

AUG 29 1985

Docket Nos. 50-354; 50-355

Public Service Electric & Gas Company  
ATTN: Mr. T. J. Martin  
Vice President  
Engineering and Construction  
80 Park Plaza - 17C  
Newark, New Jersey 07101

Gentlemen:

SUBJECT: FEMA REPORT FOR THE SALEM/HOPE CREEK  
APRIL 23, 1985 REMEDIAL EXERCISE

This letter transmits the Federal Emergency Management Agency report of the Salem/Hope Creek remedial exercise conducted on April 23, 1985. The exercise was conducted to resolve Category A deficiencies resulting from the October 1984 full scale exercise at the Salem/Hope Creek site.

FEMA's report specifies that the deficiency concerning the Salem congregate care center was resolved at the April 1985 remedial exercise and that the other three Category A deficiencies concerning the Salem County emergency operations center were reduced to a Category B level. FEMA states that: "In view of the improved performance in connection with the previous Category A deficiencies, and the aggressive corrective actions being taken by the State, FEMA has reasonable assurance that the health and safety of the public living in New Jersey in the vicinity of the Salem/Hope Creek site can be protected."

If you have any questions concerning this matter please contact me at (215) 337-5208.

Sincerely,

*T. L. Hapster for*

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

Attachments: As Stated

cc w/encl:

A. E. Giardino, Manager, Quality Assurance Engineering and Construction  
R. L. Mittl, General Manager, Nuclear Assurance and Regulation  
A. J. Pietrofitta, General Manager, Power Production Engineering,  
Atlantic Electric  
Rebecca A. Green, Bureau of Radiation Protection  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector  
State of New Jersey

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PDR ADOCK 05000354  
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bcc w/encl:  
Region I Docket Room (with concurrences)  
C. Amato, NRC RAC Region II Representative  
P. Gaul

*[Signature]*  
RI:DRSS  
Harpster  
8/28/85

*[Signature]*  
RI:DRSS  
Bellamy  
8/28/85

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# Federal Emergency Management Agency

Washington, D.C. 20472

JUL 31 1985

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

FROM:

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

SUBJECT: Post-Exercise Assessment For The Salem/Hope Creek  
April 23, 1985 Remedial Exercise

This is to transmit the post-exercise assessment for the April 23, 1985, remedial exercise for the Salem/Hope Creek Nuclear Power Plants, in Salem County, New Jersey. The assessment was prepared by Region II, Federal Emergency Management Agency (FEMA).

The exercise was conducted to resolve 4 Category A deficiencies (i.e., deficiencies that would lead to a negative finding) resulting from the October 1984 full-scale exercise at the Salem/Hope Creek site. The first three concerned the Salem County emergency operations center (EOC). The fourth concerned the Salem County congregate care center. To resolve the deficiencies, it was necessary to activate fully the Salem County EOC. There was only partial activation and limited evaluation of the State emergency response organization and municipalities. In brief, the deficiencies were:

- ° Weak overall management and coordination of information in the Salem County EOC;
- ° Significant delays at the Salem County EOC in notifying some of the municipalities of the stated decision to evacuate certain areas;
- ° Significant delays at the Salem County EOC in notifying some of the municipalities of the State decision to administer KI;
- ° There were no radiological monitoring teams or equipment at the congregate care shelter to monitor evacuees for possible contamination.

The deficiencies concerning the Salem County congregate care center were resolved at the April exercise. The other three Category A deficiencies were reduced to a Category B level. Improvement is primarily attributed to the Deputy Director of the new Jersey Office of Emergency Management (OEM), who participated in the exercise as State liaison to Salem County and was instrumental in facilitating operations management at the Salem County and successful demonstration of the exercise objectives. FEMA has

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determined that New Jersey must develop an interim plan (plan supplement) to provide management by the State in the Salem County EOC until the County is able to be in full control of the overall emergency response.

The State of New Jersey has taken immediate measures to rectify this situation. The State Office of Emergency Management fully recognized the inability of Salem County emergency management officials to coordinate the activities necessary to provide for the safety of Salem County residents in the event of a radiological emergency. Attached are two letters from Major Harold Spedding, Deputy Director of the New Jersey OEM. The letters, dated May 17, 1985, and June 18, 1985, describe corrective actions being taken by the State to resolve completely the deficient areas concerning the Salem County EOC. The procedures described in the letters are now being incorporated in the plans.

It is FEMA's view that the corrective actions schedule proposed by the State of New Jersey is adequate to resolve the deficiencies still remaining in connection with the Salem County EOC. The State is addressing the problem aggressively and is keeping to its schedule. Some training has already taken place. In addition, although not mentioned in the two letters from the State, a drill has been scheduled for October 1, 1985, to test the new, compensatory management strategy proposed for the Salem County EOC. The objectives for this drill have already been received and reviewed by FEMA's Region II office.

In view of the improved performance in connection with the previous Category A deficiencies, and the aggressive corrective actions being taken by the State, FEMA has reasonable assurance that the health and safety of the public living in New Jersey in the vicinity of the Salem/Hope Creek site can be protected. If you have any questions, please don't hesitate to call me.

Attachments  
As Stated





plan folder

State of New Jersey

DEPARTMENT OF LAW AND PUBLIC SAFETY  
DIVISION OF STATE POLICE  
EMERGENCY MANAGEMENT SECTION  
POST OFFICE BOX 7068  
WEST JERSEY, NEW JERSEY 07624  
(609) 882-2000

COLONEL C. L. PAGANO  
Superintendent

IRWIN I. KIMMELMAN  
Attorney General

May 17, 1985

Mr. Frank Petrone  
Regional Director  
FEMA, Region II  
26 Federal Plaza  
New York, NY 10278

Dear Mr. Petrone:

The State Office of Emergency Management fully recognizes the inability of Salem County Emergency Management officials to coordinate the activities necessary to provide for the safety of Salem County residents during an actual nuclear emergency at the Salem Nuclear Generating Station.

Therefore, the State Office of Emergency Management will actively participate in all operational functions at the Salem County Emergency Operating Center during future drills and/or actual emergencies until it is satisfied Salem County can adequately fulfill its responsibilities.

Sincerely,

Harold E. Spedding, Major  
Deputy State Director  
Office of Emergency Management

sb



State of New Jersey

DEPARTMENT OF LAW AND PUBLIC SAFETY  
DIVISION OF STATE POLICE

EMERGENCY MANAGEMENT SECTION  
POST OFFICE BOX 7068  
WEST TRENTON, NEW JERSEY 08625  
(609) 862-2000

June 18, 1985

IRWIN I. KIMMELMAN,  
Attorney General

COLONEL C. L. PAGANO  
Superintendent

Mr. Roger Kowieski  
Federal Emergency Management Agency  
Region II  
26 Federal Plaza  
New York, NY 10278

Dear Mr. Kowieski:

The State office of Emergency Management functions as the Governors representative under the Civil Defense and Disaster Control Act as amended. Under said act the Governor is authorized to utilize and employ all available resources of the state and of each and every political subdivision of the state. This authority extends to equipment, facilities and personnel services. An extract of this Act is provided for your review.

The OEM has assessed the situation at Salem County and concluded that the problem stems from a need for stronger command and control and the development of an operations staff similar than at the State Emergency Operations Center.

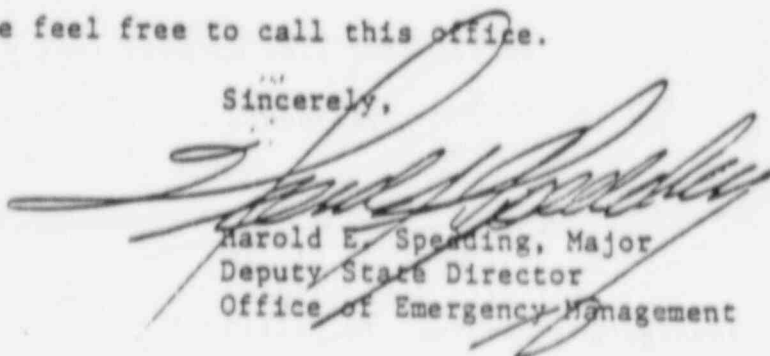
Our intent is to provide the staffing for the command and control function and the operations staff until such time as Salem County has demonstrated an ability to operate without state assistance. We envision a staff of four from the state at this time. A brief description of the staff positions is attached.

The state OEM will modify the Artificial Island Plan, Salem County Appendix to provide for the expanded role of the state in the Salem EOC. The following plan elements will require changes; B. Emergency Facilities, Emergency Operations Center, F. Plan Implementation, Notification and Communications, Command and coordination, Protective Actions and Parallel Actions.

The modified plan elements will be developed according to the attached time line.

If you have questions please feel free to call this office.

Sincerely,



Harold E. Spending, Major  
Deputy State Director  
Office of Emergency Management

kl  
Attachment

## STATE STAFFING AT SALEM COUNTY EOC

### Positions

- 1 State Directors Representative - The State Directors Representative (SDR) will be the State Directors personal liaison at the County EOC. The SDR will insure that messages are transmitted and received in a timely manner and that Emergency Action Levels and Protective Action Recommendations are relayed to the affected municipalities and general population in accordance with Federal guidelines. The SDR will insure that all elements of the Salem County Government are utilized to the protection of the County residents. The SDR will act under the authority of the Governor as captioned in the Civil Defense and Disaster Control Act, Chapter 438, P.L. 1953.
- 2 Operations Officer - The Operations Officer will follow the course of an emergency or exercise monitoring communications from the State and municipalities. The Operations Officer will insure that messages are relayed and responded to by the appropriate government agency in a timely manner. The operations officers will monitor the progress of all protective and parallel actions as directed.
- 1 Message Controller - The message controller will insure that messages are directed to the appropriate government agency in a timely manner. The controller will also insure that responses from the County are made in a timely manner. The controller will insure that all pertinent messages are brought to the attention of the SDR and County Coordinator.

# SALEM INTERIM PLAN DEVELOPMENT

Development of Interim Plan - June 17 - July 29

Staff review - July 29 - August 5

Printing - August 12 - 16

Submit to Agencies - August 19

training - August 12 - September 16

# POST EXERCISE ASSESSMENT



April 23, 1985, Remedial Exercise of the  
Radiological Emergency Response Plans of the State  
of New Jersey, Salem County and Six Localities  
for Public Service Electric and Gas Company's  
**SALEM NUCLEAR GENERATING STATION**  
Hancocks Bridge, Salem County, New Jersey

June 19, 1985

Federal Emergency Management Agency

Region II

FRANK P. PETRONE  
Regional Director

26 FEDERAL PLAZA  
New York, N.Y. 10278

**Participating Governments**

**The State of New Jersey**

Salem County  
Elsinboro  
Lower Alloways Creek  
Mannington  
Pennsville  
Quinton  
Salem City

**Cumberland County**

**Nonparticipating Governments**

Cumberland County Municipalities  
Greenwich  
Stow Creek

**The State of Delaware**



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## LIST OF ABBREVIATIONS AND ACRONYMS

|            |   |
|------------|---|
| ANL        | Argonne National Laboratory   |
| ARC        | American Red Cross  |
| BNL        | Brookhaven National Laboratory  |
| BRP        | New Jersey Bureau of Radiation Protection   |
| CCEOC      | Cumberland County Emergency Operations Center   |
| DOE        | U.S. Department of Energy   |
| EAL        | Emergency Action Level  |
| EBS        | Emergency Broadcast System  |
| EMC        | Emergency Management Coordinator  |
| EMRAD      | Emergency Management Radio -- A New Jersey State Police emergency radio system  |
| EOC        | Emergency Operations Center   |
| EOF        | Licensee Near-Site Emergency Operations Facility  |
| EPA        | Emergency Planning Area   |
| EPZ        | Emergency Planning Zone   |
| FCP        | Forward Command Post  |
| FEMA       | Federal Emergency Management Agency   |
| INEL       | Idaho National Engineering Laboratory   |
| KI         | Potassium Iodide  |
| LOCA       | Loss of Coolant Accident  |
| NJSP       | New Jersey State Police   |
| NRC        | U.S. Nuclear Regulatory Commission  |
| NUREG-0654 | Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Nuclear Power Plants (NUREG-0654/FEMA-REP-1, Rev. 1) |

|       |  |
|-------|--|
| OEM   | Office of Emergency Management, NJSP     |
| PAG   | Protective Action Guides                 |
| PSE&G | Public Service Electric and Gas Company  |
| RAC   | Regional Assistance Committee            |
| RERP  | Radiological Emergency Response Plan     |
| SCAT  | Salem County Area Transit                |
| SCEOC | Salem County Emergency Operations Center |
| SNGS  | Salem Nuclear Generating Station         |
| SOP   | Standard Operating Procedure             |
| SRAO  | State Radiological Assessment Officer    |

## SUMMARY

There have been four joint full-scale exercises for the SNGS: April 8, 1981, October 13, 1982, October 26, 1983, and October 23, 1984. These previous, full-scale exercises differed from this latest, remedial exercise in several respects. During this remedial exercise, FEMA required only partial activation of state and some county and municipal organizations. The focus was on those components related to deficiencies that, in FEMA's opinion, could lead to a negative finding.

During the October 23, 1984, exercise, FEMA identified four deficiencies in Salem County that fell into this category. Briefly, these deficiencies were:

- 1) Messages from the Salem County EOC (SCEOC) to some municipalities concerning the decision to shelter certain sectors were delayed or not received at all by at least one municipality,
- 2) Messages with the decision to evacuate certain sectors were delayed to some municipalities for up to 1½ hours,
- 3) Messages with the decision to distribute and administer potassium iodide (KI) for emergency workers were delayed for up to 1½ hours, and
- 4) There were no radiological monitoring personnel or equipment at the Salem County Congregate Care Center to monitor evacuees for contamination.

The remedial exercise was designed primarily to determine whether these four deficiencies had been corrected. To accomplish this, it was necessary to activate command and control in West Trenton, State Police Headquarters, effect full activation of Salem County EOC, and partial activation of the Salem County municipal EOCs. FEMA did not observe the Cumberland County EOC. There was also limited demonstration of field activities including simulation of school evacuation, congregate care shelters, decontamination center and the New Jersey Bureau of Radiation Protection (BRP) functions related to communication with field monitoring team.

The remedial exercise was evaluated by a 13-member federal observer team comprised of FEMA, Agency representatives to the Regional Assistance Committee (RAC), and contractors. A preliminary briefing for exercise participants and the general public was conducted by the RAC Chairman at the Public Service Electric and Gas Company (PSE&G) Salem Training Center in Salem, New Jersey on April 25, 1985. Subsequently, detailed evaluations have been reviewed by FEMA and compiled in this document.

Section 1 of this report presents background information on the 1985 exercise, describes the evaluation criteria and exercise objectives, and presents a description of the exercise scenario.

Each exercise deficiency and the corresponding recommendation is described by jurisdiction in Sec. 2 of this report. Section 3 provides a form for developing a schedule for correcting deficiencies that would lead to a negative finding and other deficiencies based on the April 23, 1985, remedial exercise. Section 4 tabulates the status of deficiencies observed at all the radiological emergency preparedness exercises held in conjunction with the Salem Nuclear Generating Station.

#### **New Jersey State EOC (West Trenton)**

The staff participating in the exercise displayed adequate training and knowledge of their responsibilities. Maps were equipped with new, colored, transparent overlays indicating the direction of the plume and sectors where protective actions were implemented. Also, communication between the BRP staffs stationed at the EOF and State EOC staff was prompt and effective. This corrects a deficiency from the October 23, 1984, exercise. A number of other deficiencies pertaining to BRP operations were addressed and resolved adequately by BRP staff members in the EOF, Forward Command Post, and in the field. Back-up communication capability between the BRP Forward Post, the field teams, and the EOF was successfully demonstrated. Direction and control of off-site radiological monitoring teams was adequate. However, environmental monitoring, and the contamination control (cartridge handling) technique for handling air samples utilized by the off-site field teams should be improved.

#### **Salem County Emergency Operations Center (SCEOC)**

Alerting and notification of SCEOC personnel occurred promptly and the SCEOC was staffed in a timely manner. Activation of each municipal EOC was properly verified. Internal and external communications were improved since the October, 1984, exercise by internal message handlers, periodic staff briefings, and logging all incoming and outgoing calls. State protective action recommendations were received by telephone and confirmed by the telefax machine, thus correcting a deficiency from the previous exercise. Salem County Freeholders and legislators were present and carefully monitored the entire exercise.

Although several improvements at the SCEOC were noted, emergency operations management needs to be strengthened. The continued preoccupation of the County Emergency Management Director with message initiation, review and telephone interruptions impaired his ability to be in control of the overall emergency response. Relaying messages to the municipal EOCs regarding the state's recommendation to administer KI to emergency workers and clarifying the state's evacuation recommendation were not timely. A procedure should be developed for handling priority messages.

The Deputy Director, New Jersey Office of Emergency Management participated in the exercise as the State liaison to Salem County and was instrumental in facilitating operations management at the SCEOC. For example, the state liaison officer encouraged operations room staff to take a more active role in coordinating and discussing their agency's actions. This was not being done early in the exercise. The

state's presence in the SCEOC is essential to assure an effective emergency response and an interim plan should be developed to deal with the issue of weak management at the SCEOC.

#### Field Implementation of Actions to Protect the Public

The bus evacuation demonstration was handled in a manner consistent with the plan. However, improvements in disseminating information from the SCEOC to the American Red Cross shelter managers are necessary. Especially needed is information concerning number of expected evacuees and their arrival time. Properly calibrated monitoring instrumentation was available, but additional training is necessary to assure that all monitoring personnel are aware of the decontamination action levels.

