilities and procedures of the Massachusetts Radiological Health Laboratory in Boston with the laboratory supervisor the day before the exercise. Because this was not a formal evaluation, the comments presented are for information only and no Deficiencies, Areas Requiring Corrective Actions, or Areas Recommended for Improvement are cited.

Equipment at the laboratory could be improved. The multichannel analyzer, while adequate for providing qualitative and quantitative measurements during an emergency, is not state-of-the-art (over 10 years old) and is difficult to maintain. It was not functioning on the day of the visit and reportedly had been inoperative for about the past 3 weeks. The state laboratory has basic counting equipment needed to support an emergency, but no backups are available except as part of agreements with laboratory facilities at Lowell University and MIT. (These facilities should be evaluated at future exercises.) The communication system available at the laboratory consists of commercial telephone.

Deficiencies

None.

Areas Requiring Corrective Actions

1. **Description:** Difficulty with determining some of the monitoring point locations was observed. The controller's map conflicted with a commercial atlas in regards to the designations of several roads (FEMA-REP-1, Rev. 1, II, I.7, I.8, I.11).

Recommendation: The road locations on the MDPH maps should be checked to ensure that the maps are up-to-date and that the state used maps agree with those used by the utility.

2.1.4 Radiological Field Monitoring Teams and Radiological Health Laboratory

Monitoring Teams. Two state field monitoring teams (NIAT-3 and NIAT-7) were mobilized and observed for the exercise. Mobilization of the field monitoring teams was not fully tested since the teams were predispatched from Boston, knowing that the exercise was scheduled. The teams were en route to Plymouth from Boston when they were notified by radio to report to the EOF. The field teams arrived at the EOF at 10:10 a.m. and were quickly given duty assignments.

Both field monitoring teams had all appropriate equipment including that for radiation monitoring, air sampling, soil and vegetation sampling, and water and milk sampling. In addition, the NIAT-3 team used a portable tape recorder to record all activities for future reference. This team also had a state-owned HP-41 CDX computer programmed and operable for decay analysis. A SAM-II NAI analyzer was also available. Overall, the equipment of the NIAT-7 team was adequate and that of the NIAT-3 team was excellent, thereby satisfying general exercise objectives. The equipment was calibrated in August 1985 as indicated on calibration stickers. It is suggested that the next scheduled calibration date also be indicated on the stickers. The only observed problem relative to equipment is that the teams' vehicles are not suitable for unfavorable terrain and weather conditions. The use of four-wheel drive vehicles for the field monitoring teams should be considered.

The technical operations of the NIAT-3 team were excellent with the exception that sources should be available for the operational check-out of both the Geiger-Mueller (G-M) and ion chamber equipment. The demonstrated adequacy of training corrects an area requiring corrective action (#51) from a previous exercise. Both teams took frequent readings en route. A problem with determining monitoring point locations by the NIAT-7 team was observed, although this was subsequently resolved by communications from the EOF. The controller's map conflicted with a commercial atlas as to the designation of several roads. The road locations on the MDPH maps should be checked to ensure that the maps are up-to-date and that the state-used maps agree with those used by the utility.

Communications between the field teams and the EOF were adequately demonstrated, thereby meeting an exercise objective. Minor communications problems were observed when NIAT teams 3 and 7 temporarily lost contact with the EOF for periods of 1 minute and 3 minutes respectively. In addition, no backup radio communications are available to either team, and the vehicle battery of NIAT -7 team went dead when the ignition switch was left on the "On" position when the engine was shut off in order to maintain the radio communications.

Radiological exposure control equipment and procedures used by the field monitoring teams were adequately demonstrated, thus meeting one of the exercise objectives. The teams had self-reading dosimeters, permanent-record dosimeters, dosimeter chargers, and record-keeping cards. Team members were familiar with the dosimeters and periodically took readings. Team members do not carry potassium iodide(KI). The authorization for use of KI and its distribution would be handled from the EOF. The teams had all protective equipment (anticontamination suits, boots, gloves and tongs) with the exception of respirators. The addition of respirators along with proper

2. **Description:** Field monitoring teams do not have any backup communications capabilities (FEMA-REP-1, Rev. 1, II, F.1.d).

Recommendation: Field monitoring teams should be provided with backup communications equipment to ensure communications with the EOF if the primary system fails.

Areas Recommended for Improvement

1. **Description:** A full demonstration of field monitoring team mobilization was not performed since the teams were pre-dispatched from Boston, prior to the formal mobilization request.

Recommendation: A full demonstration of the notification of personnel and mobilization of the field monitoring teams should be conducted in a future exercise.

2. **Description:** Although instrument calibration stickers indicated the date of the last calibration, no date for the next scheduled calibration was indicated.

Recommendation: The next scheduled calibration date should be clearly posted on calibration stickers.

3. **Description:** The field monitoring teams' vehicles are not suitable for unfavorable terrain or weather conditions.

Recommendation: The use of four-wheel drive vehicles for the field monitoring teams should be considered.

4. **Description:** Sources were not used for the operational checkout of both the G-M and ion chamber equipment.

Recommendation: Sources should be available and used in the operational checkout of the G-M and ion chamber equipment.

5. **Description:** Field monitoring teams were not equipped with protective respirators.

Recommendation: Field monitoring teams should be supplied with respirators.

6. **Description:** The opportunity for field team activity provided by the scenario was so short that there was insufficient time for environmental sampling.

Recommendation: Future exercise scenarios should be structured to provide sufficient opportunity for activity by the field monitoring teams.

2.1.5 Taunton EOC and Reception Center

The Taunton EOC is located in the basement of the Taunton Town Hall. The primary function of this EOC is to coordinate the establishment of reception and mass care facilities for evacuees from a potential radiological emergency at the Pilgrim Nuclear Generating Station. The EOC had all appropriate maps and displays either posted or available for reference. The EOC is somewhat small and a larger area would be desirable. The acting director was in charge of the EOC operations during the exercise. Additional personnel at the EOC consisted of civil defense staff, police, and public works personnel. Round-the-clock staffing was demonstrated by presentation of a roster. Communications at the EOC consisted of commercial telephones and amateur radios. The proper emergency classification system was used at the EOC, thereby correcting a previous area requiring corrective action (#13). Dosimetry at the EOC consisted of 10 low-range, 10 mid-range and six high-range direct read dosimeters. Six dosimeter chargers were also on hand as well as 6 record-keeping cards. There were also 46 CDV 777-A kits on hand, but training is needed by the EOC staff in the proper use of dosimetry.

The Taunton Reception is located at the Taunton State Hospital. For this exercise the adequacy of procedures for registration and radiological monitoring of evacuees was to be demonstrated, but not the mass care of evacuees. The objective to demonstrate the ability to perform radiological monitoring at the reception center was not met. Although a fire truck and three men were present to wash down cars, there were no trained people on site to perform the radiological monitoring. Staff at the EOC indicated that the local civil defense person who was to be responsible for this function was unable to obtain the proper training because the radiological course which he had intended to take was cancelled.

The reception center area is normally vacant and would be opened specifically for reception activities in an emergency. Much space is available but is not ordinarily maintained in usable condition. The existing local agreement is that the Red Cross would be in charge of registration at the reception center and would use Red Cross forms. However, there is some question as to whether this is compatible with the overall State/Red Cross agreement, since Red Cross staff normally concentrate on mass-care operations. During the exercise a Red Cross representative did report to the reception center with forms. A Red Cross radio was set up outside the building and a table and chair were present inside the building to demonstrate the location for registration. Furniture and food resources were available to the reception center if needed.

Deficiencies

1. **Description:** The objective to demonstrate the radiological monitoring capability for evacuees and vehicles was not demonstrated because there were no trained personnel present at the Taunton Reception Center to conduct radiological monitoring. (FEMA-REP-1, Rev 1, II, K.5.a; o.4.c: J.12).

Recommendation: Staff must be identified and trained to provide radiological monitoring of evacuees and vehicles.

Areas Requiring Corrective Actions

1. **Description:** Taunton EOC staff were not knowledgeable in the proper use of dosimetry (FEMA-REP-1, Rev. 1, II, K.3.a, K.3.b).

Recommendation: EOC staff should receive training in the use of personnel dosimetry.

2. **Description:** There are some questions as to whether the existing local agreement to have the Red Cross do the registration at the Taunton Reception Center is compatible with the overall state/Red Cross agreement. The Red Cross normally concentrates its staff on the mass care functions (FEMA-REP-1, Rev. 1, II, A.1, A.3, J.12).

Recommendation: The local plans for the Taunton Reception Center should be reviewed with appropriate organizations to determine if the plans are consistent and compatible with other agreements. This must be done to ensure that the needs of evacuees will be met in a radiological emergency.

2.1.6 Emergency Medical Services

Exercising of ambulance and hospital emergency medical services were objectives of the exercise. Metro Ambulance Service and Jordan Hospital were evaluated for the exercise.

The ambulance crew did an excellent job and demonstrated themselves to be very patient and professional under difficult conditions. The initial call to the ambulance service came at 8:19 a.m. and indicated that the Pilgrim station had a burn patient with simulated exposure from steam pipes. The ambulance arrived at the Pilgrim station main gate at 8:22 a.m. The ambulance waited at the gate until instructed to make its presence known. At 8:40 a.m. the ambulance entered the facility and arrived at the patient at 8:42 a.m. There is a need for better communications on the ambulance. Although the ambulance can communicate with traffic control personnel, it does not have two-way radio communications with the hospital, EOF, or local EOC.

The ambulance crew had a radiation survey meter, one radiation protection suit, and dosimeters, but their use was not observed and low-level dosimetry was not available. The crew demonstrated procedures for decontamination of the patient, but not for preventing contamination of the ambulance and crew. However, both the ambulance and crew were checked for contamination after the patient was removed from the ambulance.

The hospital staff at Jordan Hospital did a creditable job of handling the contaminated patient. A health physicist was available to advise the hospital staff. The hospital had the necessary equipment for determining whether and how a patient was contaminated and for decontaminating a patient. The staff was well protected and had adequate equipment but had to use a room that is an existing examining room. The use of a separate small decontamination room with a shower and plastic covered floors would be better to prevent the spread of contamination. The patient could then be moved to the examining room after he is clean of radiation. At the hospital no one was observed closing air ducts or shutting down the air conditioning to prevent the spread of contamination.

The communications capabilities at the Jordan Hospital could be improved. The hospital had no special emergency communications links with the local EOCs, the EOF, other hospitals or radiological laboratories.

Deficiencies

None.

Areas Requiring Corrective Actions

1. **Description:** The ambulance had inadequate communications to the hospital, EOF or local EOC (FEMA-REP-1, Rev. 1, II, F.2).

Recommendation: The ambulance should have two-way radio communications capabilities with the hospital, EOF and local EOCs.

- Description:** The Jordan Hospital had no special emergency communications links with radiological laboratories, other hospitals, the EOF or local EOCs (FEMA-REP-1, Rev. 1, II, F.2).

Recommendation: Communications capabilities at the Jordan Hospital should be improved to ensure the ability to communicate with radiological laboratories, other hospitals, the EOF or local EOCs in a timely manner in a radiological emergency.

- Description:** The ambulance had only one radiation protection suit (FEMA-REP-1, Rev. 1, II, L.1, L.4).

Recommendation: The ambulance should be equipped with protective clothing for each member of the crew.

- Description:** The ambulance crew did not have low-level dosimeters and was not familiar with the operation of radiation monitoring equipment (FEMA-REP-1, Rev. 1, II, L.1, L.4, K.3.a).

Recommendation: The ambulance crew should be equipped with low-level dosimeters and should be trained in the use of radiation monitoring equipment.

- Description:** An existing examination room was used at the Jordan Hospital for the initial evaluation of the contaminated victim rather than a small decontamination room, presenting the problem of decontaminating a large area and possibly spreading radioactive particles throughout the hospital and beyond (FEMA-REP-1, Rev. 1, II, L.1).

Recommendation: The use of a separate small decontamination room would be better than an existing examination room for the initial evaluation of contaminated victims to prevent the spread of contamination.

Areas Recommended for Improvement

- Description:** The ambulance waited at the main gate of the Pilgrim station for 10 minutes before receiving additional instructions on where to report (FEMA-REP-1, Rev. 1, II, F.2).

Recommendation: Either the ambulance dispatcher should more specifically describe the location to which the ambulance is to

report, or the guard at the gate should direct the medical team to the injured person(s) promptly.

2.1.7 Middleborough - State Police Warning Point and Access Control

The state warning point is located in the State Police Troop D barracks in Middleborough. The facility is adequately equipped with all supplies and amenities to sustain around-the-clock emergency operation response. Emergency classification levels were posted and a status board was maintained throughout the exercise. Noise was adequately controlled and entry into the operation area was restricted. Backup emergency power is available and routinely tested (it was not demonstrated). There was only one map posted in the dispatch center. That map identified the traffic control points, which are the responsibility of the state police. Evacuation routes, relocation centers and population distribution (traffic volume) maps should be available but were not.

Activation of the responsibilities of the state police in Middleborough occurs upon the receipt of the Unusual Event notification from the Pilgrim plant. The dispatch center and headquarter office are already 24-hour operational and therefore are available to receive notification at any time. The message is received at the police headquarter office and then transmitted to the dispatch in the communication room. The notification messages were received over commercial telephone lines from the plant. Radio is also available for the transmittal of these messages. Verification of the notification messages is over commercial telephone lines to the utility. The warning point is also responsible for notifying the MCDA and MDPH. This occurred at any change in classification or protective action recommendation. (There were no protective action recommendations transmitted through the state police warning point.)

Emergency operation management was effective. The individual in charge (duty officer) was the one designated in the plan. Coordination between the staff was good. Messages were logged and distributed as appropriate. Copies of the plan, written checklists and standard operating procedures were available and utilized throughout the exercise. The staff was knowledgeable and dedicated in their duties and responsibilities. However, some additional training of the dispatcher in the communications room is needed. A deficiency was noted in the last exercise dealing with the dual duties assumed by the radio dispatcher. Specifically, he is responsible for day-to-day police business as well as exercise communications. This was somewhat remedied by having an assistant (clerical) present in the communication room, but the possibility still exists that the dispatcher could not handle both routine and radiological emergency calls in a timely manner in a real emergency. The previous area requiring corrective action (#8) remains uncorrected.

The primary function of the state police warning point in Middleborough is a communication relay point. Notification messages are received from the plant by radio (primary) and commercial telephone lines (secondary). During the exercise, the primary system was not utilized and commercial telephones were used for message transmissions and follow-up message verification. The messages from the plant are received in the police headquarter office, verified there, and relayed to the communications dispatch room. The dispatch then attempts to notify the eight communities responding. The communications system activates two county police radio nets (Plymouth/Bristol). From there the local EOCs are notified. During the exercise the seven locals within the Plymouth County NET were able to receive the messages transmitted but all could not

verify messages over radio. The one local within the Bristol NET (Taunton) could only receive two messages over the radio during the entire exercise and was unable to verify over radio. When verification was not received by the dispatcher at the warning point, notification would occur by commercial telephone. Several times during the exercise, the communications dispatcher called the local EOCs to determine if a transmission had been received. When he found out that it had not, he neglected to relay that message during the call. Therefore, the message was never passed on to the local. This happened to Taunton at both the Alert and Site Area Classification. The communications problems described above continue a previous area requiring corrective action (#52).

The entire notification procedure at the warning point occurred in under 15 minutes (time message received until all communities verified). In addition to the transmission of messages to the local EOC, the warning point is also responsible for notifying the Massachusetts Civil Defense Agency (MCDA) and the Massachusetts Department of Public Health (MDPH). This function was executed by the officer who received the messages from the plant. All procedures demonstrated at the state police warning point during the exercise were in accordance with the plan. Field personnel under the direction of the state police are contacted via police radio.

The state police are responsible for assisting in traffic control in the affected areas. Police vehicles and personnel are staged and dispatched from the Troop D headquarters in Middleborough. During the exercise various requests were received from the Area II EOC office to activate access control points. Adequate resources and equipment are available to handle the possible requirements. Although the police provide an implementation function only in traffic control, with decision making done elsewhere, discussions were held concerning traffic control duties (traffic volumes expected, impediments to traffic flow, weather-related problems, staffing requirements, etc.).

One traffic control team was dispatched to the field to activate a control point on Route 44. Numerous teams simulated dispatch while others were held on standby. Teams are aware of evacuation routes and relocation/decontamination center locations. Dosimeters were issued to teams.

There is an adequate supply of dosimetry equipment available at the state police building. Low-range and mid-range dosimeters and TLDs are distributed to all emergency workers dispatched into the field. Dosimeters are charged and issued to the staff along with record cards and instructions. A master record card and issue card are maintained at the police building for each emergency worker -- this is in addition to the individual record cards issued. Dosimeters are to be read on the half hour. In the event of a high accumulated dose the staff has been informed to call the dispatcher and alert the police controller. Decontamination of the police officers dispatched into the field would occur at the station in Middleborough. Facilities include a wash-down area for vehicles and personnel. The police officers have recently received training in decontamination and dosimetry theory and procedures. This action corrects previously identified area requiring corrective action (#2 and #53).

Deficiencies

None.

Areas Requiring Corrective Actions

1. **Description:** Although a clerical assistant has been provided for the radio dispatcher at the state police warning point, the potential still exists for the radio dispatcher not being able to handle both routine calls and radiological emergency calls simultaneously (FEMA-REP-1, Rev. 1, II, F.1.a, F.1.d).

Recommendation: A second radio operator should be made available, at least on a standby basis, to assist with the large number of calls and radio transmissions anticipated during a radiological emergency.

2. **Description:** Some communications problems continue to exist in the notification and verification of messages between the state police warning point and the local EOCs. This was also noted in previous exercises (FEMA-REP-1, Rev. 1, II, F.1.a, F.1.d).

Recommendation: The reliability of the primary radio communications system should either be improved, or alternate systems established.

Areas Recommended for Improvement

1. **Description:** Maps showing evacuation routes, relocation centers and population distribution were not available at the state police warning point in Middleborough.

Recommendation: The indicated maps should be obtained and made available for reference.

2.1.8 Media Center

The media center was located in Memorial Hall in Plymouth. The facilities for the PIOs were generally very good. There was enough space, equipment and materials for the PIOs to function properly. Similarly, there was adequate space and furniture for media representatives, but no equipment or supplies provided for their use.

The organizations represented at the Media Center by PIOs included the utility (Boston Edison Company--BECO), Massachusetts Civil Defense Agency, Massachusetts Department of Public Health, and Plymouth Civil Defense. The activation and staffing of the media center appear to be more than adequate to meet the most rigorous public information demands. Competent sufficient staff for each organization are able to be activated on a 24-hour basis. However, since actual notification and mobilization of the PIOs was not demonstrated, future exercises should test the ability of the media center to be activated with a minimum of prepositioning.

The communications system in place at the media center was generally very good. Multiple telephone lines, two facsimile machines, and a radio scanner were available and used constantly to maintain timely communications with the EOF and state EOC.

There was, however, only one pay telephone available for reporters. While the BECO spokesman indicated that more would be available in a real emergency, this capability should be demonstrated.

Also, the facsimile machine should have been used to receive copies of EBS messages issued from the state EOC for distribution at the media center.

The public information functions at the media center were generally performed in an excellent manner. Media kits were available and contained the most recent emergency public information brochure which corrects an area requiring corrective action (#16) from an earlier exercise. There were six media briefings held at critical times during the exercise. These were generally thorough, accurate and clear. However, the technical expert, who was present at most briefings, was not present at the critical fifth briefing leading to confusion about the plant status. A technical expert should be present at all major media briefings.

Maps and displays were used to good effect. Before each briefing, and throughout the exercise, there was excellent coordination and information exchange among the various PIOs. The critical importance of this coordination was dramatically demonstrated when the MCDA PIO held up the distribution of a proposed utility media release on a utility-recommended shelter order to 20 miles from the plant until the state had the time to appropriately consider the recommendation. The final state shelter order was for 10 miles. The state PIO was, therefore, responsible for preventing the distribution of conflicting and confusing public instructions. Of special significance was the fact that utility staff regularly called local media with updates during the exercise, indicating a capability for media outreach. The good coordination and control of media releases demonstrated during the exercise and the transmission of hard copies corrects an area requiring corrective action from a previous exercise (#17).

The media center played no role in the formulation or distribution of EBS messages. This function was performed at the state EOC. Likewise, the rumor control telephone number was established at the state EOC.

When recommended protective actions included evacuation of the area within five miles of the Pilgrim plant, contingency plans were discussed to move the media center to the alternate site at the MCDA Area II headquarters in Bridgewater. The discussion included bringing in dosimetry from the utility if necessary. The decision was made not to evacuate the media center simultaneously with the town based on the availability of ample lead time before the projected release. Future effort should focus on the logistics of a possible evacuation of the media center. Dosimetry should be on hand for use in such an eventuality.

The scenario was generally effective in generating sustained and meaningful activity at the media center. Special mention should be made of the role-playing reporters provided by the utility. These "reporters" in addition to the several real reporters present, performed a necessary service in posing persistent and challenging questions to the PIOs. At times the role-playing reporters challenged and successfully violated the security arrangements provided for the PIOs by the utility. Future scenarios should test the ability of the media center to be activated on as close to a real-time basis as possible.

Deficiencies

None.

Areas Requiring Corrective Actions

None.

Areas Recommended for Improvement

1. **Description:** No equipment or supplies were provided for media representatives at the media center, and there was only one pay telephone available for their use.

Recommendation: Equipment, supplies, and additional telephones should be provided for media representatives.

2. **Description:** Actual notification and mobilization of the PIOs to the media center was not demonstrated.

Recommendation: Future exercises should test the ability of the media center to be activated with a minimum of prepositioning.

3. **Description:** The facsimile machines at the media center were not used to receive copies of EBS messages issued from the state EOC for distribution at the media center.

Recommendation: The telefax machine should be used to receive state-generated EBS messages so they can be distributed at the media center.

4. **Description:** The technical expert who was present for most media briefings at the media center was not present for the critical fifth briefing, leading to some confusion about the plant status.

Recommendation: A technical expert should be present at all major media briefings.

5. **Description:** The decision was made not to relocate the media center during the protective action recommendation of evacuation.

Recommendation: Future effort should address the logistics of a possible evacuation of the media center and the need for dosimetry.

6. **Description:** Role-playing reporters at the media center challenged and successfully violated the security arrangements provided by the utility.

Recommendation: Security arrangements at the media center should be reviewed and upgraded, if necessary.

2.2 MASSACHUSETTS LOCAL EMERGENCY OPERATIONS CENTERS

2.2.1 Plymouth

The Plymouth EOC is located in the basement of the Memorial Hall municipal building. The alternate EOC, which was not activated for this scenario, is located at the Plymouth Airport.

The primary EOC facilities were adequate as to furniture, lighting, telephones, extended support and backup power. The limited space was efficiently utilized. An air filter had been installed to improve ventilation and correct a problem that had been observed during the last exercise. A status and event board were posted and a large EPZ map was available showing sectors, evacuation routes and siren positions. Compass points had been superimposed on a second EPZ map to correct an area for improvement. Information on reception centers and access control was available in the plan. However, current population distribution data on residents and transients was neither posted nor available in the plan for designated evacuation areas. The absence of this information could limit the effectiveness of this community's emergency response planning and requires corrective action.

The primary EOC was partially activated following notification of an unusual event at 8:25 a.m. The civil defense director and selectmen had been notified by town police dispatch using pagers and telephones. At the Alert notification at 9:07, all EOC staff were contacted by telephone and put on standby. Following the Site Area notification at 10:39 a.m. the EOC was activated and staffing was completed by 11:10 a.m. The notification procedure has 24 hour capabilities and the call list was up to date.

Nine municipal offices were represented and 12 individuals participated. A roster was presented to demonstrate round-the-clock staffing capabilities. The participating staff demonstrated a good understanding of their roles and their assignments were promptly carried out.

The civil defense director, as specified in the plan, capably managed the EOC operations. The deputy director, who was well informed on the escalating emergency situation, provided management support. Periodic briefings were held and the appropriate staff members were included in the decision making. The new town plan had been received several days before the exercise. This plan, as well as checklists, was frequently referenced throughout the exercise. Message logs were maintained by the communications officer and the more important information posted on the event board. Message logs were also maintained by participating staff although the recording procedures and format were not standardized. Systematic documentation for all departments would be helpful to the second shift. Access control was maintained by the Civil Air Patrol in combination with utility security staff.

The communications capabilities at the EOC were very good. The primary communications system was the telephone which interlinked the EOCs, Area II and local institutions. The RACES and high-band CB radios served as backup. In addition, police, fire, town network and MCDA radios were available. All communications were confined

to the communications room to reduce noise in the operational area. Procedures were in place to transmit written messages to EOC staff or verbally brief the staff which corrects a previously reported area requiring corrective action (#30). A radio and television for monitoring EBS messages were present although the EBS stations were not monitored and radio was not operational throughout most of the exercise. Messages concerning the emergency action levels were often received from the media center liaison before they were transmitted over the existing communications systems.

The Plymouth EOC simulated a comprehensive program for alerting the public and carrying out both sheltering (12:00 p.m. and 2:30 p.m.) and evacuation activities at 2:18 p.m., 2:30 p.m. and 2:39 p.m. when the entire community was evacuated. Each protective action included simulated siren and voice notification over the fixed speakers, and simulated deployment of route alerting teams with sirens and public address systems. A computer was utilized to identify the streets to be included in the route to be assigned to the route alerting teams. However, staff were uncertain about actual route completion times. The coastal areas were notified by the harbor master as a simulated boat with speakers patrolled the area. The Plymouth airport simulated stopping all air traffic. Schools and other public and institutional facilities were contacted by the EOC staff and notified of the emergency situation. Prescribed messages were given to the public using radius information rather than familiar landmarks. This could be confusing, particularly to the many transients who are present during the summer tourist season. Moreover, EOC staff expressed a concern that anticipated route alerting times may be excessive.

Protective actions were demonstrated by the simulated establishment of traffic and access control points, closure of municipal water intake points and provision of transportation vehicles for mobility impaired in nursing homes and hospitals. Staff and equipment were reported to be adequate to keep evacuation routes open and cover access and traffic control simultaneously. A new utility pamphlet that included a survey form for mobility impaired and other instructions to the public has been recently mailed. The EOC staff report that these pamphlets are now being received in their community and that they contain appropriate information. If this information reflects the procedures provided in the new town plan, a previous area requiring corrective action has been corrected (#16).

Radiological exposure control equipment was dispensed to EOC staff when the EOC was activated. Kits contained low- and medium-range dosimeters and TLDs. Chargers and record-keeping cards were also available. The supply of equipment was adequate. Police and fire staff maintained their own equipment which included the dosimeters and simulated TLDs. The Department of Public Works did not have dosimetry kits and there was some confusion on the procedures to be followed to promptly acquire dosimetry for their field personnel.

EOC and field staff were requested to simulate reading dosimeters every 15 minutes and report any readings to the RADEF office. This corrects a previously reported area requiring corrective action (#55), however, these instructions do not correspond with those reported as a proposed action to be developed by the state (6/25/85).

Members of the press would not be given access to the EOC once activation takes place. Security will direct the media to the Media Center. This corrects an area requiring corrective action from a previous exercise (#43).

Recovery and reentry were not demonstrated and an area requiring corrective action outstanding from 1982 could not be corrected (#46). The EOC was closed following notification of downgrade in classification. This was done in order to avoid overtime costs in the municipality. Although recovery and reentry procedures have been incorporated in the new town plan, in response to an area requiring corrective action from an earlier exercise (#54), FEMA has not received a revised version of the Plymouth plan and this issue remains incomplete.

The design of the scenario was adequate to test the emergency response capabilities of the Plymouth EOC.

Deficiencies

None.

Areas Requiring Corrective Actions

1. **Description:** Current population distribution data on residents and transients was neither posted nor available in the plan for designated evacuation areas. (FEMA-REP-1, Rev. 1, II, J.10.b)

Recommendation: Current population distribution data should be provided for residents and transients including the expected seasonal variations.

2. **Description:** Protective action instructions for sheltering and evacuating the public were not given in terms of familiar boundaries and landmarks. Sufficient information was not provided to transients. This information is important in an area with a large transient population. (FEMA-REP-1, Rev. 1, II, E.6, E.7)

Recommendation: Protective action instructions should be developed to reflect familiar boundaries and landmarks and to provide information to transients.

3. **Description:** EBS stations were not monitored in the EOC and the available radio was not operating during part of the exercise. (FEMA-REP-1, Rev. 1, II, E.5)

Recommendation: EBS stations should be routinely monitored in the EOC and the equipment should be maintained.

Areas Recommended for Improvement

1. **Description:** EOC departmental staff did not have a standardized procedure in place for message documentation. This would improve the overall operations and transition to the second shift. (FEMA-REP-1, Rev. 1, II, A.1.b, A.2.a)

Recommendation: EOC staff should develop a standardized message recording procedure and format for logging departmental messages.

2. **Description:** Route alerting teams have not participated in a full demonstration and uncertainties exist in expected route completion times. (FEMA-REP-1, Rev. 1, II, E.6)

Recommendation: Route alerting should be demonstrated and field tested in a future exercise.

3. **Description:** A procedure was not in place to promptly provide Department of Public Works field staff with appropriate dosimetry. (FEMA-REP-1, Rev. 1, II, K.3.a)

Recommendation: A procedure should be established to promptly provide appropriate dosimetry to all Public Works field staff.

2.2.2 Duxbury

The Duxbury EOC is located in the basement of the fire department. The facility was adequate as to space, furniture, lighting, extended operation and backup power. An additional telephone line has been added since the last exercise to correct an area requiring corrective action (#56). A status board and appropriate display were posted. However, information on the current population distribution for residents and transients was not available.

The EOC was activated following the notification of a Site Area Emergency at 10:43 a.m. and staffing was completed by 11:02 a.m. The emergency notification was transmitted from the town police to the fire department duty officer who was responsible for contacting the EOC civil defense director and EOC staff. This system had 24-hour capabilities.

Eleven municipal agencies participated in the exercise and their representatives demonstrated adequate training and knowledge in carrying out their assignments. Due to other demands, some staff could not be continually present in the EOC, although they were able and did participate in making the more important decisions. Round-the-clock staffing capabilities were available and a second shift was posted on the roster.

The EOC was managed by the civil defense director as specified in the plan. He discharged his duties efficiently and provided continuous briefings to his staff. Excellent decision making resulted from the staff coordination. Copies of the new town plan were available for staff use as well as their respective checklists. Access control to the EOC was simulated.

The communications systems included the telephone and RACES radio. All communications were promptly received and the quality of the transmission was good.