Emergency workers at the Quinton emergency worker decontamination center had proper dosimetry. Sufficient quantities of properly calibrated monitoring instruments were available and decontamination personnel were aware of the decontamination action levels.

#### Salem County Municipals

Six municipalities participated in this remedial exercise. These municipalities resolved a group of deficiencies noted during the October, 1984, exercise.

## 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 responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

- Taking the lead in off-site emergency planning and in the review and evaluation of radiological emergency response plans developed by state and local governments.
- Determining whether such plans can be implemented, on the basis of observation and evaluation of exercises of the plans conducted by state and local governments.
- Coordinating the activities of federal agencies with responsibilities in the radiological emergency planning process:
  - U.S. Department of Commerce
  - U.S. Nuclear Regulatory Commission
  - U.S. Environmental Protection Agency
  - U.S. Department of Energy
  - U.S. Department of Health and Human Services, Food and Drug Administration
  - U.S. Department of Transportation
  - U.S. Department of Agriculture
  - U.S. Department of Interior.

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

Formal submission of the radiological emergency response plans for the Salem Nuclear Generating Station (SNGS) to the RAC by the state and involved local jurisdictions was followed by a critique and an ongoing evaluation of these plans. A public meeting was held to acquaint the public with the plans' contents, answer questions, and receive suggestions for changes in these plans.

A first joint radiological emergency preparedness exercise was conducted for SNGS on April 8, 1981, and post-exercise assessments for that exercise were subsequently issued. A second joint exercise on October 13, 1982, was also followed with post-exercise assessments issued by FEMA Regions II and III. A third joint exercise, conducted on October 26, 1983, was also followed with a post-exercise assessment. A fourth joint exercise was conducted on October 23, 1984, to assess the capability of state, county, and municipal emergency preparedness organizations to implement their



radiological emergency preparedness plans and procedures, and to protect the public during a radiological emergency at Public Service Electric and Gas Company's (PSE&G's) SNGS. A medical drill at the Salem County Memorial Hospital was also conducted on September 27, 1984, in order to evaluate the adequacy of hospital and ambulance facilities and procedures for handling injured and contaminated individuals. This drill was evaluated by a federal observer.

During the October 23, 1984, exercise, four deficiencies in emergency preparedness response were identified which, in FEMA's opinion, required immediate attention. These deficiencies were:

- 1) Messages from the Salem County EOC (SCEOC) to some municipalities concerning the decision to shelter certain sectors were delayed or not received at all by at least one municipality,
- 2) Messages with the decision to evacuate certain sectors were delayed to some municipalities for up to 1½ hours,
- 3) Messages with the decision to distribute and administer potassium iodide (KI) for emergency workers were delayed for up to 1½ hours, and
- 4) There were no radiological monitoring personnel or equipment at the Salem County Congregate Care Center to monitor evacuees for contamination.

On April 23, 1985, a remedial exercise was held, the primary purpose of which was to determine whether these four deficiencies had been corrected. This determination required activation of command and control in West Trenton, State Police Headquarters, full activation of the Salem County EOC, and partial activation of the Salem County municipal EOCs. FEMA did not observe the Cumberland County EOC. There was also limited demonstration of field activities including simulation of school evacuation, congregate care shelters, decontamination center and the New Jersey Bureau of Radiation Protection (BRP) functions related to communication with one field monitoring team.

An observer team consisting of personnel from FEMA Region II, the RAC, FEMA's contractors, and federal and state agencies evaluated the April 23, 1985, exercise. Thirteen federal observers were assigned to evaluate the activities of state and local jurisdictions. Observers were trained in radiological emergency planning concepts and given an evaluation kit, which included information on exercise objectives, the exercise scenario, and other issues relating to the exercise. Team leaders coordinated team operations.

Following the exercise, the federal observers met to compile their evaluations. Observers presented observations specific to their assignments, the teams of observers developed preliminary assessments for each jurisdiction, and team leaders consolidated the evaluations of individual team members. Based on these preliminary assessments, a



public critique of the exercise was held by the RAC Chairman for exercise participants and the general public at 1000 on Thursday, April 25, 1985, at the PSE&G Salem Training Center in Salem, N.J.

The findings presented in this report are based on evaluations of the federal observers and have been reviewed by FEMA Region II. FEMA requests that state and local jurisdictions submit a schedule of remedial actions for correcting the deficiencies discussed in this report. The Regional Director of FEMA is responsible for certifying to the FEMA Associate Director of State and Local Programs and Support, Washington, D.C., that all deficiencies observed during the exercise have been corrected and that such corrections have been incorporated into state and local plans, as appropriate.

## 1.2 FEDERAL OBSERVERS

Thirteen federal observers evaluated off-site emergency response functions. These individuals, their affiliations, and their exercise assignments are given below.

| <u>Observer</u> | <u>Agency</u> | <u>Exercise Location/Function</u>   |
|-----------------|---------------|---|
| R. Kowieski     | FEMA          | General Observation/RAC Chairman  |
| R. Acerno       | FEMA          | State Emergency Operations Center (SEOC)/Team Leader  |
| C. Gordon       | NRC           | PSE&G Off-site Emergency Operations Facility (EOF)/State<br>State Bureau of Radiation Protection                                    |
| A. Hull         | BNL           | State Bureau of Radiation Protection — Forward Command<br>Post/Accident Assessment  |
| B. Salmonson    | INEL          | Forward Command Post/Radiological monitoring teams  |
| T. Baldwin      | ANL           | Salem County EOC/Team Leader  |
| H. Fish         | DOE           | Salem County EOC/Communications   |
| L. Poch         | ANL           | Salem County EOC/Operations   |
| L. Slagle       | INEL          | Salem County/School bus evacuation; congregate care shelter<br>(Woodstown High School)  |
| J. Keller       | INEL          | Salem County/Decontamination Center (Centerton Fire<br>House) and Emergency worker Decontamination Center<br>(Quinton Fire Station) |
| R. Reynolds     | FEMA          | Elsinboro and Lower Alloways Creek municipal EOCs/Team<br>Leader  |

| <u>Observer</u> | <u>Agency</u> | <u>Exercise Location/Function</u>        |
|-----------------|---------------|--|
| R. Bernacki     | FEMA          | Pennsville and Salem City municipal EOCs |
| J. Nagle        | ANL           | Quinton and Mannington municipal EOCs    |

### 1.3 EVALUATION CRITERIA

The exercise evaluations presented in Sec. 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 and accompanying recommendations are presented. Deficiencies are presented in two categories. The first category includes those deficiencies that would lead to a negative finding, that is, a finding that off-site emergency preparedness was not adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public living near the site in the event of a radiological emergency. A negative finding would be based on at least one deficiency of this type.

The second category includes all other deficiencies where, although demonstrated (and observed) performance during the exercise was substandard and corrective actions are necessary, other factors gave FEMA reasonable assurance that, in a real radiological emergency, the health and safety of the public could be protected. These other deficiencies also include all other problem areas where performance was considered adequate but where a correctable weakness was observed. Correction of the weakness would enhance the ability of the organization to respond to radiological emergencies.

### 1.4 EXERCISE OBJECTIVES

The licensee (Public Service Electric and Gas Company), FEMA, NRC, the State of New Jersey, and a municipal representative planned a coordinated exercise of their respective emergency plans for both the on-site and off-site support agencies. The exercise involved activation and participation of the staff and response facilities of SNGS as well as emergency organizations and emergency facilities of the State of New Jersey, Salem County, and the six Salem County municipalities.

The exercise was intended to demonstrate many, but not necessarily all, of the SNGS capabilities to respond to a wide range of emergency conditions. This scenario was designed to activate the radiological emergency response plans (RERPs) for SNGS and PSE&G's corporate radiological emergency response plan through their various levels. Although the scenario accurately simulates operating events, it was not intended to assess all of the operator's diagnostic capabilities, but rather to provide sequences that ultimately demonstrated the operator's ability to respond to events and that resulted in exercising both on-site and off-site emergency procedures. The exercise demonstrated a number of primary emergency preparedness functions. At no time was the exercise permitted to interfere with the safe operations of SNGS, and the plant management at its discretion could have suspended the exercise for any period of time necessary to

ensure this goal. Free play was encouraged and the referees interfered only if operator or player action would have prematurely terminated the exercise or deviated excessively from the drill schedule.

Federal agencies were notified during the exercise according to existing emergency response procedures. Federal agencies with radiological emergency preparedness responsibility did not actively participate in the play of this exercise. Federal representatives, however, did act as exercise evaluators.

To provide a conservative exercise in terms of off-site doses and areas affected, exercise meteorology was used. Actual meteorology might have led to projected radiological doses below established protective action guides (PAGs) within the areas of interest.

The following objectives were developed for this exercise based upon deficiencies noted in the previous exercise and have been referenced in the narrative of the exercise evaluation section in Sec. 2 of this report by organizational abbreviation and by number, for example, NJEOC 2.

#### 1.4.1 State of New Jersey Emergency Operations Center (NJEOC)

1. Demonstrate that overlays indicating sectors in which protective actions have been implemented are available in State, County, and Municipal Emergency Operating Centers.
2. Demonstrate that communications between the BRP liaison in the State EOC and the decision making executive can be accomplished promptly.

#### 1.4.2 BRP-EOF (BRP/EOF)

1. Demonstrate the ability to transmit dose projections, plant status, and protective actions between the EOF and the Forward Command Post (FCP) in a timely manner.
2. The BRP Lead Assessment Officer at the EOF will demonstrate transmission of final protective action recommendations to the BRP liaison at the State EOC.
3. Demonstrate the effectiveness of back-up communications systems.

#### 1.4.3 BRP - Forward Command Post (BRP/FCP)

1. Demonstrate more efficient use of field monitoring capability by accurately positioning teams both in and out of the plume based upon timely information transmission from the EOF.
2. Demonstrate the capability to communicate with field teams.
3. Demonstrate its ability to transmit emergency status and/or protective action recommendations to field teams in a timely manner.

#### 1.4.4 Radiological Field Monitoring Teams (RFMT)

1. Demonstrate that monitoring equipment has been properly calibrated and will function properly.

#### 1.4.5 Salem County Emergency Operations Center (SCEOC)

1. Demonstrate the ability to activate, staff, and mobilize agency representatives at the SCEOC in a timely manner.
2. Demonstrate that messages are transmitted and logged accurately and in a timely manner and that there is adequate communication within the EOC.
3. Demonstrate effective information management in coordinating protective and parallel actions with the municipalities.
4. Demonstrate the ability to transmit plant status, personnel protection information, parallel actions and protective actions to the municipalities in a timely manner.
5. Demonstrate sound management and coordination of information in the SCEOC as well as improved flow of information to the municipalities.
6. Demonstrate that the communications center is adequate to the message flow.
7. Demonstrate the transmission of hard copy between the County and State EOCs.
8. Demonstrate that the County Freeholders will provide executive authority at the SCEOC.
9. Demonstrate a procedure for the efficient response by the SCEOC to requests for information and assistance from the local EOCs.

#### 1.4.6 Salem County/Field Implementation of Actions to Protect the Public (FIELD)

1. Demonstrate that emergency workers at the congregate care shelter (at the Pittsgrove Fire Station) know the contamination level for determining the need for decontamination.
2. Demonstrate that radiological monitoring equipment at the congregate care shelter (at the Pittsgrove Fire Station) is properly calibrated.
3. Demonstrate there are sufficient radiological monitoring personnel and equipment at the congregate care shelter in Woodstown and that these personnel have the ability to monitor evacuees and vehicles.
4. Demonstrate that sufficient monitoring equipment is available to insure the optimum efficiency of the decontamination center.
5. Demonstrate that sufficient personnel dosimetry are available for emergency workers at the decontamination center.
6. Demonstrate sufficient knowledge of decontamination levels to conduct operation of the decontamination center in an efficient manner.
7. Demonstrate that forms can be used to identify locations on the body where contamination is monitored.
8. Demonstrate that emergency workers at congregate care shelters are informed of pertinent information in a timely manner.
9. Demonstrate that security and traffic control can be provided at congregate care shelters.
10. Demonstrate that emergency workers at the Salem County Area Transit (SCAT) are familiar with evacuation routes and locations of congregate care shelters.
11. Demonstrate the ability to direct the SCAT drivers during the evacuation in a manner consistent with the plan.
12. Demonstrate that all SCAT drivers involved in evacuation busing are provided with dosimeters. The listing on distribution of dosimetry should also be provided to FEMA.
13. Demonstrate that all SCAT drivers are fully trained in radiological exposure control including the use of dosimeters and KI.



#### 1.4.7 Salem County Municipal Emergency Operations Centers (SCMEOC)

1. Demonstrate that sufficient personnel dosimetry is available at the Elsinboro EOC for emergency workers.
2. Demonstrate that callout lists at the Mannington EOC are current.
3. Demonstrate that the Salem City EOC dispatcher can notify the Emergency Management Coordinator (EMC) in a timely manner.
4. Demonstrate that the Pennsville Office of Emergency Management (OEM) has route alerting maps and written messages for emergency workers.
5. Demonstrate that emergency power is available at the Elsinboro Township and Salem City EOCs.

### 1.5 EXERCISE SCENARIO

#### 1.5.1 Major Sequence of Events on Site

Given below is a listing of exercise events, the approximate times that they were projected to occur by the scenario, and the actual times that they occurred (as reported to the EOF).

| <u>Projected by<br/>Scenario</u> | <u>Actually<br/>Occurred</u> | <u>Event</u>  |
|----------------------------------|------------------------------|---|
| 1600                             | 1605                         | Salem Operations Manager receives a telephoned bomb threat. After assessing the situation with Security Force, it is determined that the threat is credible. Security implements Contingency Procedure (SCP 5). An Unusual Event is declared per ECG Section 13B, threat against the station. |
| 1715                             | 1715                         | Protected area alarm. Intruders observed on closed circuit TV apparently unarmed. Reconnaissance Team reports sighting intruders in the area of the Sewage Treatment Plant. Security implements SCP 6, discovery of intruders. An Alert is declared per ECG Section 13D.                      |
| 1800                             | 1805                         | Security Force Reconnaissance Team discovers bomb by Unit 2 BIT, 78 ft. Elevation Auxiliary Building, Mechanical Penetration Area. Security Lieutenant implements SCP 10,   |

| <u>Projected by<br/>Scenario</u> | <u>Actually<br/>Occurred</u> | <u>Event</u>  |
|----------------------------------|------------------------------|---|
|                                  |                              | discovery of sabotage device. A Site Area Emergency is declared per ECG Section 13E. Unit 2 commences controlled shutdown.  |
| 1830                             | NR <sup>a</sup>              | Unit 2 in Mode 3, Hot Standby. Unit 1 commences controlled shutdown.  |
| 1900                             | NR                           | Unit 1 in Mode 3, Hot Standby.  |
| 1915                             | 1923                         | Unit 2 large break LOCA in progress. General Emergency declared per ECG Section 5A (SSS/EDO judgment of probable failed fuel before completion of RCS analysis) and 5B, Loss of Primary Coolant. Predetermined Protective Action Recommendation Case B is provided to the States. Based on Core degradation and LOCA with no immediate potential for Containment Boundary Failure, 0-5 mile evacuation in downwind quadrant and 0-5 mile sheltering in unaffected quadrants is recommended. |
|                                  |                              | Actuation of Safety Injection, Accumulator dump and Containment Spray. RWST level decreasing rapidly, Containment Sump level increasing. Loss of 2A Vital 4K bus during power transfer (diff. on bus).  |
|                                  |                              | The following are unavailable:  |
|                                  |                              | 21 CCW Pump   |
|                                  |                              | 21 AFW Pump   |
|                                  |                              | 21 Containment Spray Pump   |
|                                  |                              | 21 & 22 Service Water Pump  |
|                                  |                              | 21 Safety Injection Pump  |
|                                  |                              | 21 B. A. Pump   |
|                                  |                              | 21 Containment Fan Coil Unit  |
|                                  |                              | 23 Charging Pump (PDP)  |
|                                  |                              | 21 RHR Pump   |
| 1945                             | NR                           | Failure of 22 RHR Pump  |



| <u>Projected by<br/>Scenario</u> | <u>Actually<br/>Occurred</u> | <u>Event</u>   |
|----------------------------------|------------------------------|--|
| 1950                             | NR                           | RWST level decreasing rapidly. Containment pressure >15 psig. No ability to recirculate containment sump water. SI pump (22), 22 Spray pump, 21 & 22 CCP still using RWST water. |
| 2015                             | NR                           | Containment pressure relief isolation valves fail and vent the containment to the plant vent. Release is in progress, estimated to last 4 to 5 hours.                            |
|                                  |                              | Projected peak dose rate at LPZ Centerline:  |
|                                  |                              | Whole Body 20 mR/hr<br>Thyroid 2.7 rem/hr  |
|                                  |                              | Integrated Dose:   |
|                                  |                              | Whole Body 50 mR<br>Thyroid 8 rem  |
| 2030                             | NR                           | RWST depleted. Core exit thermocouples exceed 1200°F.  |
| 2100                             | NR                           | 22 RHR pump returned to service.   |
| 2115                             | NR                           | Unit 2 on cold leg recirculation (containment sump)  |
| 2120                             | NR                           | Cool down (very slowly) initiated.   |
| 2215                             | NR                           | Plume arrives at LPZ.  |
| 2300                             | 2220                         | Consideration to terminate the exercise upon consent of FEMA and OEM.  |
| 2400                             | NR                           | Release terminated due to containment pressure equalizing to atmospheric pressure and/or isolation of leak path.   |
| 0015                             | NR                           | EPZ peak dose rate:  |
|                                  |                              | Whole Body <5 mR/hr<br>Thyroid 900 mRem/hr   |
|                                  |                              | PAG exceeded at 6 miles for Thyroid and at 7 miles exceeded on dose rate but not integrated dose.  |

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<sup>a</sup>NR = not reported.