Public alerting actions were carried out by the Duxbury EOC including simulated sounding of sirens and voice broadcasts over fixed speakers and deployment of route alerting teams with vehicles equipped with public address systems. When the General Emergency was declared at 11:44 a.m., the civil defense director made the decision to deploy the route alerting teams to pre-warn transients on the beaches and harbor to take shelter. When Area II recommended an evacuation of beach and harbor areas at 2:42 p.m., the EOC harbor master and beach officer made a second check to assure transients had left the area. During the exercise, the sirens and route alerting activations were simulated for a shelter order at 12:40 p.m. and at 2:42 p.m. Schools were also notified of this recommendation. Instructions transmitted over the fixed and mobile alerting systems were not prescribed.

There was a simulated demonstration of access control by the highway department, for example, the police department simulated positioning heavy-duty wreckers at key intersections to demonstrate the ability to keep evacuation routes clear. The Harbor master indicated that he would clear all water traffic within his jurisdiction. The EOC school department coordinator would have notified schools to release students and return them to their homes when a sheltering action was required.

EOC staff reported that emergency information had been mailed to the public by the utility which corrects an area requiring corrective action from an earlier exercise (#41). The information is current although the exact content was not cross-compared with the plan. If this information is accurate, an area requiring corrective action has been corrected (#16).

Exposure control was demonstrated for the EOC staff. Dosimetry equipment included low- and medium-range dosimeters, TLDs, record-keeping cards and chargers. There were 60 dosimeters and TLDs available for emergency workers, which was more than the number of participants. The RADEF officer demonstrated issuing dosimetry to 16 emergency workers. The availability and issuance of the low-range dosimeters corrects an area requiring corrective action from an earlier exercise (#58).

Media relations are not carried out by the Duxbury EOC staff.

Recovery and reentry were not fully demonstrated as part of this scenario. This community was requested to shelter and no evacuation of the resident population was required. Although recovery and reentry procedures are available and included in the local plan in response to an earlier area requiring corrective action (#57), FEMA has not received a revised copy of the Duxbury plan, and this issue remains incomplete. EOC staff did discuss the recovery actions that they would initiate under the shelter order. This demonstration partially corrects an area requiring corrective action (#46).

Deficiencies

None.

Areas Requiring Corrective Action

1. **Description:** Current population distribution data on residents and transients was neither posted nor available in the plan for evacuation areas. (FEMA-REP-1, Rev. 1, II, J.10.b)

Recommendation: Current population distribution data should be provided for residents and transients including the expected seasonal variations.

Areas Recommended for Improvement

1. **Description:** Access control to the Duxbury EOC was simulated.

Recommendation: EOC operations should include an actual demonstration of EOC access control in a future exercise.

2.2.3 Carver

According to the applicable section of state/local plans, the Carver EOC is located within the town hall. However, during the exercise, there was confusion among the participating staff on the specific location of the operational area. The location that finally was selected and utilized was a small basement office. The size of the office is inadequate and the ventilation is poor. Since the EOC radio communications are also located in the same room, the noise could adversely affect EOC operations.

Appropriate maps and status boards were posted in another room. Posted information did not include population distribution data and this information was not available in the town plan. However, small-scale copies of the available displays were present in the office area. They were not highly usable or easy to read. Throughout the exercise the status boards were not utilized and the emergency classification levels were not posted.

The EOC activation procedure was initiated by the police/fire dispatcher in the municipal communication room. After the notification and verification of an emergency message from the state police, the dispatcher contacted the EOC staff. Contact was made using a combination of pagers and telephones and an up-to-date call out list. This activation procedure was according to the local plan. However, the EOC director and his staff did not respond, consequently, the EOC was not formally activated. Staffing was never completed leaving the EOC only partially operational.

EOC staff that participated throughout the exercise included the on-duty dispatcher and an off-duty dispatcher who was not listed on the EOC call-up list. Other municipal staff visited the EOC but did not actively participate in the operational activities. Round-the-clock staffing capabilities were not demonstrated.

The EOC was not managed by the individual designated in the plan or by an alternate. There was no leadership observed to coordinate emergency activities, conduct briefings, and demonstrate decision making. Access to the EOC was not controlled. A copy of the revised plan was available for reference but the participants did not use written procedures or checklists.

The communications systems available to the EOC consisted of the telephone and RACES radio. Police, fire, and department of public works radios were also available in the municipal communications center. The communications center and EOC were in separate buildings. Eventually it is planned to connect these buildings by an intercom. Exchange of messages between the EOC operations area and communications center created confusion and some time delays. The dispatcher became overly busy with his regular duties and the management of emergency telephone traffic. A concern was expressed that the telephone line into the communication center would be overloaded in an actual emergency. The commercial telephone is the primary communication system. The backup system is the RACES radio. Initially this radio was not operational because a microphone could not be located. Once operational, both communications systems operated well during the exercise. The RACES operator displayed enthusiasm and carried out his assignments in a professional manner.

Limited public alerting activities were carried out by the participating staff. On his own initiative, the dispatcher regularly telephoned the local schools, and other municipal agencies to keep them updated on the emergency situation. The dispatcher did not receive an order to simulate siren activation, therefore, no actions were ever taken to alert the general public. Part of Carver was within the area covered by the shelter recommendation. In addition, the staff believes that some of the fixed sirens may be inoperable. Available staff were uncertain about procedure for deploying route alerting teams for primary or supplemental notification.

Even though portions of Carver were in the area covered by the shelter recommendation, access control points were not established for inbound traffic. Traffic control points were not activated along the evacuation route under their jurisdiction. Staff were not available during the exercise to coordinate protective actions such as these. However, staff believed that sufficient municipal personnel and equipment could be made available for traffic and access control as well as keeping the evacuation routes open.

Pamphlets that contain information on protective actions have been updated and distributed to the public which corrects part of an earlier area requiring corrective action (#16). However, participating staff noted that the telephone number published for the town hall is incorrect and this continues part of the earlier area requiring corrective action (#16).

Exposure control equipment was available in the Carver EOC and included low- and medium-range dosimeters, TLDs, chargers, and record-keeping cards. The supply was adequate for the number of participants identified in the town plan. This corrects an outstanding area requiring corrective action (#44). Radiation detection kits are also reported to be available. A staff member was familiar with the dosimetry distribution and decontamination procedures.

Recovery and reentry were not demonstrated. Carver was not located within the area being evacuated under the exercise scenario, therefore, an area requiring corrective action in this area could not be corrected (#63). Although recovery and reentry procedures are available in the revised plan in response to an area requiring corrective action from a previous exercise (#59), FEMA has not received a copy of the revised plan for review, and this issue remains incomplete.

Deficiencies

1. **Description:** The Carver EOC did not demonstrate the ability to mobilize staff and activate facilities promptly. The EOC staff notified on the call-up list did not report to the EOC and carry out their assignments. (FEMA-REP-1, Rev. 1, II. E.2, A.2.a)

Recommendation: Designated staff should report to the EOC to represent the organizations designated in the plan. They should carry out specified assignments promptly. Procedures should be in place for activation of alternate staff to fill vacancies in first-shift EOC appointments.

2. **Description:** EOC management, as specified in the plan, did not participate in the exercise. There was no demonstration of the ability to make decisions and to coordinate emergency activities. (FEMA-REP-1, Rev. 1, II, A.1.d, A.1.b, A.2.a)

Recommendation: An accurate EOC management structure should be developed and specified in the town plan. Alternate staff should be designated, trained and procedures put in place for their activation.

3. **Description:** EOC staff did not adequately demonstrate their ability to alert the public within the 10-mile EPZ. There was no coordinated effort among the participating staff for simulating sounding of sirens, disseminating instructional messages, or route alerting. (FEMA-REP-1, Rev. 1, II, E.6)

Recommendation: EOC staff should demonstrate the ability to alert the public in the affected portions of their community and disseminate the initial instructional messages.

Areas Requiring Corrective Actions

1. **Description:** There was confusion among the participating Carver EOC staff on the location of the operations area. (FEMA-REP-1, Rev. 1, II, H.3)

Recommendation: The Carver EOC operations area should be clearly identified and the location should be provided in the town plan.

2. **Description:** The EOC operations area utilized for this exercise was inadequate to support emergency operations. The displays and status boards that were located in the operations area were too small and were not visibly posted. The status board was not utilized and the emergency classification levels were not posted. (FEMA-REP-1, Rev. 1, II, H.3)

Recommendation: The EOC facilities should be improved and adequate displays should be usable and easy to read. The status boards should be utilized and the emergency classification levels posted.

3. **Description:** Round-the-clock staffing capabilities were not demonstrated. (FEMA-REP-1, Rev. 1, II, A.4)

Recommendation: Demonstrate the ability to staff the EOC round-the-clock.

4. **Description:** The available telephone lines in the municipal dispatch center could become overloaded during an actual emergency. In addition, the dispatcher was overly busy with handling routine work as well as emergency telephone messages. (FEMA-REP-1, Rev. 1, II, H.3, F.1.e, F.1.b)

Recommendation: Separate telephone lines and communications staff should be assigned to municipal emergency operations. All equipment should be located near the operations area or provisions should be made for prompt message transmittal between separate areas.

5. **Description:** Access to the EOC was not controlled. (FEMA-REP-1, Rev. 1, II, D.3)

Recommendation: Access to the EOC should be controlled.

6. **Description:** Access and traffic control points were not activated or simulated by the Carver EOC staff. Consequently, access was not restricted to the area under their jurisdiction which was being sheltered. Traffic control points were not available to provide assistance along the evacuation route. (FEMA-REP-1, Rev. 1, II, J.10.k, J.10.g, and J.10.j)

Recommendation: The EOC staff should demonstrate their organizational ability and the resources necessary to manage traffic and access control within their jurisdiction.

Areas Recommended for Improvement

1. **Description:** EOC staff did not utilize written procedures and checklists for reference in carrying out emergency operations within the EOC.

Recommendation: EOC staff should utilize written procedures and checklists in carrying out the emergency operations of the EOC.

2.2.4 Kingston

The Kingston EOC is located in the Kingston fire station. Overall, this facility has sufficient amenities to carry out emergency response activities. Backup power was available and emergency action levels were posted. A status board was used to record and update major events which satisfies a previous recommendation. The facility also included a radio for monitoring EBS broadcasts and this reflects a response to an earlier recommendation. All necessary maps were available and posted except for population distribution information. Population numbers for residents and transients were not available for evacuation areas.

Key EOC staff were placed on stand-by following notification of an Unusual Event at 8:18 a.m. Notification to staff was made by pager. The EOC was activated at the Alert notification at 9:22 a.m. and was operational by 10:00 a.m. The EOC staff primarily comprised volunteers who demonstrated knowledge of their assigned duties and implemented procedures effectively. However, there was some confusion among the staff regarding the definition and purpose of the state of emergency declaration by the governor.

Participants represented municipal police and fire departments, civil defense, board of selectmen, the local school district, board of health, RACES, and a citizens band radio group.

The EOC operations were efficiently managed by the civil defense director. The director informed his staff on the changing emergency situation, guided staff discussion regarding emergency response actions and utilized the town plan and appropriate checklists. The civil defense director aggressively pursued information from the Area II office needed for quick response actions and demonstrated a correction of a previously reported problem. Another previous area requiring corrective action was corrected by establishing a security point staffed by the Kingston auxiliary police (#25). A single log was maintained for internal messages in response to a recommendation from a previous exercise.

The communications systems in the Kingston EOC consisted of a dedicated line to the Area II office in Bridgewater, a telephone line to the Kingston police, citizens band internal civil defense radio network, RACES, and a municipal radio. All of these systems functioned well and messages were promptly transmitted. A previous deficiency was corrected by having the RACES and citizens band operators use earphones to reduce the noise level within the EOC (#32).

The Kingston EOC did not play a role in carrying out protective actions. The initial message to activate sirens and EBS at 12:38 p.m. did not apply to sectors within municipal boundaries. Nevertheless, simulated procedures were in place for siren activation had it been required. Route alerting by police and fire departments was also discussed. According to the EOC director, Kingston has a sufficient number of vehicles with public address systems to implement route alerting procedures. This capability corrects an earlier area requiring corrective action (#39).

Following receipt of shelter and evacuation recommendations for other communities, EOC staff discussed the adequacy of the personnel and resources available for protective actions in Kingston. According to the EOC director, resources and personnel would be adequate to control access and keep evacuation routes clear. Mutual aid could be obtained from other areas should the need arise. The staff reviewed the location of the designated traffic control points and noted that some maps need to be changed to reflect requirements in the field. However, the EOC staff did not have school prerelease plans available for review. A message at 11:31 a.m. indicated that a prerelease of schoolchildren should be ordered. Moreover, some confusion existed among the staff on the areas outside Kingston that were being affected by the protective action recommendations for sheltering. The ability for local residents to respond to protective actions would, in part, depend on the information they received in pamphlets distributed to them. These pamphlets were not present in the EOC and two areas requiring corrective action from an earlier exercise concerning the content of these pamphlets could not be evaluated.

Radiological exposure control was effectively implemented. An adequate number of low- and medium-range dosimeters, TLDs, chargers and record-keeping cards were available. The deputy civil defense officer demonstrated good knowledge of exposure control procedures. Excellent instructions were issued to each emergency worker and an information sheet was filled out. The availability of dosimetry satisfies part of a recommendation for an area of improvement from a previous exercise. However, dosimeters were not read on a regular basis and this continues part of an area for improvement reported at the 1983 exercise.

Media relations were not demonstrated at the Kingston EOC.

Recovery and reentry activities were not demonstrated. Kingston was not evacuated and these procedures could not be tested to eliminate an area requiring corrective action (#46). Although procedures for recovery and reentry are now present in the local town plan in response to an earlier area requiring corrective action (#61), FEMA has not received a copy of the revised plan for review, and this issue remains incomplete.

The scenario provided a good opportunity to test the capabilities of the Kingston emergency response personnel. The staff displayed outstanding initiative in developing creative free-play messages to stimulate activities.

Deficiencies

None.

Areas Requiring Corrective Actions

1. **Description:** There was some confusion among EOC staff on the definition and purpose of the State of Emergency declaration by the governor. (FEMA-REP-1, Rev. 1, II, A.2.a)

Recommendation: The local plan should include a description of the State of Emergency Declaration and clearly distinguish it from the General Emergency. Additional training should be provided to all local emergency response personnel.

Areas Recommended for Improvement

1. **Description:** Based on discussions with the civil defense director and review of the local plans for traffic and access control points, redesignation of some points may be necessary. (FEMA-REP-1, Rev. 1, II, J.10.k, J.10.g)

Recommendation: The local plan should be modified to reflect local needs and optimize management of traffic and access control in an emergency situation.

2. **Description:** EOC staff did not have procedures for prerelease of school children in place and available for review. (FEMA-REP-1, Rev. 1, II, J.10.g, E.6)

Recommendation: Procedures for a prerelease program for school-children should be available in the EOC for review by EOC staff. Staff should be familiar with these procedures for a rapid response in an emergency situation.

3. **Description:** Some confusion existed among the staff on the areas outside Kingston that were being affected by the protective action recommendation for sheltering. (FEMA-REP-1, Rev. 1, II, J.10.j, A.2.a)

Recommendation: Provide training to EOC personnel on interpreting protective action recommendations and understanding how sectors are identified on the EPZ map.