### 1.5.2 Description of State and County Resources

All State exercise participants were to be pre-positioned in accordance with the exercise time line. Initial notification was to be provided by EOF referees to the State EOC Operations Room and to Salem County. Verification calls were to be made to the EOF. The State EOC Operations Staff and State referees in the EOF and Salem County EOC were to serve as the Exercise Control Team in conjunction with the PSE&G referees in the EOF.

Initiating events were provided to the Salem County municipalities by the Salem County EOC. Salem County Municipal EOC's and the Cumberland County EOC was to be operational only for the receipt and transmission of radio and telephone communications; and for the correction of site-specific exercise objectives as shown in Sec. 1.4.7. All county-level requests for resource support, exclusive of standard mutual aid requests, from out-of-county sources were to be directed to the state EOC using normal message procedures.

One State Monitoring Team was to be dispatched from the FCP for actual field assignment by a BRP participant. The team was to be supplied with one referee/observer. The referee was to provide simulated survey instrument readings which would be used to determine dose rates.

Several demonstrations of emergency response capability were to be made outside of the State EOC, EOF, FCP, and the Salem County EOC. First, notification of the Salem City EMC was to be accomplished by standard contact from the SCEOC to the Salem City Police located on the first floor of the Administration Building at 94 Market Street. The Salem Police were to then contact the EMC by phone. This was to occur at the Alert Level. The municipal EMC's were also to be notified by radio pager.

Second, the Salem County Area Transit (SCAT) was to be notified by radio from the SCEOC to the depot in Deepwater. Dispatch was to occur upon instruction from the SCEOC as dictated by exercise conditions.

Third, the Quinton Decontamination Center was to be set up at the Site Area Emergency Level. Decontamination personnel were to be put on standby at the Alert Level from the County Dispatch Center.

Fourth, the Woodstown Congregate Care Shelter was to be activated at the Site Area Emergency Level with appropriate staffing, communications, security, monitoring, decontamination capability, and traffic control. Personnel were to be put on standby at the Alert Level.

Fifth, the Pittsgrove (Shalick H.S.) decontamination capability was to be demonstrated at the Centerton Fire House.

The exercise was to be terminated upon mutual consent of New Jersey and FEMA Region II that participants had sufficiently demonstrated their capabilities.

## 2 EXERCISE EVALUATION

This section provides a narrative overview of the observer evaluations from the April 23, 1985, radiological emergency preparedness remedial for the Salem Nuclear Generating Station (SNGS). These evaluations are referenced by organizational abbreviation and number to the exercise objectives listed in Sec. 1.4.

### 2.1 NEW JERSEY STATE OPERATIONS

#### 2.1.1 State EOC

This remedial exercise did not require full activation of State EOC in West Trenton, New Jersey. Approximately 28 individuals participated in the exercise, staffing the command room, Bureau of Radiation Protection (BRP), communications room, and the message center. The staff present displayed adequate training and knowledge of their responsibilities. Maps in the State EOC were equipped with new, colored, transparent overlays indicating the direction of the plume and sectors where protective actions were implemented. This satisfied an exercise objective (NJEOC 1). The BRP Liaison Officer was stationed near the Command and Control center, which eliminated any delay in the presentation of protective action recommendations to the designated State Director. This successfully demonstrated another exercise objective (NJEOC 2). The role of the Bureau of Radiation Protection Liaison Officer was also clarified. His responsibility was to pass information from the BRP staff at EOF directly to the designated State Director. Also, communication between BRP staffs stationed at EOF and State EOC staff was prompt and effective. This corrects a deficiency from the October, 1984, exercise.

#### Deficiencies That Would Lead to a Negative Finding

No deficiencies that would lead to a negative finding were observed at the State EOC during this remedial exercise.

#### Other Deficiencies

No other deficiencies were observed at the State EOC during this remedial exercise.

#### 2.1.2 Bureau of Radiation Protection

A number of other deficiencies pertaining to Bureau of Radiation Protection operation were addressed and resolved adequately by BRP staff members in the Emergency Operation Facility, Forward Command Post, and in the field.

### 2.1.2.1 State of of New Jersey BRP

The BRP team at the EOF was comprised of a full complement of staff including the State Radiological Assessment Officer (SRAO) and Assistant SRAO. The SRAO was clearly in charge and effectively demonstrated transmission of final protective action recommendations to the BRP liaison at the State EOC, thus satisfying an exercise objective (BRP/EOF 2).

A new "EOF Transmission Sheet" was developed which provided the following information for transmission from BRP staff in the EOF to their counterparts at the FCP: Emergency Action Level (EAL), meteorological conditions, status of radioactive release, dose projection data at the site boundary, 5 miles, and 10 miles, and protective measures recommended to the public. Transmission of information was observed at 30 minute intervals or when there were significant changes in data or information. The above measures satisfied an exercise objective (BRP/EOF 1). After interfacing with the utility liaison in the EOF, transmission sheets were prepared by team members and reviewed by the BRP team leader. Information flow appeared adequate in that such messages were communicated to the FCP immediately following the leader's review. It is recommended that the team leader sign or initial transmission sheets after review to indicate that he/she concurs that the information is accurate. In addition to the EOF Transmission Sheet, another form, the "FCP Transmission Sheet to BRP" was used to provide EOF staff with a permanent record of information and data obtained by field monitoring teams.

Finally, the BRP met an exercise objective by demonstrating the effectiveness of back-up communications systems (BRP/EOF 3). A portable radio was available and observed for transmission of information between the EOF, FCP, and field monitoring teams. BRP staff indicated that training on radio use was provided during practice drills.

### Deficiencies That Would Lead to a Negative Finding

No deficiencies that would lead to a negative finding were observed at the State of New Jersey BRP during this remedial exercise.

### Other Deficiencies

No other deficiencies were observed at the State of New Jersey BRP during the remedial exercise.

### 2.1.2.2 BRP Forward Command Post

All of the staff at the Bureau of Radiation Protection Forward Command Post (BRP-FCP) demonstrated a high level of competence in the performance of their duties. The lead field assessment officer made decisions in conference with the appropriate members of his staff.

The staff at the BRP-FCP effectively deployed the field monitoring teams (one team was actually deployed, the remaining two were simulated) to the projected and actual location of the plume throughout the exercise. This action satisfied an exercise objective (BRP/FCP 1). Communication capability between the BRP-FCP and the field monitoring teams had also been improved, thus meeting an exercise objective (BRP/FCP 2). Clear, two-way communications were maintained throughout the exercise. A field transmitter malfunction was quickly remedied. Also, the plant status and protective action recommendations were regularly and promptly transmitted to the field teams. This demonstration satisfied another exercise objective (BRP/FCP 3).

#### Deficiencies That Would Lead to a Negative Finding

No deficiencies that would lead to a negative finding were observed at the State of New Jersey BRP-FCP during this remedial exercise.

#### Other Deficiencies

No other deficiencies were observed at the BRP-FCP during the remedial exercise.

##### 2.1.2.3 Radiological Field Monitoring Teams

Only one radiological field monitoring team was deployed during this remedial exercise. As noted in Sec. 2.1.2.2, radio communications between the BRP-FCP and the field team were very good in all routes traveled. No "dead spots" in communications were noted. The radio in the original field team vehicle was found to be defective while the team was in the field, but this was quickly remedied by providing the team with another vehicle equipped with a functional radio. However, it is recommended that radios be thoroughly tested before they are dispatched into the field. Plant status and protective action recommendations were also effectively communicated to the field team from the BRP-FCP.

Radiological monitoring instruments were properly calibrated, but the air sampling pump was not calibrated and could not draw the required 3 ft<sup>3</sup>/min flow rate with the particulate filter in place. Hence, the exercise objective for the field teams was only partially met (RFMT 1). Also, environmental monitoring and the contamination control (cartridge handling) technique for handling air samples utilized by the field teams should be improved. Specifically, counting of air samples should have been performed outside the plume as specified in the State plan. Furthermore, the high range ion chamber remained in the field kit without batteries until this practice was questioned by the observer. The field monitoring team SOPs requiring preoperational check of calibration and battery installation should be followed for all instrumentation.



## Deficiencies That Would Lead to a Negative Finding

No deficiencies that would lead to a negative finding were observed for the radiological field monitoring team during this remedial exercise.

## Other Deficiencies

1. Deficiency: The air sampler of the Vanguard A field team was not properly calibrated (NUREG-0654, II, H.10, I.8).

Recommendation: The air sampler should be properly calibrated.

2. Deficiency: The air sampler of the Vanguard A field monitoring team could not draw the required 3 ft<sup>3</sup>/min flowrate with the particulate filter in place (NUREG-0654, II, H.10, I.8).

Recommendation: The air sampler should be adjusted so that the required flowrate can be achieved.

3. Deficiency: The field monitoring team did not take the air sampler cartridge out of the plume into a low background area for counting (NUREG-0654, II, I.8).

Recommendation: The counting of air samples should be performed outside the plume as specified in the state plan.

4. Deficiency: The high range ion chamber remained in the field kit without batteries until this practice was questioned by the observer (NUREG-0654, II, I.8).

Recommendation: The field monitoring team SOPs requiring preoperational check of calibration and battery installation should be followed for all instrumentation.

## 2.2 SALEM COUNTY OPERATIONS

### 2.2.1 Salem County EOC

The exercise objective relating to initial notification and mobilization of emergency response personnel was satisfied (SCEOC 1). Staffing of the Salem County EOC was completed in a timely manner and activation of each municipal EOC was properly verified.

External and internal communications were improved since the October, 1984, exercise. The communications room has been relocated since the last exercise and now

has adequate space and a reduced noise level which satisfied an exercise objective (SCEOC 6) concerning improved message flow. All external communications including incoming and outgoing calls were handled expeditiously and records of each communication were maintained. The Emergency Management Radio (EMRAD) link to municipalities located within the 10-mile EPZ was used effectively. State protective action recommendations were received by telephone and confirmed by hard copy received on the telefax machine, thus correcting a deficiency from the previous exercise as well as satisfying an exercise objective (SCEOC 7).

The operations room had sufficient space and each agency had a separate telephone. A public address system was periodically used by the Emergency Management Director to provide updates on the status of the emergency to the operations room staff. Internal communication throughout the EOC was expedited by message handlers. These improvements in internal and external communications satisfied an exercise objective (SCEOC 2).

Maps showing protective actions implemented within the 10-mile EPZ, access control points, and shelters were posted in the operations room. This satisfied an exercise objective (NJEOC 1).

Although several improvements at the SCEOC were noted, there is a continuing need to strengthen emergency operations management. The County Emergency Management Director is to be recognized for improvements that have been made since the October, 1984, exercise with regard to the coordination of internal communications and the dissemination of information to municipal EOCs. However, the continued preoccupation of the County Director with message initiation, review and telephone interruptions impaired his ability to be in control of the overall emergency response. There was a lag of approximately thirty (30) minutes between receipt of the state recommendation to administer potassium iodide (KI) to emergency workers and transmission of these instructions to the municipal EOCs. However, based on the exercise scenario (wind speed and direction) no one would have been exposed to radiation due to the delay. Also, a reply to a request for clarification from the Pennsville EOC regarding the state's evacuation recommendation was not timely. Similar delays in responding to requests for information from Salem City, Quinton, and Mannington were also noted. Although message control has been improved since the last exercise, procedures should be developed for the handling of priority messages. As a result of these observed deficiencies, the three SCEOC objectives that dealt with the coordination of protective and parallel actions with the municipalities, transmitting this information in a timely manner to the municipalities, and responding in a timely manner to requests for information and assistance from the municipalities have been only partially met (SCEOC 3, SCEOC 4, and SCEOC 9).

It is important to note that the Deputy Director, New Jersey Office of Emergency Management, participated in the exercise as the State Liaison to Salem County. The Deputy Director was instrumental in facilitating operations management of the SCEOC. Throughout the exercise there was little interaction among agency representatives regarding the actions taken by their agencies to deal with the State protective action recommendations. The State Liaison Officer noticed this problem and encouraged the EOC staff to take a more active role in coordinating and discussing their



agency actions. It is imperative that each agency carefully analyze the protective action recommendations with respect to their agency's role and the resources to deal with an emergency. The instructional experience afforded by this exercise should be reinforced by continued training to insure the improvement of Salem County's radiological emergency management capabilities. Due to this deficiency, the objective dealing with demonstration of sound management and coordination of information in the SCEOC was only partially met (SCEOC 5).

At the present time, it is evident that the State's presence in the SCEOC is essential to assure an effective response to radiological emergency. The State should develop an interim plan to deal with the issue of weak management of the SCEOC.

Finally, it was encouraging that the Salem County Freeholders and legislators were present and carefully monitored the entire exercise. This satisfied an objective of the exercise (SCEOC 8).

#### Deficiencies That Would Lead to a Negative Finding

No deficiencies that would lead to a negative finding were observed at the SCEOC during this remedial exercise.

#### Other Deficiencies

1. **Deficiency:** There were some delays at the Salem County EOC in notifying some of the municipalities of the message to administer KI to emergency workers (NUREG-0654, II, J.10.e).

**Recommendation:** Staffing, procedures, and training at the SCEOC should be reviewed to determine how better overall management and more timely information flow from Salem County to the municipalities need further improvement.

2. **Deficiency:** Pennsville, Salem City, Quinton, and Mannington reported that requests for information and other assistance from the SCEOC did not always receive a prompt response (NUREG-0654, II, F.1.d).

**Recommendation:** Implement a procedure for more prompt responses by the SCEOC to requests for information and assistance from local EOCs.

3. **Deficiency:** The SCEOC emergency activities were not always well integrated and appropriate organizations did not always coordinate their agency's actions (NUREG-0654, II, A.1.d, A.2.a).

**Recommendation:** A more effective management system for Salem County, including better information dissemination among the staff and better use of staff resources is required. Salem County staffing, procedures, and training should be reviewed to determine how improvements will be implemented. The State must develop an interim plan (plan supplement) to provide management by the State, in the SCEOC until Salem County is able to be in full control of the overall emergency response. This plan should specify the scale of assistance and personnel involved.

### 2.2.2 Salem County Municipal EOCs

Federal observers evaluated activities at the following municipal EOCs in Salem County during the exercise:

- Salem City
- Mannington
- Pennsville
- Quinton
- Elsinboro
- Lower Alloways Creek

An excellent degree of participation was observed in each of the six municipal EOCs. In each instance the local Emergency Management Coordinator (EMC) as well as a group of volunteers used the remedial exercise as another opportunity for training and practice. In addition, the various municipalities successfully resolved a group of deficiencies noted at the October 23, 1984, exercise. All exercise objectives for the Salem County municipal EOCs were satisfied.

Emergency power is now available at all local Salem County EOC's (SCMEOC 5). Quinton Township has improved its response capabilities by establishing a new EOC. The callout lists at the Mannington EOC are current (SCMEOC 2) and route alerting maps and written messages for emergency workers are available at Pennsville (SCMEOC 4). Elsinboro displayed a complete set of dosimeters for emergency workers (SCMEOC 1) and the Salem City EOC dispatcher notified the EMC in a timely manner (SCMEOC 3).

The capability to maintain current displays in each EOC was further improved by the addition of overlays which satisfied an exercise objective (NJEOC 1).

### Deficiencies That Would Lead to a Negative Finding

No deficiencies that would lead to a negative finding were observed at the Salem County municipal EOCs during this remedial exercise.

### Other Deficiencies

No other deficiencies were observed at the Salem County municipal EOCs during the remedial exercise.

### 2.2.3 Field Implementation of Actions to Protect the Public

There was a limited demonstration of field activities during this remedial exercise. These activities included simulation of a school evacuation and activation of congregate care shelters and one decontamination center.

Security and traffic control for the congregate care shelters was provided by fire police at both the Woodstown High School and Centerton Fire House. This satisfied an exercise objective (FIELD 9). Properly calibrated monitoring instrumentation was available. This corrected a deficiency from the previous exercise and satisfied an exercise objective (FIELD 2).

At the Centerton Fire House, the standard forms were correctly used to record the location of any contamination. However, personnel were not fully familiar with decontamination limits. Additional training is necessary to assure that all monitoring personnel are aware of the predetermined contamination level for determining the need for decontamination. Hence, this exercise objective was only partly met (FIELD 1). At the Woodstown congregate care shelter there were sufficient numbers of trained personnel to provide radiological monitoring capability for evacuees and vehicles. Emergency clothing was available and monitoring procedures were adequate. This satisfied an exercise objective (FIELD 3).

Improvements are still needed in the dissemination of information to the American Red Cross (ARC) shelter managers. Little information concerning the number evacuees to be expected or their anticipated arrival time was passed from the Salem County EOC to the shelter managers. Hence, this exercise objective was only partly met (FIELD 8).

Proper personnel dosimeters (both self-reading and permanent record devices) were used by all emergency workers at the Quinton emergency worker decontamination center. This satisfied an exercise objective (FIELD 5). Standard forms for recording the location of contamination were properly used, thus satisfying an exercise objective (FIELD 7). Sufficient quantities of properly calibrated monitoring instrumentation were available to monitor both personnel and vehicles. This also satisfied an exercise objective (FIELD 4). Finally, the decontamination personnel were aware of the levels of contamination that would require decontamination. This corrects a deficiency from the previous exercise and satisfied an exercise objective (FIELD 6).