4. **Description:** Dosimetry was not read at regular intervals. This continues part of an area for improvement reported from an earlier exercise. (FEMA-REP-1, Rev. 1, II, K.3.b)

Recommendation: Require dosimeter readings at appropriate periodic intervals, and review exposure record forms to facilitate recording the information.

2.2.5 Marshfield

The EOC is located in the basement of the Marshfield police station. The facility was well lighted and has sufficient furniture and adequate telephones and a source of backup power. Improvements in these facilities correct an area requiring corrective action from a previous exercise (#62). Telephones and other communications equipment are presently located in the same location within the EOC, eliminating confusion in operations. This corrects another area requiring corrective action (#29). Extended use could be accommodated at a nearby fire department facility which is totally self-sufficient.

Maps and required displays were available and posted in the EOC. A previous area requiring corrective action (#22) has been corrected by the improved quality of some displays. A large blackboard was available for a status board and the emergency classification levels and maps were easy to see and read.

The Marshfield EOC was activated at 10:35 a.m. following notification of a Site Area Emergency. The EOC was operational immediately since the EOC staff were pre-positioned. Notification to EOC staff was made by the police department using pagers and telephones. This system has 24-hour capabilities. During the exercise the eight offices were represented in the EOC by actual or simulated staff. The participating staff displayed a thorough knowledge of the local REP plan and excellent training in carrying out emergency procedures. This demonstration corrects an area requiring corrective action from a previous exercise (#31). Around-the-clock staffing was available and an up-to-date roster for a second shift was presented.

Emergency operations were effectively managed by the civil defense director. Periodic briefings were held to update staff on the emergency situation and staff, where appropriate, were involved in decision making. A recently updated plan was readily available and written procedures and checklists were referenced. Message handling was effective as messages were verified, logged and distributed. Security procedures had been established and entrance to the EOC was controlled throughout the exercise. This eliminated another area requiring corrective action (#26).

Communications worked very well and EOC capabilities have been expanded since the last exercise. Currently the available systems include a direct telephone line, RACES radio, citizens band radio and a police scanner. Messages received over the police scanner and radios were of excellent quality and messages from Area II flowed smoothly.

The Marshfield EOC was minimally involved in public alerting activities although public instructions were not developed. This community is situated on the edge of the EPZ. EOC staff discussed simulating the sounding of sirens in response to the sheltering recommendations that would affect a small portion of the municipality.

Protective actions were not demonstrated. The staff discussed the procedures that were in place for establishing traffic control points, keeping evacuation routes clear, assisting the mobility impaired, and transporting schoolchildren including children with special needs. However, under the scenario, an evacuation route and other highways

that gave access into an area under a shelter order are located within Marshfield's jurisdiction. Traffic and access control points were neither established nor simulated.

EOC staff reported that local residents had received new emergency information pamphlets. The information contained in the pamphlets had not been cross-compared with the plan. The outstanding area requiring corrective action from a previous exercise could not be completely evaluated (#16).

Exposure control equipment included low- and medium-range dosimeters, TLDs, chargers, and record-keeping cards. The equipment supply was more than adequate for the number of participating emergency workers. The civil defense director was aware of decontamination procedures.

Media relations were not carried out.

This community did not evacuate during the exercise, consequently, recovery and reentry procedures were not demonstrated. Nevertheless, staff did conduct a discussion of the various actions that would be taken should an evacuation be required in their community. This discussion of recovery and reentry eliminated an area requiring corrective action from an earlier exercise (#46). Although recovery and reentry procedures have been included in the revised town plan, in response to an earlier area requiring corrective action (#63), FEMA has not received a copy of the revised plan for review, and this issue remains incomplete.

The design of the scenario was adequate. Marshfield provided an acceptable demonstration of its emergency response capabilities.

Deficiencies

None.

Areas Requiring Corrective Action

1. **Description:** Access control was neither ordered nor simulated by the Marshfield EOC. This community contained areas included in the shelter order as well as roadways leading into the area potentially affected under the exercise scenario. (FEMA-REP-1, Rev. 1, II, J.10.K, J.10.g)

Recommendation: Access control points should be established on roadways leading into an area covered by a protective action.

Areas Recommended for Improvement

1. **Description:** The Marshfield EOC staff were prepositioned. Activation and staffing procedures were not fully demonstrated. (FEMA-REP-1, Rev. 1, II, E.2)

Recommendation: In a future exercise the Marshfield EOC should fully test its activation and staffing capabilities.

3 SCHEDULE FOR CORRECTION OF DEFICIENCIES AND AREAS REQUIRING CORRECTIVE ACTIONS

Section 2 of this report lists deficiencies and areas requiring corrective actions with recommendations noted by the federal evaluators of this exercise. These evaluations are based on the applicable planning standards and evaluation criteria set forth in Section II of NUREG-0654-FEMA-REP-1, Rev. 1 (November, 1980), exercise objectives, and the evaluation criteria provided in Sec. 1.5 of this report.

The Regional Director of FEMA is responsible for certifying to the FEMA Associate Director, State and Local Programs and Support, Washington, D.C., that any deficiencies and areas requiring corrective actions noted in the exercise have been corrected and that such corrections have been incorporated into the plan.

FEMA requests that the state and local jurisdictions submit the measures they have taken or intend to take to correct deficiencies and areas requiring corrective actions. FEMA recommends that a detailed plan, including projected and actual dates of completion for implementing corrective actions, be provided if corrective actions cannot be instituted immediately.

FEMA has recently adopted changes in terminology regarding exercise inadequacies. The revised terminology is reflected in this report. The definitions of the exercise inadequacies are as follows:

Deficiencies are demonstrated and observed inadequacies that would cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of a nuclear power facility in the event of radiological emergency. Because of the potential impact of deficiencies on emergency preparedness, they are required to be promptly corrected through appropriate remedial actions including remedial exercises, drills or other actions.

Areas Requiring Corrective Actions are demonstrated and observed inadequacies of State and local government performance, and although their correction is required during the next scheduled biennial exercise, they are not considered, by themselves, to adversely impact public health and safety.

Four (4) deficiencies were identified in this exercise. Both deficiencies and areas requiring corrective actions identified in this exercise are summarized in Table 2.

Table 3 is a compilation of the current status of deficiencies and areas requiring corrective actions identified in the March 3, 1982, June 29, 1983, and September 5, 1985 exercises. Table 4 lists the status of each of the 35 FEMA Core Objectives for each state and local jurisdiction by exercise year.

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<u>State EOC</u>					
<p>1. <u>Description:</u> There was very limited technical information coming to the State EOC from the EOF regarding plant conditions and the reasons for emergency action levels, which also limited information flow to the Area II and local EOCs.</p> <p><u>Recommendation:</u> Coordination between the state EOC and EOF should be improved to ensure that sufficient data are gathered at the EOF and transmitted to the State EOC to form a basis for sound decision making, and subsequently transmitted to the Area II and local EOCs.</p>	1.10, F.1.d				
<p>2. <u>Description:</u> Similar to the previous exercise, the U.S. Coast Guard did not simulate the dispatch of helicopters into the EP2 area since radiation would trigger a false alarm on stress sensors on the aircraft which use a radioactive source.</p> <p><u>Recommendation:</u> If alternate arrangements have been established, the plan should be revised to reflect the fact that Coast Guard helicopters will not be mobilized into a potentially radioactive area during an emergency.</p>	J.9.c				

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TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>3. <u>Description:</u> Because of scenario limitations, a full demonstration of recovery and reentry activities was not conducted. <u>Recommendation:</u> Recovery and reentry should be fully tested in a future exercise.</p>	<p>M.1, M.3, M.4</p>				
<u>Emergency Operations Facility (EOF)</u>					
<p>1. <u>Description:</u> Dose projections and protective action recommendations were done by the utility at the EOF. The state personnel at the EOF did not perform independent analysis and did not inquire as to the assumptions that were used by the utility in their analysis. <u>Recommendation:</u> State personnel at the EOF should either conduct independent analysis or should spend more time in critically reviewing the dose assessments and protective action recommendations made by the utility.</p>	<p>1.10</p>				

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>2. <u>Description:</u> Although the state DPH staff at the EOF were included in detailed briefings by the utility as to plant status and the radiological significance of the plant status, the DPH staff did not pass on this detailed information to the state EOC. Because of this, the EOC staff had very limited technical information to use as a basis for decision making.</p> <p><u>Recommendation:</u> Additional training in the assessment of nuclear power plant accidents is recommended for State staff located at the EOF. Responsibility should be assigned to DPH or utility staff at the EOF for preparing plant status updates and meteorological data on standard forms as well as written recommendations and reasons for protective actions.</p>	I.10				
<u>Field Monitoring</u>					
<p>1. <u>Description:</u> Difficulty with determining some of the monitoring point locations was observed. The controller's map conflicted with a commercial atlas in regards to the designations of several roads.</p> <p><u>Recommendation:</u> The road locations on the MDPH maps should be checked to ensure that the maps are up-to-date and that the state-used maps agree with those used by the utility.</p>	I.7, I.8, I.11				

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TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
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Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>2. <u>Description:</u> Field monitoring teams do not have any backup communications capabilities. <u>Recommendation:</u> Field monitoring teams should be provided with backup communications equipment to ensure communications with the EOF if the primary system fails.</p>	F.1.d				
<u>Taunton EOC/Reception Center</u>					
<p>*1. <u>Description:</u> The objective to demonstrate the radiological monitoring capability for evacuees and vehicles was not demonstrated because there were no trained personnel present at the Taunton Reception Center to conduct radiological monitoring. <u>Recommendation:</u> Staff must be identified and trained to provide radiological monitoring of evacuees and vehicles.</p>	K.5.a, O.4.c, J.12				
<p>1. <u>Description:</u> Taunton EOC staff were not knowledgeable in the proper use of dosimetry. <u>Recommendation:</u> EOC staff should receive training in the use of personnel dosimetry.</p>	K.3.a, K.3.b				

*Deficiency.

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>2. <u>Description:</u> There are some questions as to whether the existing local agreement to have the Red Cross do the registration at the Taunton Reception Center is compatible with the overall State/Red Cross Agreement. The Red Cross normally concentrates its staff on the mass care functions.</p> <p><u>Recommendation:</u> The local plans for the Taunton Reception Center should be reviewed with appropriate organizations to determine if the plans are consistent and compatible with other agreements. This must be done to ensure that the needs of evacuees will be met in a radiological emergency.</p>	<p>A.1, A.3, J.12</p>				
<p><u>Emergency Medical Services</u></p>					
<p>1. <u>Description:</u> The ambulance had inadequate communications to the hospital, EOF or local EOC.</p> <p><u>Recommendation:</u> The ambulance should have two-way radio communications capabilities with the hospital, EOF and local EOCs.</p>	<p>F.2</p>				

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>2. <u>Description:</u> The Jordan Hospital had no special emergency communications links with radiological laboratories, other hospitals, the EOF or local EOCs.</p> <p><u>Recommendation:</u> Communications capabilities at the Jordan Hospital should be improved to ensure the ability to communicate with radiological laboratories, other hospitals, the EOF or local EOCs in a timely manner in a radiological emergency.</p>	F.2				
<p>3. <u>Description:</u> The ambulance had only one radiation protection suit.</p> <p><u>Recommendation:</u> The ambulance should be equipped with protective clothing for each member of the crew.</p>	L.1, L.4				
<p>4. <u>Description:</u> The ambulance crew did not have low-level dosimeters and was not familiar with the operation of radiation monitoring equipment.</p> <p><u>Recommendation:</u> The ambulance crew should be equipped with low-level dosimeters and should be trained in the use of radiation monitoring equipment.</p>	L.1, L.4, K.3.a				

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>5. <u>Description:</u> An existing examination room was used at the Jordan Hospital for the initial evaluation of the contaminated victim rather than a small decontamination room, presenting the problem of decontaminating a large area and possibly spreading radioactive particles throughout the hospital and beyond.</p> <p><u>Recommendation:</u> The use of a separate small decontamination room would be better than an existing examination room for the initial evaluation of contaminated victims to prevent the spread of contamination.</p>	L.1				
<u>State Warning Point</u>					
<p>1. <u>Description:</u> Although a clerical assistant has been provided for the radio dispatcher at the state police warning point, the potential still exists for the radio dispatcher not being able to handle both routine calls and radiological emergency calls simultaneously.</p> <p><u>Recommendation:</u> A second radio operator should be made available, at least on a standby basis, to assist with the large number of calls and radio transmissions anticipated during a radiological emergency.</p>	F.1.a, F.1.d				

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>2. <u>Description:</u> Some communications problems continue to exist in the notification and verification of messages between the state police warning point and the local EOCs. This was also noted in previous exercises.</p> <p><u>Recommendation:</u> The reliability of the primary radio communications system should either be improved, or alternate systems established.</p>	<p>F.1.a, F.1.d</p>				
<p><u>Plymouth EOC</u></p>					
<p>1. <u>Description:</u> Current population distribution data on residents and transients was neither posted nor available in the plan for designated evacuation areas.</p> <p><u>Recommendation:</u> Current population distribution data should be provided for residents and transients including the expected seasonal variations.</p>	<p>J.10.b</p>				

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>2. <u>Description:</u> Protective action instructions for sheltering and evacuating the public were not given in terms of familiar boundaries and landmarks. Sufficient information was not provided to transients. This information is important in an area with a large transient population.</p> <p><u>Recommendation:</u> Protective action instructions should be developed to reflect familiar boundaries and landmarks and to provide information to transients.</p>	E.6, E.7				
<p>3. <u>Description:</u> EBS stations were not monitored in the EOC and the available radio was not operating during part of the exercise.</p> <p><u>Recommendation:</u> EBS stations should be routinely monitored in the EOC and the equipment should be maintained.</p>	E.5				
<u>Duxbury EOC</u>					
<p>1. <u>Description:</u> Current population distribution data on residents and transients was neither posted nor available in the plan for evacuation areas.</p> <p><u>Recommendation:</u> Current population distribution data should be provided for residents and transients including the expected seasonal variations.</p>	J.10.b				

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<u>Carver EOC</u>					
<p>1. <u>Description:</u> The Carver EOC did not demonstrate the ability to mobilize staff and activate facilities promptly. The EOC staff notified on the call-up list did not report to the EOC, and carry out their assignments.</p> <p><u>Recommendation:</u> Designated staff should report to the EOC to represent the organizations designated in the plan. They should carry out specified assignments promptly. Procedures should be in place for activation of alternate staff to fill vacancies in first shift EOC appointments.</p>	E.2, A.2.a				
<p>2. <u>Description:</u> EOC management, as specified in the plan, did not participate in the exercise. There was no demonstration of the ability to make decisions and to coordinate emergency activities.</p> <p><u>Recommendation:</u> An accurate EOC management structure should be developed and specified in the town plan. Alternate staff should be designated, trained, and procedures put in place for their activation.</p>	A.1.d, A.1.b, A.2.a				

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TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>23. <u>Description:</u> EOC staff did not adequately demonstrate their ability to alert the public within the 10 mile EPZ. There was no coordinated effort among the participating staff for simulating sounding of sirens, disseminating instructional messages, or route alerting.</p> <p><u>Recommendation:</u> EOC staff should demonstrate the ability to alert the public in the affected portions of their community and disseminate initial instructional messages.</p>	E.6				
<p>1. <u>Description:</u> There was confusion among the participating Carver EOC staff on the location of the operations area.</p> <p><u>Recommendation:</u> The Carver EOC operations area should be clearly identified and the location should be provided in the town plan.</p>	H.3				

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*Deficiency.