The Salem County Area Transit (SCAT) bus driver, who participated in the school evacuation, had a list of congregate care centers, with addresses, and a map showing approved evacuation routes. Upon direction from the Salem County EOC, the bus driver went to Mannington School to simulate picking up students and then proceeded to the Woodstown congregate care shelter, which is the shelter identified for this school in the plan. This corrected two deficiencies from the previous exercise as well as satisfying two exercise objectives (FIELD 10 and and FIELD 11). The SCAT driver was equipped with a self-reading dosimeter but had no permanent record dosimeter. Also, more training is needed in the use of dosimetry and in the use and availability of KI. This repeats previous deficiencies and only partly satisfied two exercise objectives (FIELD 12 and FIELD 13).

### Deficiencies That Would Lead to a Negative Finding

No deficiencies that would lead to a negative finding were observed during the field implementation of actions to protect the public at this remedial exercise.

### Other Deficiencies

1. **Deficiency:** Emergency workers at the Salem County congregate care shelter (Centerton Fire Station) did not know the contamination level for determining the need for decontamination (NUREG-0654, II, K.5.a).

**Recommendation:** Emergency workers should receive additional training on the contamination level for determining the need for decontamination.

2. **Deficiency:** The Salem County Congregate Care Shelter (Woodstown High School) was not apprised of when and how many evacuees to expect (NUREG-0654, II, J.10.h).

**Recommendation:** The ARC representative at the SCEOC should inform representatives at the Congregate Care Shelters of the number of evacuees and their expected time of arrival.

3. **Deficiency:** The SCAT driver was not provided with a permanent record dosimeter (NUREG-0654, II, K.3.a).

**Recommendation:** Permanent record dosimeters should be provided to all drivers involved in evacuation busing. A dosimeter distribution list should be provided to FEMA.

4. **Deficiency:** The bus driver for the school evacuation was not trained in the use of dosimeters or KI (NUREG-0654, II, K.3.a).

**Recommendation:** All emergency workers, including bus drivers, should be fully trained in radiological exposure control including the use of dosimeters and KI. The training schedule for all emergency workers should be furnished to FEMA.

### 3 SCHEDULE FOR CORRECTING DEFICIENCIES: APRIL 23, 1985, EXERCISE

Section 2 of this report lists deficiencies based on the findings and recommendations of federal observers at the radiological emergency preparedness remedial exercise for the Salem Nuclear Generating Station held on April 23, 1985. These evaluations are based on the applicable planning standards and evaluation criteria set forth in NUREG-0654-FEMA-1, Rev. 1 (Nov. 1980), and objectives for the exercise agreed upon by the state, FEMA, and the RAC.

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 that require corrective actions have been corrected and that such corrections have been incorporated into the plans as appropriate.

FEMA requests that both the state and local jurisdictions submit a schedule of actions they have taken or intend to take to correct these deficiencies. FEMA recommends that a detailed plan, including dates of completion for scheduling and implementing recommendations, be provided if corrective actions cannot be instituted immediately. FEMA further recommends that an additional effort be made by all levels of government to improve intergovernmental coordination in all aspects of the emergency planning process. A meeting between state, county, local, and FEMA officials is advisable.

No deficiencies were observed that would cause a finding that off-site emergency preparedness was not adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public living in the vicinity of the site in the event of a radiological emergency.

The deficiencies observed at the April 23, 1985, remedial exercise for the SNGS, as well as outstanding deficiencies from previous exercises, require that a schedule of corrective actions be developed. These deficiencies are summarized in the following Table 3.1. Cross-referencing is provided in Table 3.1 to the corresponding deficiency and corrective action in Table 4.1. The cross-referencing appears at the end of the corrective action description on Table 3.1 and indicates the number of the item as it appears in Table 4.1.



Table 3.1  
SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE  
April 23, 1985 and Previous Exercises

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| Element | RAC Recommendation Corrective Action   | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I)<br>Remedial Action Complete (C)<br>Incomplete (I) |
|---------|--|--------------------|-------------------------|--|--------------------------|--|---|
| 10.1    | <p>1. State of New Jersey</p> <p>1. New Jersey uses compass sectors to define protective action areas, whereas PSE&amp;G designates Emergency Planning Areas (EPAs). State and utility representatives should agree on a single method for areas where protective actions may be implemented. This deficiency regarding the designation of areas to be evacuated has been operationally addressed during the 1984 exercise. The use of EPAs has been replaced at the State EOC by the use of compass sectors which are then converted to narrative descriptions of the affected areas for EBS messages. Although this system works well, the use of EPAs is still referenced in the New Jersey Radiological Emergency Response Plan (RERP). Practice is not consistent with the plan. The New Jersey RERP should be revised to remove the EPA concept, and</p> | X                  |                         |  |                          |  | 22  |



Table 3.1  
SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE  
April 23, 1985 and Previous Exercises

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| NUREG<br>Element | RAC Recommendation Corrective Action  | Previous<br>Exercises | April 23, 1985<br>Exercise | State (S)/County (C) Response (ACTION) | Proposed<br>Completion<br>Date | FEMA Evaluation of State/County Response | Response<br>Adequate (A)<br>Inadequate (I) | Remedial<br>Action<br>Complete (C) |
|------------------|---|-----------------------|----------------------------|--|--------------------------------|--|--|------------------------------------|
|                  | replace it with the procedure presently in use based on compass sectors (Table 4.1; 26).  |                       |                            |  |                                |  |  |                                    |
| J.11             | 2. No messages were posted in the accident assessment area or the State EOC regarding protective actions implemented for the ingestion pathway. Protective actions implemented should be clearly posted on the status boards and maps (Table 4.1; 44).                                  | X                     |                            |  |                                |  |  |                                    |
| J.10.B<br>A.3    | 3. Assurance should be given that buses are available for evacuating the public in a timely fashion. (NJOEM and NJ Transit should finalize a memorandum of understanding) (Table 4.1; 31).  | X                     |                            |  |                                |  |  |                                    |
| J.10.B           | 4. Although evacuation procedures were generally clearly stated in the EBS messages, there were no clear instructions given for the evacuation of school children. The EBS evacuation messages should make it clear whether school children are to be evacuated or not (Table 4.1; 32). | X                     |                            |  |                                |  |  | C7                                 |

Table 3.1  
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| NRC<br>Element | RAC Recommendation Corrective Action   | Previous<br>Exercises | April 23, 1985<br>Exercise | State (S)/County (C) Response (ACTION) | Proposed<br>Completion<br>Date | FEMA Evaluation of State/County Response | Response<br>Adequate (A) | Inadequate (I) | Remedial<br>Action<br>Complete (C) | Incomplete (I) |
|----------------|--|-----------------------|----------------------------|--|--------------------------------|--|--------------------------|----------------|------------------------------------|----------------|
| 1.d            | 5. Some problems with determining where to locate field monitoring teams were caused by the lack of sufficient referees. There were four teams and only three referees. The state BRP should insure that a sufficient number of trained referees are provided for exercises (Table 4.1; 12).   | X                     |                            |  |                                |  |                          |                |                                    |                |
| 1.d<br>4.j     | 6. Duplicate explanations of plant events, current meteorology, and dose projection checks to BRP were delayed. Procedures for the prompt receipt of such data by BRP headquarters should be improved (Table 4.1; 42).   | X                     |                            |  |                                |  |                          |                |                                    |                |
| 1.e            | 7. The BRP was not notified of the escalation of the plant emergency action level (EAL) from unusual event to alert. The BRP was unaware of the change until it contacted the utility approximately 30 minutes after the change. The plan provisions for notifying each response organization of the plant EAL must be followed (Table 4.1; 41). | X                     |                            |  |                                |  |                          |                |                                    |                |

Table 3.1  
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|---------|--|--------------------|-------------------------|--|--------------------------|--|---|--|
| 10<br>8 | 8. The air sampler of the Vanguard A field monitoring team could not draw the required flowrate with the particulate filter in place. The air sampler should be adjusted so that the required flowrate can be achieved (Table 4.1; 17).  | X                  | X                       |  |                          |  |   |  |
| 10<br>8 | 9. The air sampler of the Vanguard A field monitoring team was not properly calibrated. The air sampler should be properly calibrated (Table 4.1; 18).   |                    | X                       |  |                          |  |   |  |
| 8       | 10. The high range ion chamber remained in the field kit without batteries until this practice was questioned by the observer. The field monitoring team SOPs requiring preoperational check of calibration and battery installation should be followed for all instrumentation (Table 4.1; 19). |                    | X                       |  |                          |  |   |  |

Table 3.1  
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|-----------|--|--------------------|-------------------------|--|--------------------------|--|---|--|
| 8         | 11. The field monitoring team did not take the air sampler cartridge out of the plume into a low background area for counting. The counting of air samples should be performed outside the plume as specified in the state plan (Table 4.1; 20).   |                    | X                       |  |                          |  |   |  |
| 10        | 12. Calculation of cumulative population dose should be performed periodically (Table 4.1; 34).  | X                  |                         |  |                          |  |   |  |
| 11        | 13. BRP should better coordinate the responsible agencies in ingestion pathway sampling and measurements (Table 4.1; 35).  | X                  |                         |  |                          |  |   |  |
| 10, 10, 1 | 14. Some problems were observed in following the proper evacuation routes. This was because the bus drivers and police escorts were unfamiliar with the area, roadways were poorly marked, and route maps were segmented. Consideration should be given to installing additional road name signs and/or route number | X                  |                         |  |                          |  |   |  |

**Table 3.1**  
**SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE**  
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|-----------|--|--------------------|-------------------------|--|--------------------------|--|--|
| 10<br>4   | <p>markers, and providing better maps and written descriptions of the routes. Existing small maps could be improved by placing an "x" or a match line at the point where the previous map ends. A larger map showing the entire evacuation route should also be included for reference in each bus driver's packet of maps (Table 4.1; 28).</p> <p>15. The bus drivers had no training in radiation record keeping or knowledge of exposure control procedures. No dosimeter chargers were available at the mustering point. The bus drivers should receive further training in radiological exposure control (Table 4.1; 47).</p> | X                  |                         |  |                          |  |  |
| 13.a<br>1 | <p>16. The bus drivers' knowledge of radiation protection and dosimetry varied greatly between the two drivers involved in the</p>   | X                  |                         |  |                          |  |  |

Table 3.1  
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|---|--------------------|-------------------------|--|--------------------------|--|--------------------------------------|---|
| <p>general population bus evacuation. Additional training should be provided to ensure that all bus drivers are knowledgeable about appropriate radiation protection including the use of dosimeters, allowable dose limits, and procedures for being authorized to receive additional exposure. The training schedule should be submitted to FEMA (Table 4.1; 37).</p> |                    |                         |  |                          |  |                                      |   |
| <p>17. The message to simulate the use of KI was not received by one of the bus drivers involved in the general population bus evacuation. Communications should be improved to ensure that messages concerning radiation exposure protective measures are received by all bus drivers (Table 4.1; 30).</p>   | X                  |                         |  |                          |  |                                      |   |



Table 3.1  
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| Element      | RAC Recommendation Corrective Action  | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A) | Inadequate (I) | Remedial Action Complete (C) | Incomplete (I) |
|--------------|---|--------------------|-------------------------|--|--------------------------|--|-----------------------|----------------|------------------------------|----------------|
| 3.a<br>3.b   | 18. The permanent record dosimeters utilized by the bus drivers involved in the general population bus evacuation were not identified by a visible identification number or code. All permanent record dosimeters must have a specific identification number so as to be traceable to the individual who used the device (Table 4.1; 38).   | X                  |                         |  |                          |  |                       |                |                              |                |
| 4.1.b<br>4.2 | II. Emergency Operations Facility<br><br>19. With the dose assessment functions of the BRP transferred to the EOF, the allocated space in the EOF was insufficient for the additional staff and equipment, and the arrangement of allocated space hindered interaction between dose assessment and management personnel for the BRP and those of the utility. If it is decided to transfer the dose assessment functions of the BRP to the EOF permanently, the BRP | X                  |                         |  |                          |  |                       |                |                              |                |

Table 3.1  
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|-------------|---|--------------------|-------------------------|--|--------------------------|--|--------------------------------------|---|
| 1<br>4<br>5 | <p>should negotiate with the utility and obtain additional space as well as rearrangement of space throughout the EOF to allow grouping of dose assessment personnel in one area and key utility and BRP/OEM management representatives in another (Table 4.1; 48).</p> <p>20. The transfer of the BRP dose assessment function from the State EOC to the EOF was experimental and is not in accord with the current New Jersey RERP. If it is decided to permanently transfer the dose assessment functions of the BRP to the EOF, the necessary procedures to implement the new arrangement should be prepared and the current RERP revised to reflect the changes (Table 4.1; 57).</p> | X                  |                         |  |                          |  |                                      | 30  |

Table 3.1  
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| Element | RAC Recommendation Corrective Action   | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I)<br>Remedial Action Complete (C)<br>Incomplete (I) |
|---------|--|--------------------|-------------------------|--|--------------------------|--|---|
|         | 21. A status board was not present in the NJSP-FCP and there was no posting of the emergency classification level. A status board displaying the emergency classification level should be displayed and maintained in the NJSP-FCP (Table 4.1; 51).  | X                  |                         |  |                          |  |   |
| 0.0.m   | 22. The NJSP-FCP room was not shielded like the nearby EOF room in the same building. When the FCP personnel were advised to move to the sealed EOF room for radiation exposure protection they could not do so since there were no communications hookups available in the EOF room. It is recommended that the FCP room in the Nuclear Training Facility building be protected similar to that in the EOF room or that the FCP be relocated to the NJSP Woodstown station (Table 4.1; 55). | X                  |                         |  |                          |  |   |

Table 3.1  
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|------------|---|--------------------|-------------------------|--|--------------------------|--|---|--|
| 0.a<br>0.j | 23. The NJSP reported to a slightly different location for one of the two access control points demonstrated during the exercise. This became apparent when the NJSP attempted to relieve the Lower Alloways Creek police at the indicated post. It is recommended that coordination between the NJSP and local police be implemented in order to obtain agreement on the precise location of the traffic control/access control points. In particular, the exact location of post #6A needs to be confirmed (Table 4.1; 56). | X                  |                         |  |                          |  |   | 32   |

Table 3.1  
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| Element | RAC Recommendation Corrective Action  | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I)<br>Remedial Action Complete (C)<br>Incomplete (I) |
|---------|---|--------------------|-------------------------|--|--------------------------|--|---|
| 1<br>2  | <p>III. Joint News Center and Public Education</p> <p>24. Public information materials have been developed indicating evacuation routes and the location of congregate care centers. These materials have not been distributed by PSE&amp;C due to printing problems. Distribution of public information informing residents of protective actions should be continued. In addition, information should be disseminated to those locations where transients might be: e.g., Salem Golf and Country Club, and the Salem Motor Lodge. Although the results of the formal survey conducted by the State and utility regarding public awareness are not yet available, a spot check of EPZ residents during the 1984 exercise indicated that, even though</p> | X                  |                         |  |                          |  |   |

Table 3.1  
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| Element | RAC Recommendation Corrective Action  | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A) Inadequate (I) Remedial Action Complete (C) Incomplete (I) |
|---------|---|--------------------|-------------------------|--|--------------------------|--|--|
|         | <p>PSE&amp;G has mailed information concerning emergency planning to EPZ residents, public awareness of protective actions was somewhat weak. This is a continuing deficiency that was observed at previous exercises. The public education program must be intensified so the residents of Salem and Cumberland Counties be more aware of protective actions to be taken during a radiological emergency (Table 4.1; 63, 128).</p> <p>25. Media kits containing background information were not available at the media center. Media kits should be prepared and be made available to the press at the media center (Table 4.1; 62).</p> | X                  |                         |  |                          |  | 34   |



Table 3.1  
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|------------------|---|-----------------------|----------------------------|--|--------------------------------|--|--|--|
| 1.1.d<br>1.2.a   | <p>IV. Salem County</p> <p>26. The SCEOC emergency activities were not always well integrated and appropriate organizations did not always coordinate their agency's actions. A more effective management system for Salem County, including better information dissemination among the staff and better use of staff resources is required. Salem County staffing, procedures, and training should be reviewed to determine how improvements will be implemented. The State must develop an interim plan (plan supplement) to provide management by the State, in the SCEOC until Salem County is able to be in full control of the overall emergency response. This plan should specify the scale of assistance and personnel involved (Table 4.1; 65).</p> | X                     | X                          |  |                                |  |  | SC   |

Table 3.1  
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| Element | RAC Recommendation Corrective Action  | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I) | Remedial Action Complete (C)<br>Incomplete (I) |
|---------|---|--------------------|-------------------------|--|--------------------------|--|---|--|
| 4       | 27. Elsinboro, Salem City, Penna-ville, Mannington, and Quinton reported that requests for information and other assistance from the SCEOC did not always receive a prompt response. Implement a procedure for more prompt responses by the SCEOC to requests for information and assistance from municipal EOCs (Table 4.1; 81).   | X                  | X                       |  |                          |  |   |  |
| 0.      | 28. The 1982 Post Exercise Assessment stated "Salem County must demonstrate the capability to implement protective measures. The county should demonstrate its capability to relocate the populace, evacuate residents from the EPZ, and control access." At the 1983 exercise, the county demonstrated the ability to evacuate residents from the EPZ. Access control was not an objective for the county for this exercise and should be demonstrated in a future exercise (Table 4.1; 67). | X                  |                         |  |                          |  |   |  |

Table 3.1  
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|---|--------------------|-------------------------|--|--------------------------|--|---|--|
| <p>29. There were some delays in the EOC notifying some of the municipalities of the message to administer KI to emergency workers. Staffing, procedures and training at the SCEOC should be reviewed to determine how better overall management and more timely information flow from Salem County to the municipalities need further improvements (Table 4.1; 69).</p> <p>30. Although 24-hour staffing capability of the SCEOC was demonstrated by presentation of a roster, the SCEOC staff indicated that supplemental personnel from the State OEM or from other counties might be required for prolonged operations. The potential need for supplemental resources from other counties and/or the State should be identified in the Plan, and written agreements reached with these other jurisdictions for providing these resources. Appropriate training should also be provided (Table 4.1; 71).</p> | <p>X</p> <p>X</p>  | <p>X</p>                |  |                          |  |   |  |

Table 3.1  
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| Element | RAC Recommendation Corrective Action   | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response                     |                |
|---------|--|--------------------|-------------------------|--|--------------------------|--|------------------------------|----------------|
|         |  |                    |                         |  |                          |  | Adequate (A)                 | Inadequate (I) |
|         |  |                    |                         |  |                          |  | Remedial Action Complete (C) | Incomplete (I) |
| 5.a     | 31. Emergency workers at the Salem County congregate care shelter (Centerton Fire Station) did not know the contamination level for determining the need for decontamination. Emergency workers should receive additional training on the contamination level for determining the need for decontamination (Table 4.1; 119). | X                  | X                       |  |                          |  |                              |                |
| 10.1    | 32. The Salem County congregate care center (Woodstown High School) was not apprised of when and how many evacuees to expect. The ARC representative at the SCEOC should inform representatives at the congregate care shelters of the number of evacuees and their expected time of arrival (Table 4.1; 95).                | X                  | X                       |  |                          |  |                              |                |

Table 3.1  
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|---------|--|--------------------|-------------------------|--|--------------------------|--|---|--|
| 5.b     | 33. At the Salem County decontamination center only one shower stall was available for decontamination, which would be insufficient during emergency worker shift changes or peak processing of people at the center. Additional shower facilities should be available at the decontamination center. Separate showers should be available for men and women (Table 4.1; 105). | X                  |                         |  |                          |  |   |  |
| 3.a     | 34. At the 3A traffic control point, dosimetry equipment was not observed. Police officers assigned to traffic control points should be equipped with personal dosimeters and should be trained in their use (Table 4.1; 111).   | X                  |                         |  |                          |  |   |  |
| 3.a     | 35. Radiological exposure control dosimeters were not issued by the County for the bus driver involved in the evacuation of transit dependent individuals.   | X                  |                         |  |                          |  |   |  |

Table 3.1  
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| Element | RAC Recommendation Corrective Action  | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I) | Remedial Action Complete (C)<br>Incomplete (I) |
|---------|---|--------------------|-------------------------|--|--------------------------|--|---|--|
| 0.d     | <p>Moreover, the driver appeared to have had no training in the use of dosimeters. Radiological exposure control dosimeters and training in their use is required for personnel involved in evacuation busing (Table 4.1; 109).</p> <p>36. The ability to evacuate mobility impaired individuals in Salem County was not demonstrated. The ability to evacuate mobility impaired individuals should be tested in a future exercise (Table 4.1; 91).</p> | X                  |                         |  |                          |  |   |  |
| .a      | <p>37. In the 1984 exercise, the bus driver for the school evacuation in Salem County did not have a dosimeter. In the 1985 remedial exercise, the bus driver had a self-reading dosimeter but no permanent record dosimeter. Appropriate dosimetry should be provided to all drivers in evacuation busing. The listing on distribution of dosimetry should be provided to FEMA (Table 4.1; 101).</p>   | X                  | X                       |  |                          |  |   |  |



Table 3.1  
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|---|--------------------|-------------------------|--|--------------------------|--|---|--|
| <p>38. The bus driver for the school evacuation in Salem County was not trained in the use of dosimeters or KI. All emergency workers, including bus drivers, should be fully trained in radiological exposure control including the use of dosimeters and KI. The training schedule for all emergency workers should be furnished to FEMA (Table 4.1; 92).</p> | X                  | X                       |  |                          |  |   |  |
| <p>39. During the September 27, 1984 medical drill, the ambulance crew member who called in to Salem County Memorial Hospital over the radio neglected to say "This is a drill". All radio transmissions made as part of future medical drills should be clearly identified as such (Table 4.1; 116).</p>   | X                  |                         |  |                          |  |   |  |

Table 3.1  
SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE  
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| Element | MAC Recommendation Corrective Action   | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A) Inadequate (I) Remedial Action Complete (C) Incomplete (I) |
|---------|--|--------------------|-------------------------|--|--------------------------|--|--|
| 3       | V. Salem County Municipalities<br>40. Elsinboro, Mannington, and Salem City should participate in communication training and drills (Table 4.1; 82).   | X                  |                         |  |                          |  |  |
| 2.a     | 41. Although a letter was sent to all Mayors and Boards of Chosen Freeholders as a result of the 1981 exercise, the level of participation of emergency personnel in the exercise was disappointing. Every effort should be made by the Mayors and Board of Freeholders to educate their emergency personnel of the importance of the exercise experience.<br><br>On the basis of the 1984 exercise, this remains incomplete for the Elsinboro and Mannington EOCs. The Elsinboro and Mannington EOCs need to improve their participation levels. The inter-action and coordination of their | X                  |                         |  |                          |  |  |

Table 3.1  
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|---------|--|--------------------|-------------------------|--|--------------------------|--|---|--|
|         | staff could not be fully evaluated. A system should be implemented to increase the participation levels of volunteer staff at the Elsinboro and Mannington EOCs. The timing of the exercise should be given greater consideration in the scenario development (Table 4.1; 72). |                    |                         |  |                          |  |   |  |
| 4       | 42. The radiological officer at the Lower Alloways Creek EOC was not aware of the exposure threshold for recalling field staff. Emergency staff should be trained to be knowledgeable in the maximum allowable dose for field staff (Table 4.1; 142).                          | X                  |                         |  |                          |  |   |  |
| 3       | 43. The Pennsville EOC is too small for effective operation. Consideration should be given to re-locating the Pennsville EOC to a larger facility (Table 4.1; 158).  | X                  |                         |  |                          |  |   |  |

Table 3.1  
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|-------------|---|--------------------|-------------------------|--|--------------------------|--|---|
| 10.e<br>3.b | 44. The Lower Alloways Creek police officer at one access control point was not completely familiar with the use of dosimeters and KI. Police should receive KI and additional training on the use of dosimeters and KI (Table 4.1; 153). | X                  |                         |  |                          |  |   |
| 3.a         | 45. Personnel of the Lower Alloways Creek rescue squad had no dosimeters (Table 4.1; 143).  | X                  |                         |  |                          |  |   |
| 3.a<br>3.b  | 46. Most emergency workers responding to an impediment to evacuation left their dosimeters in their vehicles. All emergency workers should be instructed to carry dosimeters with them at all times in the field (Table 4.1; 141).        | X                  |                         |  |                          |  |   |
| 10.d        | 47. Not all emergency workers responding to the impediment to evacuation were aware of procedures for use and authorization of KI. All emergency workers should be fully trained in the use of KI (Table 4.1; 148).                       | X                  |                         |  |                          |  |   |

Table 3.1  
SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE  
April 23, 1985 and Previous Exercises

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| Element | RAC Recommendation Corrective Action  | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I) | Remedial Action Complete (C)<br>Incomplete (I) |
|---------|---|--------------------|-------------------------|--|--------------------------|--|---|--|
| 2       | 48. All municipal EOCs should perform reentry procedures to the extent possible in the time frame of the exercise (Table 4.1; 150).   | X                  |                         |  |                          |  |   |  |
|         | VI. Cumberland County   |                    |                         |  |                          |  |   |  |
| 4       | 49. The facilities at the Cumberland County EOC were marginal. Space and furniture were limited. Cumberland County should investigate the possibility of providing additional space and facilities for extended operations at the EOC (Table 4.1; 126).   | X                  |                         |  |                          |  |   |  |
| 2.a     | 50. The Cumberland County EOC occasionally became overcrowded and noisy because of the presence of non-essential personnel who were not identified in the county's RERP staffing list. A means should be developed to limit the number of personnel in the CCEOC. For example, only those individuals with a pre-established EOC or field assignment should, be | X                  |                         |  |                          |  |   |  |

**Table 3.1**  
**SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE**  
**April 23, 1985 and Previous Exercises**

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| Element         | RAC Recommendation Corrective Action   | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I)<br>Remedial Action Complete (C)<br>Incomplete (I) |
|-----------------|--|--------------------|-------------------------|--|--------------------------|--|---|
| 3               | <p>allowed access into the EOC without specific permission of the EMC (Table 4.1; 124).</p> <p>51. Cumberland County should participate in communication training and drills (Table 4.1; 82).</p>  | X                  |                         |  |                          |  |   |
| 1.b<br>1.e<br>3 | <p>52. Changes in plant status and other important exercise developments were not promptly relayed by the CCEOC to the Greenwich and Stow Creek EOCs. Communications procedures with local EOCs should be clarified, and communications personnel trained. The CCEOC should review its plan to assure that appropriate messages are transmitted to the local EOCs, and participate in communications training drills with the local EOCs (Table 4.1; 133).</p> | X                  |                         |  |                          |  |   |



Table 3.1  
SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE  
April 23, 1985 and Previous Exercises

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| Element | RAC Recommendation Corrective Action  | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I)<br>Residual Action Complete (C)<br>Incomplete (I) |
|---------|---|--------------------|-------------------------|--|--------------------------|--|---|
| 2.a     | 53. Some minor problems with message handling and documentation were observed at the CCEOC, including incorrectly identifying the source of a message, not including the times that some of the messages were received, and not knowing with certainty how to identify messages to the state as exercise messages. Additional training of communications personnel should be conducted to ensure accurate documentation of messages (Table 4.1; 125). | X                  |                         |  |                          |  |   |
| 1.d     | 54. The Cumberland County radiological field team's radio was not adequate for contacting the CCEOC and the FCP from all field monitoring locations. Cumberland County should investigate the need for a more powerful radio system for use by their radiological field teams for communications with the EOC and FCP (Table 4.1; 127).   | X                  |                         |  |                          |  |   |

Table 3.1  
SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE  
April 23, 1985 and Previous Exercises

6/19/85  
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| Element | RAC Recommendation Corrective Action  | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I) | Remedial Action Complete (C)<br>Incomplete (I) |
|---------|---|--------------------|-------------------------|--|--------------------------|--|---|--|
| 55.     | Some of the volunteer staff at the Cumberland County EOC as well as the health department representative seemed to have a limited knowledge of the distribution and use of KI. Additional training should be implemented to familiarize selected staff members with the use of KI (Table 4.1; 131). | X                  |                         |  |                          |  |   |  |
| VII.    | Cumberland County Municipalities  |                    |                         |  |                          |  |   |  |
| 56.     | Emergency backup power supplies were either inadequate or lacking at the Greenwich and Stow Creek municipal EOCs. Emergency generators of appropriate capacity should be procured to assure uninterrupted operation of these local EOCs (Table 4.1; 152).   | X                  |                         |  |                          |  |   |  |
| 57.     | Greenwich should participate in communication training and drills (Table 4.1; 82).  | X                  |                         |  |                          |  |   |  |

Table 3.1  
SALEM NUCLEAR GENERATING STATION - REMEDIAL ACTION SCHEDULE  
April 23, 1985 and Previous Exercises

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| Element | RAC Recommendation Corrective Action   | Previous Exercises | April 23, 1985 Exercise | State (S)/County (C) Response (ACTION) | Proposed Completion Date | FEMA Evaluation of State/County Response | Response Adequate (A)<br>Inadequate (I)<br>Remedial Action Complete (C)<br>Incomplete (I) |
|---------|--|--------------------|-------------------------|--|--------------------------|--|---|
| 2       | 58. Both Cumberland County municipal EOCs should perform reentry procedures to the extent possible in the time frame of the exercise (Table 4.1; 150). | X                  |                         |  |                          |  | 67  |

#### 4 SUMMARY OF DEFICIENCIES

Section 3 of this report provides a schedule for the correction of deficiencies noted during the April 23, 1985, exercise.

Table 4.1 summarizes recommendations to correct those deficiencies. For purposes of verification, the table compares these recommendations with the recommendations based upon the previous exercises. The current status of all recommendations is indicated.

Cross-referencing is provided for the 1985 exercise deficiency recommendations appearing in Table 4.1. The cross-referencing appears at the end of the corrective action description and consists of the section number of this report in which the deficiency is described, and the number of the deficiency as listed in the section.

Table 4.1 Recommendations to Remedy Deficiencies in Off-Site Radiological Emergency Response Preparedness at Exercises for the Salem Nuclear Generating Station on April 23, 1985, October 23, 1984, October 26, 1983, October 13, 1982, and April 8, 1981

6/19/85

| No. | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|---|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|     |   |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 1.  | The Bureau of Radiation Protection (BRP) liaison officer and his staff are located on the second floor of the State EOC, hampering communications and protective action decision making with the Command and Control center which is located on the first floor of the EOC. Communications between the Bureau of Radiation Protection Office and the Command and Control Center should be strengthened to facilitate and expedite protective action decision making at the State EOC. Consideration should be given to moving the BRP liaison office to the first floor of the EOC and defining the role of this liaison office as one of relaying and interpreting, as necessary, technical information from the EOC (Section 2.1.1; 3). | A.1.b   |                                 |                   | x                 |                           | State                     | C                           |
| 2.  | Procedures for communication with federal agencies should be improved. The state procedures should be modified concerning calls to Brookhaven National Laboratory for federal assistance.   | A.3   | x                               |                   |                   |                           | State                     | C                           |
| 3.  | There is a need for procedures for requesting monitoring assistance and coordinating such assistance with the State.  | A.3   | x                               |                   |                   |                           | State                     | C                           |
| 4.  | Based on the previous exercise there was a general agreement that federal agencies should be involved in exercises. However, FEMA was the only federal agency involved in this exercise.  | A.3   | x                               |                   |                   |                           | State                     | C                           |
| 5.  | Checklists, which were to be developed as a result of the 1981 exercise, were not observed.   | D.4   | x                               |                   |                   |                           | State                     | C                           |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-BEP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified                     |                   |                   |                           | Jurisdiction <sup>c</sup>   | Present Status <sup>d</sup>                         |
|-----|--|---|---|-------------------|-------------------|---------------------------|---|---|
|     |  |   | Previous Exercises <sup>b</sup>           | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |   |   |
| 6.  | In response to a criticism regarding notification procedures at the 1981 exercise, a unified "Initial Contact Message Form" has been developed. Its use, however, was sporadic. Some municipalities have not yet received the forms. Procedures for their use should be developed. These forms should be utilized by all levels of government. | E.1<br>F.1  | x<br>x<br>x<br>x<br>x<br>x<br>x<br>x<br>x |                   | x                 |                           | State<br>Salem<br>Cumberland<br>Elsinboro<br>Lower Alloways<br>Mannington<br>Pennsville<br>Quinton<br>Salem City<br>Greenwich<br>Stow Creek | C<br>C<br>C<br>C<br>C<br>C<br>C<br>C<br>C<br>C<br>C |
| 7.  | All agencies should respond promptly to notification as required by the plan.  | E.2   | x   |                   |                   |                           | State   | C   |
| 8.  | Care should be taken to have the siren sound before the EBS is activated. A procedural change requiring that, prior to EBS activation, the county emergency management coordinator notify the state that the sirens had sounded would ensure the timely sequencing of alerting and notification.   | E.3   | x   | x                 |                   |                           | State   | C   |
| 9.  | The BRP-FCP should improve its internal communications, especially its message board.  | F   | x   |                   |                   |                           | State   | C   |
| 10. | The radio communications link between the FCP and the EOC should be maintained throughout the accident.  | F.1   | x   |                   |                   |                           | State   | C   |
| 11. | The individual in charge at the BRP-FCP did not obtain maximum use of the field monitoring teams due to inefficient positioning of the teams. The BRP-FCP should improve its coordination with the EOC with regard to the projected location of the plume and the need for data at specific locations (Section 2.1.2.2; 1).                    | F.1.d   |   |                   |                   | x                         | State   | C   |
| 12. | Some problems with determining where to locate field monitoring teams were caused by the lack of sufficient referees. There were four teams and only three referees. The State BRP should insure that a sufficient number of trained referees are provided for exercises (Section 2.1.2.2; 2).   | F.1.d   |   |                   |                   | x                         | State   | N/Obj(85)   |



Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|---|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|     |   |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 13. | Radio communications between the FCP and all of the field monitoring teams should be assured. Radio equipment should be evaluated and improved to eliminate difficulties in maintaining contact with the field teams. Radio communications between the field monitoring teams and the FCP continued to be a problem during the 1984 exercise. Radio contact was intermittently lost throughout the exercise by both field teams observed. The adequacy of the existing communications system utilized between the FCP and the field monitoring teams should be reviewed and improvements implemented in order to assure the capability for uninterrupted communications between the FCP and the field teams. Installation of the radio tower planned for the FCP can improve the communications (Section 2.1.2.2; 3). | F.1.d   |                                 | x                 | x                 |                           | State                     | C                           |
| 14. | Notifications regarding the status of emergency or protective actions in effect were not relayed to the field monitoring teams with the exception of the recommendation to take KI during the 1984 exercise. The FCP should keep field teams better informed with respect to the status of emergency or protective action recommendations (Section 2.1.2.2; 4).   | F.1.d<br>G.4.j  |                                 | x                 | x                 |                           | State                     | C                           |
| 15. | The receiver in the state EOC apparently was not sensitive enough to pick up the first EBS test message. At the Media Center there are now radios in the state PIO work area.   | G.4.a   | x<br>x                          | x<br>-            |                   |                           | State<br>State-JMC        | C<br>C                      |
| 16. | Both teams did not have documentation of the last calibration for all of the radiation detection instruments. Individual instruments either did not have calibration labels or the labels indicated dates that were over one year old. Instrument calibration documentation procedures should be strengthened to ensure that calibrations are performed according to plan and that evidence of the calibrations is present (Section 2.1.2.3; 2).  | H.10  |                                 |                   | x                 |                           | State                     | C                           |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|---|---|---------------------------------|-------------------|-------------------|---------------------------|-----------------------------|
|     |   |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                             |
| 17. | The air sampler of the Vanguard A field monitoring team could not draw the required flowrate with the particulate filter in place. The air sampler should be adjusted so that the required flowrate can be achieved. (Section 2.1.2.3; 1 and Section 2.1.2.3; 2)  | H.10<br>I.8   | —                               |                   | x                 | x                         | State<br>I                  |
| 18. | The air sampler of the Vanguard A field team was not properly calibrated. The air sampler should be properly calibrated (Section 2.1.2.3; 1).   | H.10<br>I.8   |                                 |                   |                   | x                         | State<br>I (N)              |
| 19. | The high range ion chamber remained in the field kit without batteries until this practice was questioned by the observer. The field monitoring team SOPs requiring preoperational check of calibration and battery installation should be followed for all instrumentation (Section 2.1.2.3; 4).   | I.8   |                                 |                   |                   | x                         | State<br>I (N)              |
| 20. | The field monitoring team did not take the air sampler cartridge out of the plume into a low background area for counting. The counting of air samples should be performed outside the plume as specified in the state plan (Section 2.1.2.3; 3).   | I.8   |                                 |                   |                   | x                         | State<br>I (N)              |
| 21. | The power converter for the air sampler of the Vanguard A team failed. The cause of the failure of the Vanguard A team power converted should be determined and corrected (Section 2.1.2.3; 3).   | I.8   |                                 |                   |                   | x                         | State<br>C                  |
| 22. | The field monitoring equipment is kept in the BRP-FCF, rather than with field units. The equipment used for this Salem exercise is the very same equipment that was used at Oyster Creek. Distributing the equipment according to where the next exercise will be leaves one of the two New Jersey sites without equipment. This deficiency should be corrected by providing each site with its own field monitoring equipment, the equipment would be available for use by backup personnel even if the monitoring teams were delayed by unexpected problems such as bad weather. If the equipment were stored with the field teams, set-up and calibration could be performed during transit. | I.8   | x                               |                   |                   |                           | State<br>C                  |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-LEP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|--|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|     |  |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 23. | Communications between the BRP-FCP and monitoring teams should be improved by using a standardized format for transmittal of the data.   | I.8   | x                               |                   |                   |                           | State                     | C                           |
| 24. | Thyroid dose data should always be taken and transmitted.  | I.9   | x                               |                   |                   |                           | State                     | C                           |
| 25. | The thyroid dose rate monitoring equipment (Sam II) should use silver zeolite cartridges and should be operated at the proper air flow rate. The silver zeolite cartridges were available; charcoal cartridges were used due to cost of silver zeolite.  | I.9   | x                               |                   |                   |                           | State                     | C                           |
| 26. | New Jersey uses compass sectors to define protection action areas, whereas PSE&G designates Emergency Planning Areas (EPAs). State and utility representatives should agree on a single method for areas where protective actions may be implemented. This deficiency regarding the designation of areas to be evacuated has been operationally addressed during the 1984 exercise. The use of EPAs has been replaced at the State EOC by the use of compass sectors which are then converted to narrative descriptions of the affected areas for EBS messages. Although this system works well, the use of EPAs is still referenced in the New Jersey Radiological Emergency Response Plan (RERP). Practice is not consistent with the plan. The New Jersey RERP should be revised to remove the EPA concept, and replace it with the procedure presently in use based on compass sectors (Section 2.1.1; 1). | J.10.a  |                                 | x                 | x                 |                           | State                     | N/Obj(85)                   |
| 27. | Maps in the State EOC did not indicate the sectors in which protective actions had been implemented. Maps in the State EOC should be equipped with overlays that indicate sectors where protective actions have been implemented (Section 2.1.1; 2).   | J.10.a  |                                 |                   | x                 |                           | State                     | C                           |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|--|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|     |  |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 28. | Some problems were observed in following the proper evacuation routes. This was because the bus drivers and state police escorts were unfamiliar with the area, roadways were poorly marked, and route maps were segmented. Consideration should be given to installing additional road name signs and/or route number markers, and providing better maps and written descriptions of the routes. Existing small maps could be improved by placing an "x" or a match line at the point where the previous map ends. A larger map showing the entire evacuation route should also be included for reference in each bus driver's packet of maps (Section 2.1.3; 1). | J.10.a<br>J.10.g<br>O.1                                       | —                               |                   | x                 |                           | State                     | N/Obj(85)                   |
| 19. | The protective kits for the field monitoring teams should contain KI, as called for in the plan. KI was available at the BRP-FCP and would have been distributed in a real emergency.  | J.10.a  | x                               |                   |                   |                           | State                     | C                           |
| 10. | The message to simulate the use of KI was not received by one of the bus drivers involved in the general population bus evacuation. Communications should be improved to ensure that messages concerning radiation exposure protective measures are received by all bus drivers (Section 2.1.3; 3).  | J.10.e<br>J.10.f  |                                 |                   | x                 |                           | State                     | N/Obj(85)                   |
| 11. | Assurance should be given that buses are available for evacuating the public in a timely fashion. (NJDEM and NJ Transit should finalize a memorandum of understanding.)  | J.10.g<br>A.3   | x                               | x                 |                   |                           | State                     | N/Obj(85)                   |
| 12. | Although evacuation procedures were generally clearly stated in the EBS messages, there were no instructions given for the evacuation of school children. EBS evacuation messages should make it clear whether school children are to be evacuated or not (Section 2.1.1; 4).  | J.10.g  |                                 |                   | x                 |                           | State                     | N/Obj(85)                   |
| 13. | Very little dose projection, plant condition, or protective action information was transmitted back to the BRP-FCP from BRP headquarters. More open exchange of data and information should be maintained between BRP headquarters and the BRP-FCP.  | I.8   |                                 | x                 |                   |                           | State                     | C                           |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup>         |
|-----|---|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-------------------------------------|
|     |   |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                                     |
| 34. | Calculation of cumulative population dose should be performed periodically.   | L.10  | X                               |                   |                   |                           | State                     | N/Obj(83)<br>N/Obj(84,<br>85)       |
| 35. | SEF should better coordinate the responsible agencies in ingestion pathway sampling and measurements.   | J.11  | X                               |                   |                   |                           | State                     | N/Obj(83)<br>N/Obj(84)<br>N/Obj(85) |
| 36. | Maps or displays identifying dairy farms or food processing plants were not posted or available. Maps or displays indicating key land-use data (e.g., farming), dairies food processing plants, water supply, intakes, water treatment plants, and reservoirs should be developed.  | J.11  | X                               |                   |                   |                           | State                     | C                                   |
| 37. | The bus drivers' knowledge of radiation protection and dosimetry varied greatly between the two drivers involved in the general population bus evacuation. Additional training should be provided to ensure that all bus drivers are knowledgeable about appropriate radiation protection including the use of dosimeters, allowable dose limits, and procedures for being authorized to receive additional exposure. The training schedule should be submitted to FEMA (Section 2.1.3; 2). | K.3.a.<br>O.1   |                                 |                   | X                 |                           | State                     | N/Obj(85)                           |
| 38. | The permanent record dosimeters utilized by the bus drivers involved in the general population bus evacuation were not identified by a visible identification number or code. All permanent record dosimeters must have a specific identification number so as to be traceable to the individual who used the device (Section 2.1.3; 4).  | K.3.a<br>K.3.b  |                                 |                   | X                 |                           | State                     | N/Obj(85)                           |
| 39. | Simulated release of radiation should be large enough to allow for significant activity in the area of field monitoring and dose assessment capability.   | F.9   | X                               |                   |                   |                           | State                     | C                                   |
| 40. | There is a need for improved coordination between the NJSP and NJ Transit during exercises in executing evacuation of the general public. Procedures need to be clarified between NJSP and NJ Transit designating lead and dispatch responsibilities for evacuation buses.  | J.10.g  |                                 | X                 |                   |                           | State                     | C                                   |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action   | NUREG-0654<br>FDA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|---|--|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|     |   |  | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 41. | The BRP was not notified of the escalation of the plant emergency action level (EAL) from unusual event to alert. The BRP was unaware of the change until it contacted the utility approximately 30 minutes after the change. The plan provisions for notifying each response organization of the plant EAL must be followed. | F.1.a  | ---                             | x                 |                   |                           | State                     | N/Obj(85)                   |
| 42. | Duplicate explanations of plant events, current meteorology, and dose projection checks to BRP were delayed. Procedures for the prompt receipt of such data by BRP headquarters should be improved.   | F.1.d  |                                 | x                 |                   |                           | State                     | N/Obj(85)                   |
| 43. | Improper instructions and training have been given regarding the authorization and administration of KI to emergency bus drivers have been made. Improved provisions and training are required for the use of radioprotective drugs by emergency workers.   | J.10.e<br>E.3.b  |                                 | x                 |                   |                           | State                     | C                           |
| 44. | No messages were posted in the accident assessment area or the State EOC regarding protective actions implemented for the ingestion pathway. Protective actions implemented should be clearly posted on the status boards and maps.   | J.11   |                                 | x                 |                   |                           | State                     | N/Obj(85)                   |
| 45. | The FCF radio operator did not always indicate that the transmissions were part of the exercise. The FCF radio operator should always include "this is a drill..." in the transmissions. Perhaps rubber stamping the information on the message form will enhance the transmission of this information.                       | E.1  |                                 | x                 |                   |                           | State                     | C                           |
| 46. | Communications capability between the NJ transit dispatcher and evacuation buses is lacking. NJ transit buses should be equipped with radios. The interim use of state police escort vehicles should continue until the radios are installed.   | F.1.a  |                                 | x                 |                   |                           | State                     | C                           |
| 47. | The bus drivers had no training in radiation record keeping or knowledge of exposure control procedures. No dosimeter chargers were available at the mustering point. The bus drivers should receive further training in radiological exposure control.   | N.10<br>G.4  |                                 | x                 |                   |                           | State                     | N/Obj(85)                   |



Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-REF-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      | Remedial<br>Exercise<br>4/23/85 | Jurisdiction <sup>c</sup> | Present<br>Status <sup>d</sup> |
|-----|--|---|------------------------------------|----------------------|----------------------|---------------------------------|---------------------------|--------------------------------|
|     |  |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 |                                 |                           |                                |
| 48. | With the dose assessment functions of the SRP transferred to the EOF, the allocated space in the EOF was insufficient for the additional staff and equipment, and the arrangement of allocated space hindered interaction between dose assessment and management personnel for the SRP and those of the utility. If it is decided to transfer the dose assessment functions of the SRP to the EOF permanently, the SRP should negotiate with the utility and obtain additional space as well as rearrangement of space throughout the EOF to allow grouping of dose assessment personnel in one area and key utility and SRP/OEM management representatives in another (Section 2.2.1; 2). | A.1.b<br>B.2  |                                    |                      | X                    |                                 | State-EOF                 | N/Obj(85)                      |
| 49. | The designated SRP official at the EOF was not unequivocally in control and his authority for decision-making was not clear. Recommendations for protective actions had to receive support from the SRP staff at the State EOC prior to being sent to OEM. If it is decided to transfer dose assessment functions of the SRP to the EOF permanently, the functional roles of the SRP representatives in the EOF versus those in the State EOC should be redefined. This is needed in order to clearly identify one individual to unequivocally carry out SRP responsibilities (Section 2.2.1; 1).  | A.1.d   |                                    |                      | X                    |                                 | State-EOF                 | C                              |
| 50. | Before the EOF opens, the utility technical support center should have the correct telephone numbers to make contact with appropriate state representatives.   | B.6   | X                                  |                      |                      |                                 | State-EOF                 | C                              |
| 51. | A status board was not present in the NJSP-FCF and there was no posting of the emergency classification level. A status board displaying the emergency classification level should be displayed and maintained in the NJSP-FCF (Section 2.2.2; 1).   | D.3   |                                    |                      | X                    |                                 | State-EOF                 | N/Obj(85)                      |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      | Remedial<br>Exercise<br>4/23/85 | Jurisdiction <sup>c</sup> | Present<br>Status <sup>d</sup> |
|-----|--|---|------------------------------------|----------------------|----------------------|---------------------------------|---------------------------|--------------------------------|
|     |  |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 |                                 |                           |                                |
| 52. | The 1982 Post Exercise Assessment stated: since the phone to Lower Alloways Creek at the EOF is not to be converted to state use, other measures should be taken so that there are more telephones for state agencies at the EOF.<br><br>At the 1983 exercise, it was observed that the phone to Lower Alloways Creek had been disconnected. Dedicated and commercial phone lines had been added. There are now sufficient telephones for state agencies at the EOF.                         | F.1.b   | x                                  |                      |                      |                                 | State-EOF                 | C                              |
| 53. | The BRP-FCP was hampered by a lack of communications from the EOF regarding emergency action levels, dose projection data, and protective action measures. Action should be taken to improve coordination and ensure a timely flow of information from the EOF to the FCP. Future training should stress the importance of an open exchange of information from the EOF regarding protective action measures and dose projection data (Section 2.2.1; 4).                                    | F.1.d<br>I.11   |                                    |                      | x                    |                                 | State-EOF                 | C                              |
| 54. | An attempt by the BRP-FCP to contact the EOF using the backup radio method was unsuccessful during the exercise because the EOF staff did not have adequate training in the operation of the equipment. Future training should stress the need to have the backup radio operational during an emergency response in case problems develop with use of the primary system. The use of the backup radio system should be demonstrated in a future exercise (Section 2.2.1; 5).                 | F.1.d   |                                    |                      | x                    |                                 | State-EOF                 | C                              |
| 55. | The NJSP-FCP room was not shielded like the nearby EOF room in the same building. When the FCP personnel were advised to move to the sealed EOF room for radiation exposure protection they could not do so since there were no communications hookups available in the EOF room. It is recommended that the FCP room in the Nuclear Training Facility building be protected similar to that in the EOF room, or that the FCP be relocated to the NJSP Woodstown station (Section 2.2.2; 2). | J.9<br>J.10.m   |                                    |                      | x                    |                                 | State-EOF                 | N/Obj(85)                      |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|--|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|     |  |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 56. | The NJSP reported to a slightly different location for one of the two access control points demonstrated during the exercise. This became apparent when the NJSP attempted to relieve the Lower Alloways Creek police at the indicated post. It is recommended that coordination between the NJSP and local police be implemented in order to obtain agreement on the precise location of the traffic control/access control points. In particular, the exact location of post #6A needs to be confirmed (Section 2.2.2; 3). | J.10.a<br>J.10.j  |                                 |                   | x                 |                           | State-EOF                 | N/Obj(85)                   |
| 57. | The transfer of the BRP dose assessment function from the State EOC to the EOF was experimental and is not in accord with the current New Jersey RERP. If it is decided to permanently transfer the dose assessment functions of the BRP to the EOF, the necessary procedures to implement the new arrangement should be prepared and the current RERP revised to reflect the changes (Section 2.2.1; 3).  | P.3<br>P.4<br>P.5   |                                 |                   | x                 |                           | State-EOF                 | N/Obj(85)                   |
| 58. | Satellite EBS stations should be better briefed in proper procedures concerning transmittal of information from the state regarding radiological emergencies.  | E.5   | x                               |                   |                   |                           | State-JMC                 | C                           |
| 59. | Hard copies of the EBS messages should be available for the state PIOs.  | E.5   | x                               |                   |                   |                           | State-JMC                 | C                           |
| 60. | Additional training of the rumor control staff is necessary if they are to convey information properly regarding an unfolding emergency.   | G.4.c   | x                               |                   |                   |                           | State-JMC                 | C                           |
| 61. | It was not observed whether the masthead used by the media center PIO had the telephone number of the state PIO in the governor's office.  | G.4.b   | x                               |                   |                   |                           | State-JMC                 | C                           |
| 62. | Media kits containing background information were not available at the media center. Media kits should be prepared and be made available to the press at the media center (Section 2.3; 1).  | G.5   |                                 |                   | x                 |                           | State-JMC                 | N/Obj(85)                   |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-REF-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|--|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|     |  |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 63. | Public information materials have been developed indicating evacuation routes and the location of congregate care centers. These materials have not been distributed by PSE&G due to printing problems. Distribution of public information informing residents of protective actions should be continued. In addition, information should be disseminated to those locations where transients might be: e.g., Salem Golf and Country Club, and the Salem Motor Lodge.  | G.1<br>G.2  | -- x<br>(1981)                  | x                 | x                 |                           | State-JMC                 | N/Obj(85)                   |
|     | Although the results of the formal survey conducted by the State and utility regarding public awareness are not yet available, a spot check of EPZ residents during the 1984 exercise indicated that, even though PSE&G has mailed information concerning emergency planning to EPZ residents, public awareness of protective actions was somewhat weak. This is a continuing deficiency that was observed at previous exercises. The public education program must be intensified so the residents of Salem and Cumberland counties be more aware of protective actions to be taken during a radiological emergency (Section 2.3; 2).   |   |                                 |                   |                   |                           |                           |                             |
| 64. | County should in subsequent exercises, demonstrate a capability in fire and rescue, transportation and public information.   | A.1.b   | x                               |                   |                   |                           | Salem                     | C <sup>1</sup>              |
| 65. | The SCEOC emergency activities were not always well integrated and appropriate organizations did not always coordinate their agency's actions. A more effective management system for Salem County, including better information dissemination among the staff and better use of staff resources is required. Salem County staffing, procedures, and training should be reviewed to determine how improvements will be implemented. The State must develop an interim plan (plan supplement) to provide management by the State, in the SCEOC until Salem County is able to be in full control of the overall emergency response. This plan should specify the scale of assistance and personnel involved (Section 2.4.1; 1 and Section 2.2.1; 3). | A.1.d<br>A.2.a  | x                               | x                 | x                 | x                         | Salem                     | I                           |

<sup>1</sup>Medical drill on 9/27/84 adequately demonstrated that an injured, contaminated person could be handled and treated.