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>2. <u>Description:</u> The EOC operations area utilized for this exercise was inadequate to support emergency operations. The displays and status boards that were located in the operations area were too small and were not visibly posted. The status board was not utilized and the emergency classification levels were not posted.</p> <p><u>Recommendation:</u> The EOC facilities should be improved; adequate displays should be usable and easy to read. The status boards should be utilized and the classification levels posted.</p>	H.3				
<p>3. <u>Description:</u> Round-the-clock staffing capabilities were not demonstrated.</p> <p><u>Recommendation:</u> Demonstrate the ability to staff the EOC round-the-clock.</p>	A.4				
<p>4. <u>Description:</u> The available telephone lines in the municipal dispatch center could become overloaded during an actual emergency. In addition, the dispatcher was overly busy with handling routine work as well as emergency telephone messages.</p> <p><u>Recommendation:</u> Separate telephone lines and communications staff should be assigned to municipal emergency operations. All equipment should be located near to the operations area or provisions should be made for prompt message transmittal between separate areas.</p>	H.3, F.1.e, F.1.b				

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TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<p>5. <u>Description:</u> Access to the EOC was not controlled. <u>Recommendation:</u> Access to the EOC should be controlled.</p>	D.3				
<p>6. <u>Description:</u> Access and traffic control points were not activated or simulated by the Carver EOC staff. Consequently, access was not restricted into the area under their jurisdiction which was being sheltered. Traffic control points were not available to provide assistance along the evacuation route. <u>Recommendation:</u> The EOC staff should demonstrate their organizational ability and the resources necessary to manage traffic and access control within their jurisdiction.</p>	J.10.k, J.10.g, J.10.j				
<u>Kingston EOC</u>					
<p>1. <u>Description:</u> There was some confusion among EOC staff on the definition and purpose of the State of Emergency Declaration by the Governor. <u>Recommendation:</u> The local plan should include a description of the State of Emergency Declaration and clearly distinguish it from the General Emergency. Additional training should be provided to all local emergency response personnel.</p>	A.2.a				

TABLE 2 Remedial Actions for Pilgrim Nuclear Power Station
(September 5, 1985)

Deficiencies/Areas Requiring Corrective Actions and RAC Recommendation for Corrective Action	FEMA-REP-1, Rev. 1, Element	State (S) and Local (L) Proposed Corrective Actions	Proposed Completion Date	FEMA Evaluation of State and Local Response	Actual Completion Date
<u>Marshfield EOC</u>					
<p>1. <u>Description:</u> Access control was neither ordered nor simulated by the Marshfield EOC. This community contained areas included in the shelter order as well as roadways leading into the area potential affected under the exercise scenario. <u>Recommendation:</u> Access control points should be established on roadways leading into an area covered by a protective action.</p>	J.10.j				

TABLE 1. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (I.e., Results)	Current Status
1. Information flow between the state and Area II EDCs was infrequent, and was sometimes erroneous, which resulted in misinformation and confusion at the Area II EDC. (4.1.1)	3/3/82	N/A	3	7	1.9, 10 a, 10.m	Massachusetts		Yes (6/29/83)	Communications equipment and its demonstration were excellent. (FR 1983; pg. 10).	C
2. State Police have responsibility for access control, but are not equipped with nor trained in the use of dosimeters. There were no provisions for determining dose rates, maintenance of dose records, or decontamination of personnel and equipment. Appropriate training should be provided to the State Police. (4.1.2)	3/3/82	N/A	20	10	K.1.a K.1.b M.1.c 0.1	Massachusetts	State police have received and are continuing to receive training in dosimeter use. (PEA 6/29/83)	Yes (6/29/83)	State police have been provided with appropriate dosimetry, and trained in its use in 1983, 1984, and 1985. (6/20/85 letter from Mass.)	C
3. The scenario allowed only 30 minutes for recovery and reentry operations. This is not sufficient time for meaningful evaluation. Early terminations of the exercise prevented any substantial activity in this area. (4.1.3)	3/3/82	N/A	35	23	N.1	Massachusetts	Recovery and reentry functions were tested successfully in 1984. (6/20/85 letter from Mass.)	Yes (6/29/83) Yes (9/5/85)	At the 1985 exercise sufficient time was not available at the end of the exercise for a full demonstration of recovery and reentry activities.	I

TABLE 3. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
4. In Duxbury, the sirens were inoperative, and mobile notification procedures were not used. The State should work with the utility and local government to correct the problem. (4.2.1)	3/3/82	N/A	13	5	E.6	Duxbury	The State did not plan to activate sirens on 3/3/82. Duxbury did not attempt to activate the system. All units were checked out during March-May, 1982, and a test of the system was successfully conducted in June 1982. (6/20/85 letter from Mass.)	Yes (6/29/83)	Alerting the public was simulated by sounding the sirens and dispatching route alerting teams and vehicles. (FR, 1983, pg. 27).	C
5. In Marshfield, the sirens were in place and were operational prior to the exercise, but there were no trained personnel available to activate the system. (4.2.2)	3/3/82	N/A	13	5	E.6	Marshfield	The State did not plan to activate the sirens on March 3, 1982. All Fire Department dispatchers were trained in siren activation procedures following the 1982 exercise. (6/20/85 letter from Mass.)	Yes (6/29/83)	Evidently training has been given to all firemen and some policemen in siren activation procedures. (FR 1983; pg. 35)	C
6. In Marshfield, dosimeters did not work properly. Faulty equipment makes the capability for exposure control questionable. Training in operation and maintenance of monitoring equipment is advised for improved capability. (4.2.3)	3/3/82	N/A	20	10	K.3.a K.3.b	Marshfield		Yes (6/29/83)	New equipment and training classes were given to the EOC staff and other personnel by the Boston Edison Company. (FR, 1983; pg. 35-36)	C
7. At the EOF the communications area and the assessment area are separated, which resulted in some communication difficulties. A reevaluation of communication equipment locations is recommended. (5.1.3)	3/3/82	N/A	5	16	F	Massachusetts		Yes (6/29/83)	Some communication problems still exist due to the separation of the various work areas at the EOF. (FR, 1983; pg. 14)	I
								Yes (9/5/85)	At the 1985 exercise the layout was still the same. Construction of a new EOF is in progress.	

TABLE 3. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-RI-P-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
8. The dispatcher at the State Police Headquarters in Middleboro had to handle all routine calls as well as the communications resulting from the power station emergency. These duties should be separated, and an additional dispatcher used in case of a real incident at the power station. (5.1.4)	3/3/82	N/A	5	1,14	F.1.a F.1.f	Massachusetts		Yes (6/19/83)	Communication was still a problem during the June 29, 1983 exercise. (see #2.1.7.1)	I
								Yes (9/5/85)	Although a clerical assistant was available during the 1985 exercise, the potential still exists for the radio dispatcher not being able to handle routine calls and radiological emergency calls simultaneously.	
9. There were some communication problems among the state EOC, the EOF, and the Area II EOC. A dedicated telephone line between the state EOC and the EOF is recommended. (5.1.5)	3/3/82	N/A	5	4	F.1	Massachusetts		Yes (6/29/83)	A deficiency was noted during the June 29, 1983 exercise. (see #2.1.2.1)	C
								Yes (9/5/85)	No dedicated telephone line was present at the 1985 exercise. However, no communications problems were observed due to lack of a dedicated line.	

TABLE 1. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Satisfactorily Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
10. Messages from the state EOC to the Area II EOC lacked technical information on which to base comprehensive decisions at the area level. In one case an error was made in sector selection at the Area II EOC. The EPZ maps and the sector diagram should be made compatible, and consistent nomenclature used. (5.1.6)	3/3/82	N/A	3	7	J	Massachusetts		Yes (6/29/83)	A deficiency was noted during the June 29, 1983 exercise. (See #2.1.2.1)	C
								Yes (9/5/85)	At the 1985 exercise, the state EOC passed technical information to the Area II EOC after it was received from the EOP. However, since the Area II EOC does not need technical details for their decision making, the original exercise inadequacy is considered closed. EPZ and sector diagram maps were effectively used during the exercise.	
11. Procedures for verification of messages at all levels need improvement. (5.1.7)	3/3/82	N/A	5	1	E.1	Massachusetts		Yes (6/29/83)		C
								Yes (9/5/85)	Verification of messages at the 1985 exercise was effectively demonstrated at the state EOC by waiting for the receipt of hard-copy messages before acting on verbal messages.	
12. Due to a faulty radio encoder that had just been installed but not tested, the Taunton EOC staff did not respond to the initial notification. This and backup equipment should be tested regularly. (5.1.8)	3/3/82	N/A	5	1	F.1, F.1	Massachusetts		Yes (6/29/83)		I
								Yes (9/5/85)	Not observed at 1985 exercise.	

TABLE 1. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
13. The Taunton EOC, the Hanover EOC, and the Red Cross at the Area II EOC used the Massachusetts number system for emergency classification, instead of the NUREG-0654 classification system. (S.1.10)	3/3/82	N/A	3	7	0.3	Massachusetts		Yes (6/29/83) Yes (9/5/85)	The NUREG-0654 classification system was used at the 1985 exercise.	C
14. Information flow among the EDF, the state EOC and the Area II EOC needs improvement to avoid problems such as incorrect selection of evacuation areas. A standard reporting format should be understood by all. (S.1.11)	3/3/82	N/A	3	7	1.8, E.1	Massachusetts		Yes (6/29/83) Yes (9/5/85)	Deficiency during June 29, 1983 exercise (see #2.1.1.1) Based on observations at the 1985 exercise, information flow still needs improvement. Very little technical information was transmitted from the EDF to the state EOC. The "Nuclear Power Plant Accident Communication Form" was not used consistently by the EDF and is not appropriate for all transmitted information. The Area II EOC director had to request clarification of evolving protective action recommendations.	I

TABLE 3. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
15. Further refinements in the content of EBS messages and in the procedures for activating the system are needed. Insufficient time was allowed for the EBS message to be transmitted before the sirens were sounded. The EBS message did not supply specific information on the meaning of sheltering or evacuation, how to do it, or where to go. The use of canned messages should be investigated. (5.1.12)	3/3/82	N/A	14	8	E.5	Massachusetts		Yes (6/29/83)	Deficiency during June 29, 1983 exercise. (See #2.1.1.2)	C
								Yes (9/5/85)	At the 1985 exercise, prescribed EBS messages were used and contained all appropriate information. EBS messages were simulated to be broadcast after a brief interval after sounding of sirens.	
16. Information pamphlets distributed to the public appeared to be outdated and in some cases contradictory to local plans. The state should take necessary corrective action. (5.1.13)	3/3/82	N/A	25	8	G.1, G.2	Massachusetts		Yes (6/29/83)		I
								Yes (9/5/85)	Updated (September 1985) pamphlets were distributed to the public and were observed during the 1985 exercise at the media center, Marshfield, Duxbury, and Plymouth. Not observed at Kingston. At Carver the phone number listed in the pamphlet is incorrect.	

TABLE 3. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
17. There were some problems with coordination of media releases, and information to the press was not always timely. The rapid scenario developments did not allow the preparation of news releases to keep up with the plant developments. Coordination between the media center and the state EOC was hampered by the inoperability of the hard-copy message transmission system and by busy telephone lines. Training in the use of the hard-copy system is recommended, along with the installation of a dedicated telephone line between the state EOC and the media center. Periodic updates by the media center should also be provided to media personnel in the state EOC. (5.1.14)	3/3/82	N/A	24	8	G.A.c	Massachusetts		Yes (6/29/83)	Hard copy of press releases could not be transmitted to the State EOC. Media briefings were thorough and accurate. (FR 1983; pg. 22)	C
								Yes (9/5/85)	At the 1985 exercise, media releases were adequately coordinated and timely, and hard-copy transmission of the releases was possible.	
18. Field monitoring teams had insufficient equipment for air sampling. Each team should have a SAM II or equivalent instrument to enable them to determine radioactive iodine concentrations in the field. The air-sampling technique needs to be modified because a 10-minute sampling time may cause worker exposure to be too long, especially in a high-	3/3/82	N/A	7	17	1	Massachusetts		Yes (6/29/83)	Air sampling equipment and techniques were adequate. (FR 1983; pg. 18)	C

TABLE 3. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NHRRC-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
<p>activity area. Communication between the EOP and the field team was weak. The field teams should report measurements when they are taken and not wait until they are requested. The collection and transmission of radiological data from the EOP and EOCs was not sufficiently timely to permit EOC health physics personnel to verify the accident assessment and recommended protective actions. (5.1.15)</p>										
<p>19. The Jordan Hospital lacks decontamination facilities, and used a regular examination room for decontamination. A separate facility is recommended. Ambulance personnel do not have low-level dosimeters, and it is not clear whether they have been trained in using them. Personnel monitoring equipment and training in its use should be provided. Personnel at the Bridgewater EOC were concerned about the lack of training they received in decontamination. Equipment and training should be evaluated and provided as necessary. (5.1.16)</p>	3/3/82	N/A	31	13	K,L,O	Massachusetts		<p>A fully equipped decontamination facility exists at the Jordan Hospital. This facility was built with utility assistance, and is exercised at least annually. (6/20/85 letter from Mass.)</p>	C	

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
20. The Bridgewater reception center needs additional equipment and trained personnel for proper screening of evacuees. (5.1.17)	3/3/82	N/A	27	12	D.3	Massachusetts		No (6/29/83)		I
21. The lack of recovery and reentry operations was a shortcoming of this exercise and should be addressed in future exercise preparations. The scenario also did not test laboratory analysis, decontamination, and ingestion pathway monitoring which was not an exercise objective. The exercise provided for only a token evacuation. (5.1.18)	3/3/82	N/A	35	23	N.1.a, N.1.b	Massachusetts	Recovery and reentry functions at the State EOC were tested successfully in 1984. (6/20/85 letter from Mass.)	Yes (6/29/83) Yes (9/5/85)	At the 1985 exercise sufficient time was not available at the end of the exercise for a full demonstration of recovery and reentry activities.	I
22. Displays at Marshfield could be improved so that they are more easily read and less confusing. (Status Board) (5.2.1)	3/3/82	N/A	3	3	J.10.a J.10.g	Marshfield		Yes (6/29/83) Yes (9/5/85)	Displays still need improvements. (FR 1983, pg. 34) The displays observed at the 1985 exercise were much improved and are considered adequate.	C
23. At Carver, the use of a status board is recommended. (5.2.5)	3/3/82	N/A	3	3	D.1	Carver		Yes (6/29/83)	Status board was utilized. (FR 1983, pg. 29)	C
24. At Carver, a security person should be stationed at the entrance of the EOC to restrict entrance and to maintain a log. (5.2.3)	3/3/82	N/A	3	3	A.2.a O.4.d	Carver		Yes (6/29/83)	Access to the EOC was controlled by a guard and a log was maintained. (FR 1983, pg. 30)	C

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Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
25. Security procedures need to be established at Kingston.	3/3/82	N/A	3	3	A.2.a 0.4.d	Kingston		Yes (6/29/83)	Security procedures were not established. (FR 1983, pg. 11)	C
								Yes (9/5/85)	At the 1985 exercise, a police officer was stationed at the entrance to the EOC.	
26. Security procedures need to be established at Marshfield.	3/3/82	N/A	3	3	A.2.a 0.4.d	Marshfield		Yes (6/29/83)	Entrance to the EOC was not controlled. (FR, 1983, pg. 35)	C
								Yes (9/5/85)	Security procedures were in place at the 1985 exercise. Access into the EOC was controlled.	
27. Internal communication needs improvement at all five local EOCs. (5.2.4)	3/3/82	N/A	5	4	F.1	Locals		Yes (6/29/83)	Internal communications at the local EOCs were improved. (FR 1983)	C
28. The locations of radio and telephone communication equipment in separate rooms at Carver led to confusion in operations. (5.2.4)	3/3/82	N/A	5	3,4	F.1	Carver		Yes (6/29/83)	An intercom has been installed. (FR 1983, pg. 30)	C
29. The locations of radio and telephone communication equipment in separate rooms at Marshfield led to confusion in operations. (5.2.4)	3/3/82	N/A	5	3,4	F.1	Marshfield		Yes (6/29/83)		C
								Yes (9/5/85)	At the 1985 exercise the radio and telephone communications equipment were located in the same area at the EOC.	

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Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
30. The locations of radio and telephone communication equipment in separate rooms at Plymouth led to confusion in operations. (5.2.4)	3/3/82	N/A	5	3,4	F.1	Plymouth		Yes (6/29/83)		C
								Yes (9/5/85)	Communications equipment was located in a separate room at the 1985 exercise to reduce noise. Communications were observed to function well.	
31. At Duxbury, oral messages being received and transmitted should be documented. (5.2.4)	3/3/82	N/A	3	3	F.1	Duxbury		Yes (6/29/83)	Messages were logged. (FR 1983, pg. 27)	C
32. Internal communication at Kingston can be improved by reduction in the noise level. The Kingston EOC used amateur radio for primary communications and commercial telephones for backup. (5.2.4)	3/3/82	N/A	3	3	F.1	Kingston		Yes (6/29/83)		C
								Yes (9/5/85)	Earphones were used at the 1985 exercise to effectively minimize the effect of noise on communications.	
33. Some additional training would improve emergency operations management at the local EOCs. (5.2.5)	3/3/82	N/A	3	3	N.O	Locals		Yes (6/29/83)	Emergency operations management was improved at the local EOCs. (FR 1983)	C
34. In Carver, department heads could use additional on-the-job training. (5.2.5)	3/3/82	N/A	3	3	N.O	Carver		Yes (6/29/83)	The entire staff was knowledgeable of their jobs. (FR 1983, pg. 30)	C
35. Checklists should be used in Duxbury; department heads should be trained in evacuation and notification procedures. (5.2.5)	3/3/82	N/A	3	3	N.O	Duxbury		Yes (6/29/83)	Checklists were used. (FR 1983, pg. 27)	C

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Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
36. In Kingston, additional oral briefings are recommended. (5.2.5)	3/3/82	N/A	3	3	N.O	Kingston		Yes (6/29/83)	Briefings were held. (FR 1983, pg. 32)	C
37. On-the-job training in Marshfield is recommended to improve the capabilities for involving specific response organizations, the use of the emergency classification system, and the knowledge of the local RERP. (5.2.5)	3/3/82	N/A	3	3	N.O	Marshfield		Yes (6/29/83) Yes (9/5/85)	Six members of the staff have received training. At the 1985 exercise the staff members were observed to be aware of the emergency classification system, use of dosimetry, and were knowledgeable of the local RERP.	C
38. Sirens were not activated in Duxbury and Marshfield. (5.2.6)	3/3/82	N/A	13	5	E.6	Duxbury Marshfield	The State did not plan to activate the siren on March 3, 1982. Duxbury did not attempt to activate the system. All units were checked out during March-May, 1982, and a test of the system successfully conducted in June 1982. (6/20/85 letter from Mass.)	Yes (6/29/83)	At Duxbury, alerting the public was simulated by sounding the sirens and dispatching route alerting teams and vehicles. (FR 1983, pg. 27) At Marshfield, evidently training has been given to all firemen and some policemen in siren activation procedures. (FR 1983, pg. 35)	C
39. Kingston believes that they need a mobile Public address system in addition to the sirens, but the vehicles required for this action may not be available in a real emergency. A further evaluation of this need and its requirements should be conducted. (5.2.6)	3/3/82	N/A	13	5	E.6	Kingston		Yes (6/29/83) Yes (9/5/85)	Route alerting was not performed. (FR 1983, pg. 33) Kingston has mobile public address systems on 12 fire and police department vehicles and one Civil Defense vehicle.	C

TABLE 3. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NRRIG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
40. The EBS was not activated in the Marshfield area because the station (96 PM) did not receive the necessary information from the Area II. (5.2.7)	3/3/82	N/A	13	5	E.5	Marshfield		Yes (6/29/83)	EBS activation was simulated. (FR 1983 pg. 35)	C
41. In Duxbury, MCDA emergency public information was available at the fire house and town offices, but it should have been mailed to the residents. Duxbury should work with the state to resolve differences. (5.2.8)	3/3/82	N/A	25	8	G.1, G.2	Duxbury		Yes (6/29/83)	At the 1985 exercise, it was established that emergency public information brochures have been distributed by the utility to the residents of Duxbury.	C
42. Emergency response procedures specified in the pamphlet distributed to the Kingston residents contradict those in the local plan regarding actions after siren activation. (5.2.8)	3/3/82	N/A	25	8	G.1, G.2	Kingston		Yes (6/29/83)	Not observed at the 1985 exercise.	I
43. Media personnel were allowed in the Plymouth EOC which added to the overcrowding of the small space. In the future, news media briefings should be held at the nearby media center. (5.2.9)	3/3/82	N/A	4	3	G.1.a	Plymouth		Yes (6/29/83)	At the 1985 exercise it was established that a procedure is in place to prevent the media from entering the EOC. All media briefings would be held in the nearby media center.	C

TABLE 3. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FRMA Objective	Exercise Objective	NUREG-0654 FDMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
44. Only two dosimeters were available at Carver. (S.2.10)	3/3/82	N/A	20	10	H.7 H.3	Carver		Yes (6/29/83)	Supplies of dosimeters still inadequate. (FR 1983, pg. 31)	C
								Yes (9/5/85)	At the 1985 exercise 60 each of low and medium range dosimeters and TLDs were available.	
45. Only one of the three dosimeters available at Marshfield worked properly. (S.2.10)	3/3/82	N/A	20	10	H.7 H.3	Marshfield		Yes (6/29/83)	New dosimetry equipment was available at the EOC. (FR 1983, pg. 35)	C
46. Exercise of recovery and reentry operations were objectives. However, the exercise terminated before they could be exercised. (S.2.11)	3/3/82	N/A	35	23	M, N.1.a, N.1.b	Localis		Yes (6/29/83)		I
								Yes (9/5/85)	Due to scenario limitations, there was not sufficient time available at the end of the 1985 exercise for a full demonstration of recovery and reentry activities. However, a good knowledge of required activities was evident by staff discussions at Marshfield and Duxbury.	

TABLE 1. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
47. Meteorological data received by the state EOC from the EOF were not received until almost an hour after the SITE [AREA] EMERGENCY was declared. Also, these data were transmitted by telephone and often illegibly recorded by the recipient. This added to confusion when an incorrect EPZ sector was recommended by the EOF for evacuation. The error apparently was due to a map reading error at the EOF. This error in sector identification was not corrected until 35 minutes later. (2.1.1.1)	6/29/83	5.1.11 (#14)	5	18,27,30	E.4.R, E.6	Massachusetts	Timely and accurate meteorological data should be transmitted from the EOF to the State EOC from the onset of the next exercise. Additional training should be provided for all emergency-response organizations, including the EOF, in accurate transmission and understanding of meteorological information, especially wind direction. Typed hard-copy meteorological data transmissions, to prevent the potential for misinterpretation of illegible handwritten messages, are advised. Maps at all organizations should be consistent with uniform orientation of North.	Yes (9/5/85)	Meteorological information was received at the state EOC from the EOF in a timely manner during the 1985 exercise. Errors in sector designations were eliminated by indicating both the direction from which the wind was blowing and the direction to which it was blowing.	C

MCDA/OEP Response

A new protective action recommendation form was developed by HDPH and BECo. Hard copies of this form will be transmitted to MCDA via telecopier. The form includes an EPZ diagram with compass headings, and space for a verbal description of the protective action recommendation.

(continued)

TABLE 3. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NEREC-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
47. (Cont'd)							Further, Executive Order 144 training sessions, attended by representatives of all State agencies which participate in emergency exercises and operations, now include a discussion of accurate transmission of meteorological data. New EPZ maps which have been developed will be equipped with pinwheels to aid in appropriate affected area identification. (6/20/85 letter from Mass.)			
48. Evacuation messages for the public sent over ERS and to local EDCs via the Area 11 EDC were delayed for an additional 30 minutes (beyond the 35 minutes described in the previous item) because the State EDC had difficulty translating EPZ sector information into local landmark information to facilitate evacuation. (2.1.1.2)	6/29/83	5.1.12 (#15)	5,13,15	18,20	E.6, E.7	Massachusetts	MCDA/OEP Response Geographic descriptions of sectors based upon commonly recognized landmarks are being developed by MCDA and will be available in written form at the State EDC by August 1, 1985. (6/20/85 letter from Mass.)	Yes (9/5/85)	At the 1985 exercise the EBS messages were transmitted promptly. New EPZ maps were used and there was no difficulty in translating EPZ sector information into local landmark information.	C
49. The Coast Guard elected not to send helicopters or boats to the plume. Notification of the boating public should be coordinated between the Coast Guard and the state. (2.1.1.3)	6/29/83		13,14	14,21	J.9.c	Massachusetts	MCDA/OEP Response A new memorandum of understanding was concluded with the U.S. Coast Guard in 1984. This agreement limits Coast Guard participation to the transport of Boston Edison personnel, specifically the Green Environmental Monitoring Team.	Yes (9/5/85)	At the 1985 exercise the U.S. Coast Guard operated in accordance with its new memorandum of understanding with the Commonwealth of Massachusetts and was not required to send helicopters or boats into the plume area to alert the boating public.	C

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Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
49. (Cont'd)							Notification of the Boating public will be achieved by: A) U.S. Coast Guard emergency information broadcast notice warnings to mariners via CH16 and CH22 VHF FM; B) Boston Edison Siren Notification; C) Local Harbormaster Craft. (6/20/85 letter from Mass.)			
50. Communication of significant information, including the sector to be evacuated, should be transmitted accurately. (2.1.2.1)	6/29/83	5.1.5 (#9)	14	31,21	F.1.d A.2.a	Massachusetts (EOF)	<u>MCDA/OEP Response</u> The recommended form was developed jointly by the utility and MDPH, and tested during a 1984 drill. New base maps, with a vertical north designation, have been developed and will be in place for the 1985 exercise. (A prototype form, and clearer "north" designations on maps, were put in place following the issuance of the 1983 FEMA report.) (6/20/85 letter from Mass.)	Yes (9/5/85)	At the 1985 exercise much information was transmitted from the EOF to the state EOC over the telephone from handwritten notes rather than using the available form. Also, most maps are simply labeled "not vertical north" instead of being reformatted.	I
51. It appeared that one MDPH monitoring team needed more training in certain aspects of off-site monitoring. Some of the NIAT staff were not sufficiently trained to perform field monitoring duties. (2.1.4.1)	6/29/83		7	5	0.4.c 1.8	Massachusetts	<u>MCDA/OEP Response</u> Regular training for all NIAT staff DPH is ongoing. Annual training for field monitoring has been augmented by BECo. (6/20/85 letter from Mass.)	Yes (9/5/85)	At the 1985 exercise both monitoring teams were observed to be sufficiently trained, and were familiar with equipment and procedures.	C

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Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
52. The primary system for notifying local communities of emergency levels and protective action was ineffective. Although telephone backup was used according to plan, the procedure was slow and messages were often late. (2.1.7.1)	6/29/83	5.1.4 (#8)	5	17,18 20	F.1.a	Massachusetts (State Police)	<p><u>MCDA/O&EP Response</u></p> <p>The system in question consists of a tone encoder on the Plymouth County Radio Net, and monitor tone-activated receivers on this net. Boston Edison has assigned two field service technicians to a field service, based in Kingston, to maintain this and other components of the Prompt Alert System on a full-time basis.</p> <p>Nonetheless, the system is less than ideal because it involves two steps (notification from the plant to State Police using a tone alert radio on a utility frequency, followed by notification to local warning points on a second tone-alert system). Therefore, MCDA has designed a high band FM system which will permit simultaneous notification to all warning points directly from the plant using a State Police frequency. The utility is in the process of procuring this system for 1985 installation. (6/20/85 letter from Mass.)</p>	Yes (9/5/85)	Notification was still a problem at the 1985 exercise. The new radio system has not been installed. In some cases the local EOCs had difficulty in receiving the transmissions and in verification of the transmissions by radio. Telephone was used as a backup.	I

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Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
53. The state police have had, and are continuing to receive, training in the use of survey meters and dosimeters, but the force does not seem to be sufficiently aware of the steps to be taken for availing itself of decontamination services. (2.1.1.2)	6/29/83	4.1.2 (#2)	20	5.34	K.5.b, K.3.a, K.3.b	Massachusetts (State Police), + Mass DPH	<p><u>MCDA/OEP Response</u></p> <p>State Police have access to showers and change of clothes at Troop D Headquarters in Middleboro. These facilities will be the primary decontamination facilities available for use by State Police personnel. Should these facilities be activated State police will request on-site supervision of decontamination activities by a NIAT member. The availability of the decontamination capability and the availability of NIAT staff to supervise personnel decontamination will be noted in Troop D procedures currently under review. The new procedures will be in place by August 1, 1985. (6/20/85 letter from Mass.)</p>	Yes (9/5/85)	At the 1985 exercise it was established that training in decontamination procedures and locations of decontamination centers has been made available to the entire State Police Troop D force. Police officers were observed to be knowledgeable in the use of dosimetry and in decontamination procedures. However, the Troop D procedures have not yet been updated.	C
54. Recovery and reentry plans and procedures are not incorporated in the local plan. (2.2.1.1)	6/29/83		35	10	N.1	Plymouth, + Mass DPH	<p>According to MCDA 12/10/84 letter, town revised plan to include recovery and reentry.</p> <p><u>MCDA/OEP Response</u></p> <p>New recovery and reentry procedures have been developed by the Radiation Control Program of the Department of Public Health. These procedures have been included in the Plymouth Town RERP. (6/20/85 letter from Mass.)</p>	Yes (9/5/85)	<p>FEMA is still waiting for a copy of the revised plan.</p> <p>At the 1985 exercise it was observed that the recovery and reentry procedures are now provided in the plan (Rev. 5, May 1985, Annex 1). However, FEMA has not received a revised version of the Plymouth plan.</p>	I

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Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
55. Dosimeter readings were only read and recorded when dosimeters were issued and when returned. (2.2.1.2)	6/29/83		35	10	K.3.b	Plymouth, + Mass DPH	Dosimeter issue corrected by proper demonstration during 1984 drill.	8/15/84 drill	Dosimetry kits were observed at the 1985 exercise. Procedure in use was to read dosimeters every 15 minutes and report any increase in reading.	C
							<u>MCDA/OEP Response</u>	Yes (9/5/85)		
							Improved dosimetry capabilities are currently being developed. Anticipated improvements call for providing each emergency worker with a dosimetry kit. The kit consists of a CDV-138, a CDV-730, a TLD and a set of instructions in a zip-lock bag. The instructions include guidance for charging and wearing the dosimetry. Instructions also include recommendations to check self-reading dosimeters several times per hour. Emergency workers are informed to report back to their RADEF officers as predetermined exposures are reached. Reporting begins with attainment of the 175 mR level. Training in the uses and reporting intervals is included in ongoing refresher training for local emergency response personnel. (6/20/85 letter for Mass.)			