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|-----|---|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|     |   |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 66. | At the Salem County EOC the transmission of timely protective action messages to all the municipalities within Salem County continued to be a problem during the 1984 exercise. This was also identified in previous exercises. Some official State decisions to implement protective actions were substantially delayed in being received by the municipalities from the SCEOC. In one case a protective action message was not received from the county. These communications problems appear to be the result of lack of adequate management and a lack of an adequate number of trained personnel in the SCEOC. Better overall management and coordination of information, as well as improved flow of information from Salem County to the municipalities are required. Staffing, procedures, and training at the SEOC should be reviewed to determine how improvements can be implemented (Section 2.4.1; 1). | A.1.d<br>A.2.a  | x                               | x                 | x                 |                           | Salem                     | C                           |
| 57. | The 1982 Post Exercise Assessment stated "Salem County must demonstrate the capability to implement protective measures. The county should demonstrate its capability to participate in relocating the populace, evacuate residents from the EPZ, and control access."<br><br>At the 1983 exercise, the county demonstrated the ability to evacuate residents from the EPZ. Access control was not an objective for the county for this exercise and should be demonstrated in a future exercise.   | J.10.j  | x                               | x                 | x                 |                           | Salem                     | N/Obj(85)                   |
| 68. | There were significant delays in the Salem County EOC notifying some of the municipalities of the evacuation message. Salem County's ability to manage an orderly evacuation was, therefore, not demonstrated. Better overall management and more timely information flow from Salem County to the municipalities are required. Staffing, procedures and training at the SCEOC should be reviewed to determine how improvement can be implemented (Section 2.4.1; 2).   | J.9<br>J.10.g   |                                 |                   | x                 |                           | Salem                     | C                           |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified                     |                       |                   |                           | Jurisdiction <sup>c</sup>   | Present Status <sup>d</sup>                                    |
|-----|--|---|---|-----------------------|-------------------|---------------------------|---|--|
|     |  |   | Previous Exercises <sup>b</sup>           | Exercise 10/26/83     | Exercise 10/23/84 | Remedial Exercise 4/23/85 |   |  |
| 69. | There were some delays in the Salem County EOC notifying some of the municipalities of the message to administer KI to emergency workers. Staffing, procedures, and training at the SCEOC should be reviewed to determine how better overall management and more timely information flow from Salem County to the municipalities need further improvements (Section 2.4.1; 3 and Section 2.2.1; 1).  | J.10.e  |   |                       | x                 | x                         | Salem   | I  |
| 70. | Even though there was acceptable coordination of protective or parallel actions from the state perspective, directives were not effectively acted upon at the county and local level. Information management was weak and coordination of protective actions inefficient.  | A.2.a   | x<br>x<br>x<br>x<br>x<br>x<br>x<br>x<br>x | x<br>x<br>x<br>x<br>x | x<br>x<br>x       |                           | Salem<br>Cumberland<br>Mannington<br>Salem City<br>Elsinboro<br>Lower Alloways<br>Creek<br>Pennsville<br>Quinton<br>Greenwich<br>Stow Creek | C<br>N/Obj(85)<br>C<br>C<br>N/Obj(85)<br>C<br>C<br>C<br>C<br>C |
| 71. | Although 24-hour staffing capability of the SCEOC was demonstrated by presentation of a roster, the SCEOC staff indicated that supplemental personnel from the State OEM or from other counties might be required for prolonged operations. The potential need for supplemental resources from other counties and/or the State should be identified in the Plan, and written agreements reached with these other jurisdictions for providing these resources. Appropriate training should also be provided (Section 2.4.1; 6). | A.3<br>A.4  |   |                       | x                 |                           | Salem   | N/Obj(85)  |
| 72. | Although a letter was sent to all Mayors and Boards of Chosen Freeholders as a result of the 1981 exercise, the level of participation of emergency personnel in the exercise was disappointing. Every effort should be made by the Mayors and Board of Freeholders to educate their emergency personnel of the importance of the exercise experience.   | A.4   | x<br>x<br>x<br>x<br>x<br>x<br>x           | x                     | x                 |                           | Salem<br>Cumberland<br>Lower Alloways<br>Mannington<br>Salem City<br>Elsinboro<br>Pennsville<br>Quinton<br>Greenwich<br>Stow Creek          | C<br>C<br>C<br>N/Obj(85)<br>C<br>N/Obj(85)<br>C<br>C<br>C<br>C |



Table 4.1 (Cont'd)

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| No.   | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      |                                 | Jurisdiction <sup>c</sup> | Present<br>Status <sup>d</sup> |
|-------|---|---|------------------------------------|----------------------|----------------------|---------------------------------|---------------------------|--------------------------------|
|       |   |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 | Remedial<br>Exercise<br>4/23/85 |                           |                                |
|       | On the basis of the 1984 exercise, this remains incomplete for the Elsinboro and Mannington EOCs. The Elsinboro and Mannington EOCs need to improve their participating levels. The interaction and coordination of their staff could not be fully evaluated. A system should be implemented to increase the participation levels of volunteer staff at the Elsinboro and Mannington EOCs. The timing of the exercise should be given greater consideration in the scenario development (Section 2.4.2; 3). |   |                                    |                      |                      |                                 |                           |                                |
| 73.   | The checklist of actions to be taken at different emergency classification levels contained in the state plan should be used.   | D.4   | x                                  |                      |                      |                                 | Salem                     | C                              |
| 74.   | The county should investigate an improvement in the alerting system for emergency response staff in order to reduce response time.  | E.2   | x<br>x                             |                      |                      |                                 | Salem<br>Cumberland       | C<br>C                         |
| 75.   | The radiological officer and the Red Cross representative were late in reporting to the SCEOC. Mobilization procedures should be reviewed to ensure that all personnel can be notified and mobilized to the SCEOC in a timely manner in the event of an actual radiological emergency (Section 2.4.1; 4).   | E.2   |                                    |                      | x                    |                                 | Salem                     | C                              |
| 76.   | Communications between congregate care and decontamination centers should be improved.  | F.1   | x                                  |                      |                      |                                 | Salem                     | C                              |
| 77.   | More than one person should be used to handle EOC radio traffic.  | F.1.a   | x                                  |                      |                      |                                 | Salem                     | C                              |
| 78.   | A hot line system should be installed in Salem County, to allow simultaneous calls to all local governments.  | F.1.b   | x                                  |                      |                      |                                 | Salem                     | C                              |
| * 79. | Communications within the SCEOC were limited and telephone traffic did not flow smoothly. Salem County should consider more space to accommodate an efficient placement of telephones in the SCEOC. The county should also consider implementing a more effective telephone message control system to facilitate the flow and use of emergency information.   | F.1.b   |                                    | x                    | x                    |                                 | Salem                     | C                              |

Table 4.1 (Cont'd)

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| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified                     |                      |                      |                                 | Jurisdiction <sup>c</sup>  | Present<br>Status <sup>d</sup>   |
|-----|--|---|---|----------------------|----------------------|---------------------------------|--|--|
|     |  |   | Previous<br>Exercises <sup>b</sup>        | Exercise<br>10/26/83 | Exercise<br>10/23/84 | Remedial<br>Exercise<br>4/23/85 |  |  |
| 80. | The hard-copy communication device was not moved to the new SCEOC and was not utilized during the exercise. It is suggested that the hard copy device be moved to the new EOC and that it be used during future exercises to expedite the flow of key messages (Section 2.4.1; 7).   | F.1.b<br>H.3  |   |                      |                      | x                               | Salem  | C  |
| 81. | Elsinboro, Salem City, Pennsville, Mannington, and Quinton reported that requests for information and other assistance from the SCEOC did not always receive a prompt response. Implement a procedure for more prompt responses by the SCEOC to requests for information and assistance from local EOCs (Section 2.2.1; 2).  | F.1.d   | x   | x                    |                      | x                               | Salem  | I  |
| 82. | All counties and municipalities should participate in communication training and drills.   | F.3   | x<br>x<br>x<br>x<br>x<br>x<br>x<br>x<br>x | x<br>x               |                      |                                 | Salem<br>Cumberland<br>Elsinboro<br>Lower Alloways<br>Mannington<br>Pennsville<br>Quinton<br>Salem City<br>Greenwich<br>Stow Creek | C<br>N/Obj(85)<br>N/Obj(85)<br>C<br>N/Obj(85)<br>C<br>C<br>N/Obj(85)<br>N/Obj(85)<br>C |
| 83. | Briefing procedures at the SCEOC were not sufficient or timely and the public address system was not consistently used to notify staff of the emergency situation. Salem County should review internal communications with the intent of improving briefing procedures and consistent use of the public address system to notify the staff of changes in the emergency classification level. | H.3   | x   | x                    |                      |                                 | Salem  | C  |
| 84. | The Salem EOC was crowded on the day of the exercise. Consideration should be given to relocation of the EOC to a larger facility.   | H.3   | x   |                      |                      |                                 | Salem  | C  |
| 85. | The county EOC should have an emergency log, and the accident classification and the protective action in effect should be listed on the EOC status board. All messages should be posted. Maps should be used to plot information.   | H.3   | x   | x                    |                      |                                 | Salem  | C  |

Table 4.1 (Cont'd)

6/19/85

| No. | Recommended Corrective Action  | MUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      | Remedial<br>Exercise<br>4/23/85 | Jurisdiction <sup>c</sup> | Present<br>Status <sup>d</sup> |
|-----|--|---|------------------------------------|----------------------|----------------------|---------------------------------|---------------------------|--------------------------------|
|     |  |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 |                                 |                           |                                |
| 86. | Badges should be issued to EOC staff and visitors. Greater care should be taken to determine whether individuals should be admitted to the EOC.  | H.3   | x                                  |                      |                      |                                 | Salem                     | C                              |
| 87. | The communications room at the new Salem County EOC is small and the noise level was high, making it difficult to hear when using the telephone. Consideration should be given to relocating the communications equipment to a larger room at the SCEOC (Section 2.4.1; 5).  | H.3   |                                    |                      | x                    |                                 | Salem                     | C                              |
| 88. | There are no maps indicating the location of schools and institutions. This detail should be included, either on an overlay to be used with existing sector maps, or on a separate map.  | H<br>J.10   | x                                  |                      |                      |                                 | Salem                     | C                              |
| 89. | The bus driver for school evacuation in Salem County did not know which reception center school evacuees were to be taken to. All bus drivers for school evacuation should be trained to know the reception center(s) to which school evacuees should be taken. (Section 2.4.3; 15).   | J.10.a  |                                    |                      | x                    |                                 | Salem                     | C                              |
| 90. | The Salem County EOC instructed the school bus driver to take evacuees to a location not designated in the plan for that specific school. The Salem County EOC should give instructions consistent with their plan (Section 2.4.3; 14).  | J.10.a  |                                    |                      | x                    |                                 | Salem                     | C                              |
| 91. | The ability to evacuate mobility impaired individuals in Salem County was not demonstrated. The ability to evacuate mobility impaired individuals should be tested in future exercise (Section 2.4.3; 13).   | J.10.d  |                                    |                      | x                    |                                 | Salem                     | N/Obj(85)                      |
| 92. | The bus driver for the school evacuation in Salem County was not trained in the use of dosimeters or KI. All emergency workers, including bus drivers, should be fully trained in radiological exposure control including the use of dosimeters and KI. The training schedule for all emergency workers should be furnished to FEMA (Section 2.4.3; 17 and Section 2.2.3;4). | J.10.a<br>K.3.b   |                                    |                      | x                    | x                               | Salem                     | I                              |

Table 4.1 (Cont'd)

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| No. | Recommended Corrective Action  | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      |                                 | Jurisdiction <sup>c</sup> | Present<br>Status <sup>d</sup> |
|-----|--|---|------------------------------------|----------------------|----------------------|---------------------------------|---------------------------|--------------------------------|
|     |  |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 | Remedial<br>Exercise<br>4/23/85 |                           |                                |
| 93. | There were no police officers or other personnel available to provide traffic control or security at the Salem County congregate care shelter. Police officers or other uniformed personnel should be assigned to the congregate care shelter to provide traffic control and security (Section 2.4.3; 3).  | J.10.h  |                                    |                      | x                    |                                 | Salem                     | C                              |
| 94. | Emergency vehicles should be located at the congregate care center. Security should be established at the facility. It should be staffed with radiological monitoring and decontamination personnel who are proficient in their assignments.   | J.10.h  | x                                  |                      |                      |                                 | Salem                     | C                              |
| 95. | The Salem County congregate care shelter (Woodstown High School) was not apprised of when and how many evacuees to expect. The ARC representative at the SCEOC should inform representatives at the congregate care shelters of the number of evacuees and their expected time of arrival (Section 2.4.3; 2 and Section 2.2.3; 2).   | F.1.e   |                                    | x                    | x                    | x                               | Salem                     | I                              |
| 96. | At congregate care centers, separate rooms for individuals with special needs should be provided.  | J.12  | x                                  |                      |                      |                                 | Salem                     | C                              |
| 97. | The capability of Salem County to provide congregate care centers was not tested.  | J.12  | x                                  |                      |                      |                                 | Salem                     | C                              |
| 98. | At the Salem County congregate care center, there were no radiological monitoring personnel or equipment to monitor evacuees for radiological contamination. The congregate care center should demonstrate the ability to monitor evacuees and vehicles in future exercises (Section 2.4.3; 1).  | J.12  |                                    |                      | x                    |                                 | Salem                     | C                              |
| 99. | At the Salem County emergency worker decontamination center, only about 15 people per hour could be monitored due to the limited number of low-range radiation detectors observed during the exercise. During shift changes there could be lines of potentially contaminated workers waiting to be monitored. Additional low-range radiation detectors should be available at the decontamination center (Section 2.4.3; 4). | J.12  |                                    |                      | x                    |                                 | Salem                     | C                              |

Table 4.1 (Cont'd)

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| No.  | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      |                                 | Jurisdiction <sup>c</sup> | Present<br>Status <sup>d</sup> |
|------|---|---|------------------------------------|----------------------|----------------------|---------------------------------|---------------------------|--------------------------------|
|      |   |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 | Remedial<br>Exercise<br>4/23/85 |                           |                                |
| 100. | At the Salem County decontamination center, the forms available for recording emergency worker's exposures do not include a place for recording the location of body contamination for monitored workers. Emergency worker exposure record forms should be revised to include a place for recording the location of body contamination (Section 2.4.3; 7).  | J.12  |                                    |                      | x                    |                                 | Salem                     | C                              |
| 101. | In the 1984 exercise, the bus driver for the school evacuation in Salem County did not have a dosimeter. In the 1985 remedial exercise, the bus driver had a self-reading dosimeter but no permanent record dosimeter. Appropriate dosimetry should be provided to all drivers involved in evacuation busing. The listing of dosimetry should be provided to FEMA (Section 2.4.3; 16 and Section 2.2.3; 3). | K.3.a   |                                    |                      | x                    | x                               | Salem                     | I                              |
| 102. | The procedures for initial screening of potentially contaminated persons were not performed rapidly enough.   | K.5.a   | x                                  |                      |                      |                                 | Salem                     | C                              |
| 103. | Personnel at the Salem County emergency worker decontamination center were not aware of the radiation levels above which decontamination should be performed. Additional training should be provided for decontamination center personnel who are responsible for determining whether emergency workers need to be decontaminated (Section 2.4.3; 8).   | K.3.a   | x                                  | x                    | x                    |                                 | Salem                     | C                              |
| 104. | The layout of the decontamination center should be changed in order to eliminate the possibility of contamination of clean area. There should be more than one shower, enough to allow for the anticipated number of evacuees. There should be more communications between county and state personnel. Monitoring technicians need more training.   | K.3.b   | x                                  |                      |                      |                                 | Salem                     | C                              |

Table 4.1 (Cont'd)