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Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
56. The single telephone in the EDC is not sufficient when there is substantial communications activity. (2.2.2.1)	6/29/83		5	18	H.3	Duxbury	Two incoming telephone lines have been added. <u>MCDA/OEP Response</u> A new telephone line will be established at the Duxbury EDC. (6/20/85 letter from Mass.)	Yes (9/5/85)	At the 1985 exercise there were two telephone lines. One was for use by EDC staff and the other was for use of the Civil Defense Director.	C
57. Recovery and reentry plans and procedures are not covered in the local plan. (2.2.2.2)	6/29/83		35	10	M.1	Duxbury, + Mass DPH	Recovery and reentry procedures have been incorporated into the plan (11/21/84 letter from Duxbury). <u>MCDA/OEP Response</u> New recovery and reentry procedures have been developed by the Radiation Control Program of the Department of Public Health. These procedures have been incorporated into the Duxbury Town Plan. (6/20/85 letter from Mass.)	Yes (9/5/85)	At the 1985 exercise it was observed that recovery and reentry procedures are now covered in the local plan (Annex L of May 1985 revision). However, FEMA has not received a revised copy of the plan.	I
58. Low-range dosimeters (0-200 mR) were not issued, nor is it apparent that there is any intent to issue them in accordance with their local plan. (2.2.2.3)	6/29/83		20	5	K.3.a, K.3.b	Duxbury, + Mass DPH	A simulated method of distribution and follow-up procedures were available at the 8/15/84 drill (11/21/84 letter from Duxbury). <u>MCDA/OEP Response</u> Improved dosimetry capabilities are currently being developed. Anticipated improvements call for providing each emergency worker with a dosimetry kit. The kit consists of a CDV-138, a CDV-730,	Yes (9/5/85)	Both low and mid-range dosimeters were available and issued to emergency workers at the 1985 exercise.	C

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58. (Cont'd)							a TLD and a set of instructions in a zip-lock bag. The instructions include guidance for charging and wearing the dosimetry. Instructions also include recommendations to check self-reading dosimeters several times per hour. Emergency workers are informed to report back to their RADEF officers as predetermined exposures are reached. Reporting begins with attainment of the 175 mR level. Training in the uses and reporting intervals is included in ongoing refresher training for local emergency response personnel. (6/20/85 letter from Mass.)			
59. Recovery and reentry procedures are not included in the Carver local plan. (2.2.3.1)	6/29/83		35	10	N.1	Carver, + Mass DPH	<u>MCDA/OEP Response</u> New recovery and reentry procedures have been developed by the Radiation Control Program of the Department of Public Health. These procedures will be incorporated into the Carver Town RERP. (6/20/85 letter from Mass.)	Yes (9/5/85)	At the 1985 exercise it was observed that recovery and reentry procedures are available in the local plan. However, FEMA has not received a copy of the revised plan for review of the adequacy of these procedures.	1

TABLE 1. Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-R-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
60. The civil defense director did not acquire needed information in a timely manner, particularly during the GENERAL EMERGENCY action level. (2.2.4.1)	6/29/83		5,3	16,18	A.1.d	Kingston	<p><u>MCDA/OEP Response</u></p> <p>The Kingston Civil Defense director noted the time lapses as suggested by the FEMA observers, and being made aware of the problem strove to improve the information gathering procedure during the 1984 exercise.</p> <p>MCDA and Kingston officials believe marked improvement has been made since 1983 (see August 15, 1984 FEMA exercise report stating that the Kingston staff and director provided good emergency operations management). (6/20/85 letter from Mass.)</p>	<p>Yes 8/15/84 drill</p> <p>Yes (9/5/85)</p>	<p>Drill demonstrated good emergency operations management. No problems encountered.</p> <p>At the 1985 exercise the Civil Defense Director acquired needed information immediately when needed. The new communications system directly to the Area 11 EOC functioned well.</p>	C
61. Recovery and reentry procedures are not covered in the local plan. (2.2.4.2)	6/29/83		35	10	N.1	Kingston, + Mass DPH	<p>Recovery and reentry procedures have been incorporated into the town plan. (11/9/84 letter from Kingston)</p> <p><u>MCDA/OEP Response</u></p> <p>New recovery and reentry procedures have been developed by the Radiation Control Program of the Department of Public Health. These procedures will be incorporated in to the Kingston Town RERP. (6/20/85 letter from Mass.)</p>	<p>Yes (9/5/85)</p>	<p>At the 1985 exercise it was observed that recovery and reentry procedures are now included in the local plan (Annex 1). However, FEMA has not received a copy of the revised plan for review of the adequacy of these procedures.</p>	I

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NDRIC-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
62. Sufficient furniture such as tables, desks, and telephones for emergency staff was not available in the EOC, nor was backup power for communication. (2.2.5.1)	6/29/83		5	18	F.1.b	Marshfield	One desk has been added and additional communication equipment is being negotiated. (11/14/84 letter from Marshfield)	Yes (9/5/85)	Additional furniture has been obtained for the EOC and was observed to be adequate at the 1985 exercise.	C
							<u>MCDA/OEP Response</u>			
							MCDA is attempting to locate furniture to supplement resources at the Town of Marshfield's Emergency Operations Center. Backup power for the Marshfield local EOC will be provided by MCDA on an emergency request basis. Telephone lines will be established at the Marshfield EOC. (6/20/85 letter from Mass.)			
63. Recovery and reentry procedures are not included in the local plan. (2.2.5.2)	6/29/83		35	10	M.1	Marshfield, + Mass DPH	Recovery and reentry procedures have been added to the plan, according to town officials. (11/14/84 letter from Marshfield)	Yes (9/5/85)	At the 1985 exercise it was observed that recovery and reentry procedures have been added to the local plan (Annex I, May 1985). However, FEMA has not received a copy of the revised plan for review of the adequacy of these procedures.	I
							<u>MCDA/OEP Response</u>			
							New recovery and reentry procedures have been developed by the Radiation Control Program of the Department of Public Health. These procedures have been included in the Marshfield Town RERP. (6/20/85 letter from Mass.)			

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
68. Difficulty with determining some of the monitoring point locations was observed. The controller's map conflicted with a commercial atlas in regards to the designations of several roads. (2.1.4.1)	9/5/85		4,6	4,6	1.7, 1.8, 1.11	Massachusetts				1
69. Field monitoring teams do not have any backup communications capabilities. (2.1.4.2)	9/5/85		5	5	F.1.d	Massachusetts				1
70. The objective to demonstrate the radiological monitoring capability for evacuees and vehicles was not demonstrated because there were no trained personnel present at the Taunton Reception Center to conduct radiological monitoring. (2.1.5.1-D). <u>DEFICIENCY.</u>	9/5/85		27	28	K.3.a, O.4.c, J.12	Massachusetts				1
71. Taunton EOC staff were not knowledgeable in the proper use of dosimetry. (2.1.5.1)	9/5/85		20	21	K.3.a, K.3.b	Massachusetts				1
72. There are some questions as to whether the existing local agreement to have the Red Cross do the registration at the Taunton Reception Center is compatible with the overall State/Red Cross Agreement. The Red Cross normally concentrates its staff on the mass care functions. (2.1.5.2)	9/5/85		27	28	A.1, A.3, J.12	Massachusetts				1

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
64. There was very limited technical information coming to the State EOC from the EOF regarding plant conditions and the reasons for emergency action levels, which also limited information flow to the Area II and local EOCs. (2.1.1.1)	9/5/85	5.1.11 (FR 9/82) (#14)	5.10	5.11	1.10	Massachusetts				I
65. Because of scenario limitations, a full demonstration of recovery and reentry activities was not conducted at the state EOC. (2.1.1.2)	9/5/85	4.1.3 (FR 9/82) (#3)	35	36	M.1, M.3, M.4	Massachusetts				I
66. Dose projections and protective action recommendations were done by the utility at the EOF. The state personnel at the EOF did not perform independent analysis and did not inquire as to the assumptions that were used by the utility in their analysis. (2.1.2.1)	9/5/85		10	11	1.10	Massachusetts				I
67. Although the state DPH staff at the EOF were included in detailed briefings by the utility as to plant status and the radiological significance of the plant status, the DPH staff did not pass on this detailed information to the state EOC. Because of this, the EOC staff had very limited technical information to use as a basis for decision making. (2.1.2.2)	9/5/85		3,5,10	3,5,11	1.10	Massachusetts				I

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NIREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (I.e., Results)	Current Status
73. The ambulance had inadequate communications to the hospital, EDF or local DOC. (2.1.6.1)	9/5/85		5,30	5,31	F.2	Massachusetts			1	
74. The Jordan Hospital had no special emergency communications links with radiological laboratories, other hospitals, the EDF or local DOCs. (2.1.6.2)	9/5/85		5,31	5,32	F.2	Massachusetts			1	
75. The ambulance had only one radiation protection suit. (2.1.6.3)	9/5/85		20,30	21,31	L.1, L.4	Massachusetts			1	
76. The ambulance crew did not have low-level dosimeters and was not familiar with the operation of radiation monitoring equipment. (2.1.6.4)	9/5/85		20,30	21,31	L.1, L.4, K.1.a	Massachusetts			1	
77. An existing examination room was used at the Jordan Hospital for the initial evaluation of the contaminated victim rather than a small decontamination room, presenting the problem of decontaminating a large area and possibly spreading radioactive particles throughout the hospital and beyond. (2.1.6.5)	9/5/85		31	32	L.1	Massachusetts			1	

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
78. Although a clerical assistant has been provided for the radio dispatcher at the state police warning point, the potential still exists for the radio dispatcher not being able to handle both routine calls and radiological emergency calls simultaneously. (2.1.7.1)	9/5/85	5.1.4 (FR 9/82) (#8)	2,5	2,5	F.1.a, F.1.d	Massachusetts (State Police)				I
79. Some communications problems continue to exist in the notification and verification of messages between the state police warning point and the local EOCs. This was also noted in previous exercises. (2.1.7.2)	9/5/85	2.1.7.1 (FR 9/83) (#52)	5	5	F.1.a, F.1.d	Massachusetts				I
80. Current population distribution data on residents and transients was neither posted nor available in the plan for designated evacuation areas. (2.2.1.1)	9/5/85		4,15	4,16	3.10.b	Plymouth				I
81. Protective action instructions for sheltering and evacuating the public were not given in terms of familiar boundaries and landmarks. Sufficient information was not provided to transients. This information is important in an area with a large transient population. (2.2.1.2)	9/5/85		14	15	E.6, E.7	Plymouth				I

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
82. ERS Stations were not monitored in the EOC and the available radio was not operating during part of the exercise. (2.2.1.3)	9/5/85		5,13	5,14	E.5	Plymouth				1
83. Current population distribution data on residents and transients was neither posted nor available in the plan for evacuation areas. (2.2.2.1)	9/5/85		4,15	4,16	J.10.b	Duxbury				1
84. The Carver EOC did not demonstrate the ability to mobilize staff and activate facilities promptly. The EOC staff notified on the call-up list did not report to the EOC, and carry out their assignments. (2.2.3.1-D) <u>DEFICIENCY.</u>	9/5/85		1	1	E.2, A.2.a	Carver				1
85. EOC management, as specified in the plan, did not participate in the exercise. There was no demonstration of the ability to make decisions and to coordinate emergency activities. (2.2.3.2-D) <u>DEFICIENCY.</u>	9/5/85		1,3	1,3	A.1.d, A.1.b, A.2.a	Carver				1

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
86. EOC staff did not adequately demonstrate their ability to alert the public within the 10 mile EPE. There was no coordinated effort among the participating staff for simulating sounding of sirens, disseminating instructional messages, or route alerting. (2.2.3.3-0). DEFICIENCY.	9/5/85		13	14	E.6	Carver			1	
87. There was confusion among the participating Carver EOC staff on the location of the operations area. (2.2.3.1)	9/5/85		1,3,4	1,3,4	H.3	Carver			1	
88. The EOC operations area utilized for this exercise was inadequate to support emergency operations. The displays and status boards that were located in the operations area were too small and were not visibly posted. The status board was not utilized and the emergency classification levels were not posted. (2.2.3.2)	9/5/85	5.2.5 (FR 9/82) (#34)	4	4	H.3	Carver			1	
89. Round-the-clock staffing capabilities were not demonstrated. (2.2.3.3)	9/5/85		2	2	A.4	Carver			1	

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilegrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
90. The available telephone lines in the municipal dispatch center could become overloaded during an actual emergency. In addition, the dispatcher was overly busy with handling routine work as well as emergency telephone messages. (2.2.3.4)	9/5/85		2,5	2,5	B.3, F.1.e, F.1.b	Carver				1
91. Access to the EOC was not controlled. (2.2.3.5)	9/5/85	5.2.3 (PR 9/82) (#24)	4	4	D.3	Carver				1
92. Access and traffic control points were not activated or simulated by the Carver EOC staff. Consequently, access was not restricted into the area under their jurisdiction which was being sheltered. Traffic control points were not available to provide assistance along the evacuation route. (2.2.3.6)	9/5/85		17	16,17	J.10.k, J.10.g, J.10.j	Carver				1
93. There was some confusion among EOC staff on the definition and purpose of the State of Emergency Declaration by the Governor. (2.2.4.1)	9/5/85	2.2.4.1 (PR 9/83) (#60)	3	3	A.2.a	Kingston				1

TABLE 3 Deficiencies and Areas Requiring Corrective Actions -- Pilgrim Nuclear Power Station

Issue Description	Exercise Date	Previously Identified Issue	FEMA Objective	Exercise Objective	NUREG-0654 FEMA-REP-1 Rev. 1 Reference	Jurisdiction	Action Taken	Objective Subsequently Tested (Exercise Date)	Corrective Action Verified (i.e., Results)	Current Status
96. Access control was neither ordered nor simulated by the Marshfield EOC. This community contained areas included in the shelter order as well as roadways leading into the area potentially affected under the exercise scenario. (2.2.5.1)	9/5/85		3	3	J.10.1	Marshfield				I

Issue Description: All issues described are Areas Requiring Corrective Action, except for those specifically identified as Deficiencies.

NOTES: Issue Identification Code Numbers: Identification number which appears in parentheses after the issue description and, where appropriate, in the column for previously identified issues. The first two or three digits refer to the report section number in which the issue is presented. The last digit refers to the specific number of the issue as listed in the report section.

Previously Identified Issue: References the issue identification number, and the number of the issue as listed in this table.

FEMA Objective: From the list of FEMA's standard 35 core objectives.

Exercise Objective: From the listing of state's exercise objectives as presented in each of the post exercise assessment reports.

Action Taken: The action taken by the state and local jurisdictions in response to the proposed actions.

Objective Subsequently Tested: Indicates whether or not the associated objectives have been tested at a subsequent exercise. Also provides the exercise date.

Corrective Action Verified: Describes the results of the corrective actions as observed during the exercise.

Current Status: C = Complete
I = Incomplete

Other Abbreviations: N/A = Not applicable
FR = Final Report
PEA = Post Exercise Assessment

TABLE 4 Status of Objectives — Pilgrim Nuclear Power Station (Cont'd)

Sheet 2 of 5

FEMA Core Objectives	Year of Exercise	Objective Overall Met for Site	Massachusetts EOC	EOF	Area II Civil Defense Office	Radiological Teams/Laboratory	Reception Centers	Emergency Medical Services	Middleborough (State Police)	Media Center	Carver	Duxbury	Kingston	Marshfield	Plymouth
9. Demonstrate appropriate equipment and procedures for collection, transport and analysis of samples of soil, vegetation, snow, water and milk.	1982		-	-	-	-	-	-	-	-	-	-	-	-	-
	1983		-	-	-	A	-	-	-	-	-	-	-	-	-
	1985		-	-	-	N	-	-	-	-	-	-	-	-	-
10. Demonstrate ability to project dosage to the public via plume exposure, based on plant and field data, and to determine appropriate protective measures, based on PAGs, available shelter, evacuation time estimates, and all other appropriate factors.	1982		A	A	-	-	-	-	-	-	-	-	-	-	-
	1983		A	-	-	-	-	-	-	-	-	-	-	-	-
	1985		I	I	-	-	-	-	-	-	-	-	-	-	-
11. Demonstrate ability to project dosage to the public via ingestion pathway exposure, based on field data, and to determine appropriate protective measures, based on PAGs and other relevant factors.	1982		N	-	-	-	-	-	-	-	-	-	-	-	-
	1983		A	-	-	-	-	-	-	-	-	-	-	-	-
	1985		N	-	-	-	-	-	-	-	-	-	-	-	-
12. Demonstrate ability to implement protective actions for ingestion pathway hazards.	1982		N	-	-	-	-	-	-	-	-	-	-	-	-
	1983		A	-	-	-	-	-	-	-	-	-	-	-	-
	1985		N	-	-	-	-	-	-	-	-	-	-	-	-
13. Demonstrate ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes.	1982		A	A	A	-	-	-	-	-	A	I	I	I	A
	1983		I	A	I	-	-	-	-	-	A	A	A	A	A
	1985		A	A	A	-	-	-	-	-	I	A	A	A	A

TABLE 4 Status of Objectives — Pilgrim Nuclear Power Station (Cont'd)

Sheet 3 of 5

FEMA Core Objectives	Year of Exercise	Objective Overall Met for Site	Massachusetts											
			EOC	EOF	Area II Civil Defense Office	Radiological Teams/Laboratory	Reception Centers	Emergency Medical Services	Middleborough (State Police)	Media Center	Carver	Duxbury	Kingston	Marshfield
14. Demonstrate ability to formulate and distribute appropriate instructions to the public, in a timely fashion.	1982		I	-	-	-	-	-	-	A	A	A	A	A
	1983		I	I	-	-	-	-	-	N	N	N	N	N
	1985		A	-	-	-	-	-	-	A	I	A	A	I
15. Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the plume EPZ.	1982		N	N	N	N	N	N	N	N	N	N	N	N
	1983		I	-	-	-	-	-	-	A	A	A	A	A
	1985		A	-	-	-	-	-	-	-	-	-	-	I
16. Demonstrate the organizational ability and resources necessary to deal with impediments to evacuation, as inclement weather or traffic obstructions.	1982		N	-	N	-	-	-	-	N	N	N	N	N
	1983		N	-	N	-	-	-	-	N	N	N	N	N
	1985		N	-	-	-	-	-	-	N	N	N	N	N
17. Demonstrate the organizational ability and resources necessary to control access to an evacuated area.	1982		N	N	N	N	N	N	N	N	N	N	N	N
	1983		A	-	-	-	-	-	-	N	N	N	N	N
	1985		A	-	-	-	-	-	-	I	A	A	A	A
18. Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of mobility-impaired individuals within the plume EPZ.	1982		N	N	N	N	N	N	N	N	N	N	N	N
	1983		A	-	-	-	-	-	-	N	N	N	N	N
	1985		N	-	-	-	-	-	-	N	N	N	N	N
19. Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of schools within the plume EPZ.	1982		N	-	-	-	-	-	-	N	N	N	N	N
	1983		A	-	-	-	-	-	-	N	N	N	N	N
	1985		N	-	-	-	-	-	-	N	N	N	N	N

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DOCKETED
USNRC

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
[Docket Nos. 50-352-~~OLA~~ (Check Valve) 86 MAR 20 P2:49
& 50-352-~~OLA-2~~ (Containment Isolation)]

OLA/OLA-2

OFFICE OF THE
DOCKETING
BRANCH

PHILADELPHIA ELECTRIC COMPANY
(LIMERICK GENERATING STATION, UNIT 1)

Assignment of Atomic Safety and Licensing
Appeal Board

Notice is hereby given that, in accordance with the authority conferred by 10 CFR §2.787(a), the Chairman of the Atomic Safety and Licensing Appeal Panel has assigned the following panel members to serve as the Atomic Safety and Licensing Appeal Board for this operating license amendment proceeding:

Thomas S. Moore, Chairman
Dr. Reginald L. Gotchy
Howard A. Wilber

C. Jean Shoemaker
C. Jean Shoemaker
Secretary to the
Appeal Board

Dated: March 19, 1986

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

PHILADELPHIA ELECTRIC COMPANY

(Limerick Generating Station, Unit 1)

Docket No.(s) 50-352-OLA/OLA-2

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing FRN Assignment of ASLAB have been served upon the following persons in accordance with the requirements of 10 CFR section 2.712.

Atomic Safety and Licensing Appeal
Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
Ivan W. Smith, Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
Richard F. Cole
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
Gustave A. Linenberger, Jr.
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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Chairman
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Ambler, PA 19002

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Assistant Consumer Advocate
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Harrisburg, PA 17120

Barry M. Hartman, Esq.
Deputy General Counsel
Governor's Energy Council
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Harrisburg, PA 17101

Thomas M. Gerusky, Director
Bureau of Radiation Protection
Department of Environmental Resources
Third and Locust Streets, 5th Floor
Harrisburg, PA 17120

Robert L. Anthony
Box 186
Moylan, PA 19065

James T. Wiggins
Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 47
Sanatoga, PA 19464

Dated at Washington, D.C. this
20 day of March 1986



Office of the Secretary of the Commission

VERMONT YANKEE NUCLEAR POWER CORPORATION



RD 5, Box 169, Ferry Road, Brattleboro, VT 05301

REPLY TO
ENGINEERING OFFICE
1671 WORCESTER ROAD
FRAMINGHAM, MASSACHUSETTS 01701
TELEPHONE 617-872-8100

March 14, 1986
FVY 86/21

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Office of Nuclear Reactor Regulation
Mr. Vern Rooney, Senior Project Manager
BWR Project Directorate No. 2
Division of BWR Licensing

References: (a) License No. DPR-28 (Docket No. 50-271)
(b) Letter, USNRC to VYNPC, dated June 3, 1977
(c) Letter, YAEC to USNRC, WYR 80-83, dated July 24, 1980
(d) Letter, VYNPC to USNRC, FVY 84-46, dated May 15, 1984
(e) Letter, VYNPC to USNRC, FVY 84-129, dated November 2, 1984

Subject: Degraded Grid Protective System - Clarification of Proposed
Technical Specification Change No. 122

Dear Sir:

The purpose of this letter is to respond to the NRC staff's recent request for clarification concerning the subject Proposed Change, submitted November 2, 1984 (Reference (e)). Specifically, clarification was requested for Note 10 to Table 4.2.7 (Page 61).

The proposed Note 10 to Table 4.2.7 reads, "Functional tests are not required for this instrumentation. The calibration performed once per operating cycle will adequately demonstrate proper equipment operation." The intent of this note is not to indicate that functional testing will not be performed; but rather to state that no separate functional test of the instrumentation is required. Vermont Yankee will functionally test the instrumentation via the relay calibration surveillance and the integrated ECCS tests which are performed each outage. We believe this clarification adequately addresses the staff's concern; however, in order to prevent any future confusion, attached please find a revised Page 61 which clarifies the intent of Note 10 to Table 4.2.7.

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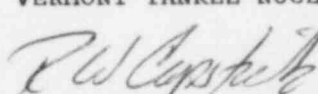
United States Nuclear Regulatory Commission
Attention: Mr. Vern Rooney

March 14, 1986
Page 2

Should you have further questions or require additional information regarding this matter, please do not hesitate to contact me.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION



R. W. Capstick
Licensing Engineer

RWC/no

Attachment

cc: Mr. Carl Woodard, USNRC, Region 1

VYNPS

TABLE 4.2 NOTES

1. Initially once per month; thereafter, a longer interval as determined by test results on this type of instrumentation.
2. During each refueling outage, simulated automatic actuation which opens all pilot valves shall be performed such that each trip system logic can be verified independent of its redundant counterpart.
3. Trip system logic calibration shall include only time delay relays and timers necessary for proper functioning of the trip system.
4. This instrumentation is excepted from functional test definition. The functional test will consist of injecting a simulated electrical signal into the measurement channel.
5. Check control rod position indication while performing the surveillance requirement of Section 3.3.
6. Functional tests, calibrations and instrument checks are not required when these instruments are not to be operable or tripped. Functional tests shall be performed before each startup with a required frequency not to exceed once per week. Calibration shall be performed prior to or during each startup or controlled shutdown with a required frequency not to exceed once per week. Instrument checks shall be performed at least once per day during those periods when instruments are required to be operable.
7. This instrumentation is excepted from the functional test definitions and shall be calibrated using simulated electrical signals once every three months.
8. Functional tests and calibrations are not required when systems are not required to be operable.
9. The thermocouples associated with safety/relief valves and safety valve position, that may be used for backup position indication, shall be verified to be operable every operating cycle.
10. Separate functional tests are not required for this instrumentation. The calibration and integrated ECCS tests which are performed once per operating cycle will adequately demonstrate proper equipment operation.

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SERVED MAR 20 1986

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USNRC
March 19, 1986

UNITED STATES OF AMERICA '86 MAR 20 10:20
NUCLEAR REGULATORY COMMISSION

OFFICE OF
DOCKETING & RECORDS
BOARD

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
KERR-MCGEE CHEMICAL)	Docket No. 40-2061-ML
CORPORATION)	ASLBP No. 83-495-01-ML
)	
(West Chicago Rare Earths)	
Facility))	
)	
(Kress Creek Decontamination))	Docket No. 40-2061-SC
)	Source Material License
)	No. STA 583
)	ASLBP No. 84-502-01-SC
)	

MOTION FOR ESTABLISHMENT OF DATE FOR
NRC STAFF RESPONSE TO KERR-MCGEE
MOTION TO COMPEL PRODUCTION OF DOCUMENTS

On March 4, 1986, Kerr-McGee Chemical Corporation filed a "Motion to Compel Production of Documents Relating to the NRC Staff Involvement In the State of Illinois' Effort to Become an 'Agreement State'". The certificate of service states that Staff counsel was served by hand on that date. However, as indicated by the certificate, service was by delivery to the NRC's offices at 1717 H Street, N.W., Washington, D.C. on March 4th. Staff counsel has discussed this matter with counsel for Kerr-McGee and indicated that because of delay in receipt of the motion the Staff would require until March 24, 1986 to respond to the motion. Kerr-McGee has no objection to the Staff responding by that date.

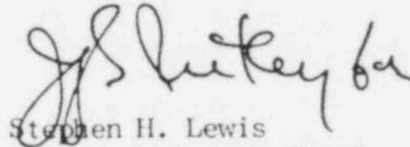
Since there may be ambiguity as to the due date for the Staff's response, the Staff respectfully requests the Atomic Safety and Licensing

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Board to designate March 24, 1986 as the date for the Staff's response to the motion to compel.

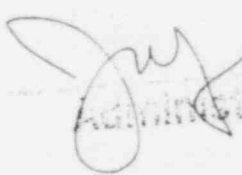
Respectfully submitted,



Stephen H. Lewis
Deputy Assistant Chief
Hearing Counsel

Dated at Bethesda, Maryland
this 19th day of March, 1986

GRANTED
For the Licensing Board



3/19/86
Administrative Judge

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

KERR-MCGEE CHEMICAL CORPORATION

(Kress Creek Decontamination)

Docket No.(s) 40-2061-SC

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB grant of motion to est date have been served upon the following persons in accordance with the requirements of 10 CFR section 2.712.

Administrative Judge
John H. Frye, III.
Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
Jerry R. Kline
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
James H. Carpenter
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Stephen H. Lewis, Esq.
Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, DC 20555

John C. Berghoff, Jr., Esq.
Chadwell & Kayser, Ltd.
8500 Sears Tower
Chicago, IL 60606

Richard A. Meserve, Esq.
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P.O. Box 7566
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Mead Hedglon, Esq.
Kerr-McGee Corporation
Kerr-McGee Center
Oklahoma City, OK 73125

Stephen W. Seiple, Esq.
Department of Nuclear Safety
1035 Outer Park Drive
Springfield, IL 62704

Docket No.(s) 40-2061-SC

Anne Rapkin, Esq.
Assistant Attorney General
Office of the Attorney General
160 North LaSalle Street
Chicago, IL 60601

Dated at Washington, D.C. this
20 day of March 1986



Office of the Secretary of the Commission

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

KERR-MCGEE CHEMICAL CORPORATION

(West Chicago Rare Earths Facility)

Docket No. (s) 40-2061-ML

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB grant of motion to est date have been served upon the following persons in accordance with the requirements of 10 CFR section 2.712.

Administrative Judge
John H. Frye, III, Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
Peter A. Morris
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Administrative Judge
James H. Carpenter
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, DC 20555

John C. Berghoff, Jr., Esq.
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8500 Sears Tower
Chicago, IL 60606


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Mead Hedglon, Esq.
Kerr-McGee Corporation
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Oklahoma City, OK 73125

Stephen W. Seiple, Esq.
Department of Nuclear Safety
1035 Outer Park Drive
Springfield, IL 62704

Anne Rapkin, Esq.
Assistant Attorney General
Office of the Attorney General
160 North LaSalle Street
Chicago, IL 60601

Dated at Washington, D.C. this
20 day of March 1986



Office of the Secretary of the Commission

MAR 17 1986

Docket No. 030-11139

License No. 07-16499-01

Allied Chemical Corporation
ATTN: Mr. Herbert G. Albrecht
Supervisor, Industrial Hygiene
Delaware Valley Works - South
Claymont, Delaware 19703

Gentlemen:

Subject: Inspection No. 030-11139/86-01

This refers to the routine safety inspection conducted by Ms. Marlene J. Taylor of this office on February 13, 1986 of activities authorized by NRC License No. 07-16499-01 and to the discussions of our findings held by Ms. Taylor with yourself at the conclusion of the inspection.

The inspection was an examination of activities conducted under your license as they relate to radiation safety and to compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no violations were observed.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter will be placed in the Public Document Room.

No reply to this letter is required. Your cooperation with us in this matter is appreciated.

Sincerely,

Original Signed By:
Francis M. Costello

John D. Kinneman, Chief
Nuclear Materials Safety Section A,
Division of Radiation Safety
and Safeguards

cc w/encl:
Public Document Room (PDR)
Nuclear Safety Information Center (NSIC)
State of Delaware

OFFICIAL RECORD COPY

DL ALLIED CHEM CORP - 0001.0.0
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RETURN ORIGINAL TO
REGION I

Allied Chemical Corporation

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MAR 17 1986

bcc w/encl:
Region I Docket Room (w/concurrences)
Management Assistant, DRMA (w/o encl)

MT
RI:DRSS
Taylor/fi
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FM
RI:DRSS
Kinneman
02/13/86

OFFICIAL RECORD COPY

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