6/19/85

| No.  | Recommended Corrective Action  | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup>            |
|------|--|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|--|
|      |  |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |  |
| 105. | At the Salem County decontamination center only one shower stall was available for decontamination, which would be insufficient during emergency worker shift changes or peak processing of people at the center. Additional shower facilities should be available at the decontamination center. Separate showers should be available for men and women (Section 2.4.3; 5). | K.5.b   |                                 |                   | x                 |                           | Salem                     | N/Obj(85)                              |
| 106. | In 1982, it was not observed whether the staff of the Salem County Hospital had been trained in radiological matters as had been recommended after the 1981 exercise.  | L.1   | x                               | x                 |                   |                           | Salem                     | C                                      |
| 107. | The county should demonstrate reentry capability.  | M   | x<br>x                          |                   |                   |                           | Salem<br>Cumberland       | N/Obj(83, 84, 85)<br>N/Obj(83, 84, 85) |
| 108. | An increased level of participation by response agencies in future exercises is required. Exercise objectives should be executed to the greatest degree practicable.   | N.1.b   | x<br>x                          |                   |                   |                           | Salem<br>Cumberland       | C<br>C                                 |
| 109. | Radiological exposure control dosimeters were not issued by the County for the bus driver involved in the evacuation of transient dependent individuals. Moreover the driver appeared to have had no training in the use of dosimeters. Radiological exposure control dosimeters and training in their use is required for personnel involved in evacuation busing.          | K.3.a   |                                 | x                 |                   |                           | Salem                     | N/Obj(85)                              |
| 110. | Activation of the 4B traffic control point was neither simulated nor demonstrated. The ability to activate traffic control points should be tested in future exercises.  | E.2   |                                 | x                 |                   |                           | Salem                     | C                                      |
| 111. | At the 5A traffic control point, dosimetry equipment was not observed. Police officers assigned to traffic control points should be equipped with personal dosimeters and should be trained in their use.  | K.3.a   |                                 | x                 |                   |                           | Salem                     | N/Obj(85)                              |

Table 4.1 (Cont'd)

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| No.  | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|------|---|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|      |   |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 112. | Rescue squad personnel need additional self reading dosimeters. An adequate supply of self reading dosimeters is required for the rescue squad.   | K.3.a   |                                 | x                 |                   |                           | Salem                     | C                           |
| 113. | A health physicist was not available to hospital staff during the exercise for consultation. Because this was an off-site accident, an health physicist would have to be acquired from Philadelphia, approximately 30 minutes away. Salem County should review the availability of health physics expertise for medical support and consider the use of utility assistance with off-site accidents. | L.1   |                                 | x                 |                   |                           | Salem                     | C                           |
| 114. | The hospital had one instrument available for radiological monitoring and the available staff did not demonstrate adequate knowledge of contamination levels. Available written procedures were not referenced. Hospital staff members require additional radiological monitoring equipment. Further, the staff requires additional training for determining the need for decontamination.          | K.5.a<br>L.1  |                                 | x                 |                   |                           | Salem                     | C                           |
| 115. | The hospital staff did not demonstrate monitoring and decontamination of the ambulance and its staff. The monitoring and decontamination of the ambulance and crew should be demonstrated in a future emergency drill.  | K.5.a<br>L.1  |                                 | x                 |                   |                           | Salem                     | C                           |
| 116. | During the September 27, 1984 medical drill, the ambulance crew member who called in to Salem County Memorial Hospital over the radio neglected to say "This is a drill." All radio transmissions made as part of future medical drills should be clearly identified as such (Section 2.4.3; 18).   | F.2<br>N.2.c  |                                 |                   | x                 |                           | Salem                     | N/Obj(85)                   |
| 117. | The Salem County congregate care shelter should be able to demonstrate management capability over a prolonged period. An assistant or standby shelter manager should be designated and trained.   | A.4   |                                 | x                 |                   |                           | Salem                     | C                           |



Table 4.1 (Cont'd)

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| No.  | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      |                                 | Jurisdiction <sup>c</sup> | Present<br>Status <sup>d</sup> |
|------|---|---|------------------------------------|----------------------|----------------------|---------------------------------|---------------------------|--------------------------------|
|      |   |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 | Remedial<br>Exercise<br>4/23/85 |                           |                                |
| 118. | The radiological monitoring equipment at the Salem County congregate care shelter had not been calibrated within the past year. Equipment should be calibrated at the time intervals recommended by the supplier.   | K.10  | —                                  | x                    |                      |                                 | Salem                     | C                              |
| 119. | Emergency workers at the Salem County congregate care shelter (Centerton Fire Station) did not know the contamination level for determining the need for decontamination. Emergency workers should receive additional training on the contamination level for determining the need for decontamination (Section 2.2.3; 1).  | K.5.a   |                                    | x                    |                      | x                               | Salem                     | I                              |
| 120. | Personnel at the Salem County decontamination center were not provided with personal dosimeters. Workers at the decontamination center should be supplied with personal dosimeters. In the 1984 exercise the workers had pocket dosimeters but no permanent record dosimeters (Section 2.4.3; 6).   | K.3.a   |                                    | x                    | x                    |                                 | Salem                     | C                              |
| 121. | The appropriate equipment for monitoring vehicles was not available at the decontamination center. The decontamination center should be equipped with all necessary radiological monitoring devices to effectively perform their function.  | H.7   |                                    | x                    |                      |                                 | Salem                     | C                              |
| 122. | Cumberland County must demonstrate the establishment of specific organizations as part of the overall emergency response. All organizations listed in the plan should participate in the exercise. The determination of whether organizational functions and responsibilities have been properly assigned can only be done with greater participation in radiological emergency preparedness exercises. | A.1.a   | x                                  |                      |                      |                                 | Cumberland                | C                              |
| 123. | There should be more than one person assisting the county emergency management coordinator.   | A.1.b   | x                                  |                      |                      |                                 | Cumberland                | C                              |

Table 4.1 (Cont'd)

6/19/85

| No.  | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|------|---|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|      |   |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 124. | The Cumberland County EOC (CCEOC) occasionally became overcrowded and noisy because of the presence of non-essential personnel who were not identified in the county's KERP staffing list. A means should be developed to limit the number of personnel in the CCEOC. For example, only those individuals with a pre-established EOC or field assignment should be allowed access into the EOC without specific permission of the EMC (Section 2.5.1; 1). | A.2.a<br>H.3  |                                 |                   |                   | x                         | Cumberland                | N/Obj(85)                   |
| 125. | Some minor problems with message handling and documentation were observed at the CCEOC, including incorrectly identifying the source of a message, not including the times that some of the messages were received, and not knowing with certainty how to identify messages to the state as exercise messages. Additional training of communications personnel should be conducted to ensure accurate documentation of messages (Section 2.5.1; 3).       | A.2.a   |                                 |                   |                   | x                         | Cumberland                | N/Obj(85)                   |
| 126. | The facilities at the Cumberland County EOC were marginal. Space and furniture were limited. Cumberland County should investigate the possibility of providing additional space and facilities for extended operations at the EOC (Section 2.5.1; 2).   | A.4<br>H.3  |                                 |                   |                   | x                         | Cumberland                | N/Obj(85)                   |
| 127. | The Cumberland County radiological field team's radio was not adequate for contacting the CCEOC and the FCP from all field monitoring locations. Cumberland County should investigate the need for a more powerful radio system for use by their radiological field teams for communications with the EOC and FCP (Section 2.5.1; 4).   | F.1.d   |                                 |                   |                   | x                         | Cumberland                | N/Obj(85)                   |
| 128. | Residents of Cumberland and Salem Counties must be made aware of protective actions to be taken during a radiological emergency.  | G.1<br>G.2  | x                               | x<br>x            | x<br>x            |                           | Cumberland<br>Salem       | N/Obj(85)<br>N/Obj(85)      |
| 129. | The county EOC required more space. Possibly, an additional trailer could be used.  | H.3   | x                               |                   |                   |                           | Cumberland                | C                           |

Table 4.1 (Cont'd)

6/19/85

| No.  | Recommended Corrective Action  | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified           |                   |                   |                           | Jurisdiction <sup>c</sup> | Present Status <sup>d</sup> |
|------|--|---|---------------------------------|-------------------|-------------------|---------------------------|---------------------------|-----------------------------|
|      |  |   | Previous Exercises <sup>b</sup> | Exercise 10/26/83 | Exercise 10/23/84 | Remedial Exercise 4/23/85 |                           |                             |
| 130. | Maps could be larger and show greater detail.  | J.10.b  | x                               |                   |                   |                           | Cumberland                | C                           |
| 131. | Some of the volunteer staff at the Cumberland County EOC as well as the health department representative seemed to have a limited knowledge of the distribution and use of KI. Additional training should be implemented to familiarize selected staff members with the use of KI (Section 2.5.1; 5).  | J.10.a<br>O.1   |                                 |                   | x                 |                           | Cumberland                | N/Obj(85)                   |
| 132. | The use of dosimeters needs improvement. Emergency workers within Cumberland County require more training. Detailed planning and training of individuals in the area of radiological health needs to be improved. Permanent radiological record devices should be made available.  | K.3.a<br>K.3.b  | x                               |                   |                   |                           | Cumberland                | C                           |
| 133. | Changes in plant status and other important exercise developments were not promptly relayed by the CCEOC to the Greenwich and Stow Creek EOCs. Communications procedures with local EOCs should be clarified, and communications personnel trained. The CCEOC should review its plan to assure that appropriate messages are transmitted to the local EOCs, and participate in communications training drills with the local EOCs. | F.1.b   |                                 | x                 |                   |                           | Cumberland                | N/Obj(85)                   |
| 134. | The EMC held briefings of the staff only infrequently. The EOC staff would benefit from periodic briefings and status updates.   | A.1.b<br>A.2.a  |                                 | x                 |                   |                           | Cumberland                | C                           |
| 135. | Stow Creek firefighters were not adequately trained in radiological exposure control procedures, including the use of personal dosimeters and dose record keeping. Also, they did not have KI. Firefighters should receive periodic training in radiological exposure control procedures. They should also have KI.  | K.3.b   |                                 | x                 |                   |                           | Stow Creek                | C                           |
| 136. | A status board indicating the emergency classification level and important messages should be utilized at Stow Creek. The status board indicating the emergency classification level and important messages should be used at the Stow Creek EOC.  | D.3.  | x                               | x                 |                   |                           | Stow Creek                | C                           |

Table 4.1 (Cont'd)

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| No.  | Recommended Corrective Action   | NUREG-0654<br>FEMA-REF-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      |                                 | Jurisdiction <sup>c</sup>                           | Present<br>Status <sup>d</sup> |
|------|---|---|------------------------------------|----------------------|----------------------|---------------------------------|---|--------------------------------|
|      |   |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 | Remedial<br>Exercise<br>4/23/85 |   |                                |
| 137. | As a result of the 1981 exercise, posters displaying the current emergency class were prominently displayed in most EOCs. The Elsinboro EOC did not display or use the required emergency preparedness posters. This EOC should post and use the required posters including status boards, the plume EPZ, population distribution, evacuation routes, access control points and relocation centers. | D.3   | x                                  | x                    |                      |                                 | Elsinboro   | C                              |
| 138. | At Salem City there was over a one hour delay in the EOC dispatcher notifying the EMC of the alert declaration. Alerting procedures at Salem City should be improved to ensure that the EMC is notified of the alert declaration in a more timely manner (Section 2.4.2; 1).  | E.2   |                                    |                      | x                    |                                 | Salem City  | C                              |
| 139. | Not all of the telephone numbers on the Mannington call list, used for alerting emergency staff, had been updated. Telephone numbers listed on the Mannington staffing call list should be periodically reviewed and updated as needed (Section 2.4.2; 2).  | E.2   |                                    |                      | x                    |                                 | Mannington  | C                              |
| 140. | As in the previous year, in general there was little participation in the exercise by elected and appointed officials.  | A.4   | x<br>x<br>x                        |                      |                      |                                 | Mannington<br>Pennsville<br>Greenwich<br>Stow Creek | C<br>C<br>C<br>C               |
| 141. | Most emergency workers responding to an impediment to evacuation left their dosimeters in their vehicles. All emergency workers should be instructed to carry dosimeters with them at all times in the field (Section 2.4.3; 11).   | K.3.a<br>K.3.b  |                                    |                      | x<br>x               |                                 | Salem City<br>Elsinboro                             | N/Obj(85)<br>N/Obj(85)         |
| 142. | The radiological officer at the Lower Alloways Creek EOC was not aware of the exposure threshold for recalling field staff. Emergency staff should be trained to be knowledgeable in the maximum allowable dose for field staff (Section 2.4.2; 8).   | K.4   |                                    |                      | x                    |                                 | Lower Alloways                                      | N/Obj(85)                      |
| 143. | Personnel of the Lower Alloways Creek rescue squad had no dosimeters.   | K.3.a   |                                    | x                    |                      |                                 | Lower Alloways                                      | N/Obj(85)                      |

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[illegible]

Table 4.1 (Cont'd)

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| No.  | Recommended Corrective Action  | NUREG-0654<br>FEMA-REF-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified                   |                            |                           |                           | Jurisdiction <sup>c</sup>   | Present Status <sup>d</sup>     |
|------|--|---|---|----------------------------|---------------------------|---------------------------|---|---------------------------------|
|      |  |   | Previous Exercises <sup>b</sup>         | Exercise 10/26/83          | Exercise 10/23/84         | Remedial Exercise 4/23/85 |   |                                 |
| 151. | With the exception of Salem City, dosimeters were not generally distributed (1981 and 1982). Inadequate supplies of dosimeters were observed at Elsinboro and Pennsville (1983). Self-reading dosimeters of both low-range (0-200 mR) and intermediate-range (either 0-5 R or 0-20 R) sensitivity and a permanent record device should be provided to all emergency workers. The Elsinboro EOC had an insufficient number (only 2) of dosimeter sets available during the 1984 exercise. This deficiency was corrected at Pennsville (Section 2.4.2; 6,7). | K.3.a<br>K.3.b  | x<br>x<br>x<br>N Obs<br>x<br>N Obs<br>x | x<br><br><br>x<br><br><br> | x<br><br><br><br><br><br> | <br><br><br><br><br><br>  | Elsinboro<br>Lower Alloways<br>Mannington<br>Pennsville<br>Quinton<br>Greenwich<br>Stow Creek | C<br>C<br>C<br>C<br>C<br>C<br>C |
| 152. | Emergency back up power supplies were either inadequate or lacking at the Greenwich and Stow Creek municipal EOCs. Emergency generators of appropriate capacity should be procured to assure uninterrupted operation of these local EOCs (Section 2.5.2; 1).   | H.3   |   | x<br>x                     | x<br>x                    |                           | Greenwich<br>Stow Creek   | N/Obj(85)<br>N/Obj(85)          |
| 153. | The Lower Alloways Creek police officer at one access control point was not completely familiar with the use of dosimeters and KI. Police should receive KI and additional training on the use of dosimeters and KI. KI should be distributed as appropriate (Section 2.4.3; 10).  | J.10.e<br>K.3.b   |   |                            | x                         |                           | Lower Alloways Creek  | N/Obj(85)                       |
| 154. | The Elsinboro EOC staff lacked some of the necessary training to perform all of the correct communications procedures. Elsinboro EOC staff members who are responsible for implementing the required communication procedures should attend training sessions.   | F.3   |   | x                          |                           |                           | Elsinboro   | C                               |
| 155. | Procedural checklists were not used at the Elsinboro EOC. Procedural checklists should be designed and used.   | D.4   | x                                       | x                          |                           |                           | Elsinboro   | C                               |
| 156. | A 24-hour call list for EOC staffing was not available in the Mannington EOC. A 24-hour call list should be prepared and used. Sufficient emergency response personnel should be recruited and trained to provide 24-hour continuous emergency response operations.  | A.1.e<br>A.4  | x                                       | x                          |                           |                           | Mannington  | C                               |

Table 4.1 (Cont'd)

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| No.  | Recommended Corrective Action   | NUREG-0654<br>FEMA-REP-1<br>Rev. 1,<br>Reference <sup>a</sup> | Deficiency Identified              |                      |                      |                                 | Jurisdiction <sup>c</sup> | Present<br>Status <sup>d</sup> |
|------|---|---|------------------------------------|----------------------|----------------------|---------------------------------|---------------------------|--------------------------------|
|      |   |   | Previous<br>Exercises <sup>b</sup> | Exercise<br>10/26/83 | Exercise<br>10/23/84 | Remedial<br>Exercise<br>4/23/85 |                           |                                |
| 157. | The route alerting teams in Pennsville are not supplied with maps or written messages. The route alerting teams should be supplied with maps and written messages to assure the effective route alerting, if needed (Section 2.4.3; 9). | E.6   | ---                                |                      |                      | x                               | Pennsville                | C                              |
| 158. | The Pennsville EOC is too small for effective operation. Consideration should be given to relocation of the Pennsville EOC to a larger facility (Section 2.4.2; 4).   | H.3   | x<br>x                             | x                    | x                    |                                 | Pennsville<br>Quinton     | N/Obj(85)<br>C                 |
| 159. | Training in emergency response procedures and use of emergency equipment is necessary for Mannington.   | O.1.b   | x                                  |                      |                      |                                 | Mannington                | C                              |

<sup>a</sup>N/R: No NUREG-0654 reference.<sup>b</sup>Previous exercises were held on October 13, 1982 and April 8, 1981.

<sup>c</sup>State: Primarily or wholly related to state or SEOC (West Trenton) functions.  
 State-EOF: Primarily or wholly related to Emergency Operations Facility functions.  
 State-JMC: Primarily or wholly related to Joint Media Center functions.  
 Salem: Primarily or wholly related to Salem County functions.  
 Cumberland: Primarily or wholly related to Cumberland County functions.  
 Elsinboro  
 Greenwich  
 Lower Alloways Creek  
 Mannington  
 Pennsville  
 Quinton  
 Salem City  
 Stow Creek

Primarily or wholly related to the respective municipality's function

<sup>d</sup>C: Corrective action complete  
 I: Corrective action incomplete  
 N/Obj(83): Not observed during the 1983 exercise  
 N/Obj(83): Not an objective of the 1983 exercise  
 N/Obj(84): Not observed during 1984 exercise  
 N/Obj(84): Not an objective of the 1984 exercise  
 N/Obj(85): Not an objective of the 1985 remedial exercise  
 (N): New deficiency observed at the 1985 exercise