



Federal Emergency Management Agency

Region II
26 Federal Plaza, Room 1337
New York, NY 10278-0002

February 19, 1999

Mr. Hubert J. Miller, Regional Administrator
U.S. Nuclear Regulatory Commission
NRC Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Dear Mr. Miller:

Enclosed is a copy of the final exercise report for the June 24, 1998, full-participation Plume Exposure Pathway exercise of the offsite radiological emergency response plans specific to the Indian Point 2 Nuclear Power Station. The State of New York, as well as Westchester, Rockland, Putnam, and Orange Counties of New York, and Bergen County of New Jersey, participated in this exercise. The final exercise report was prepared by the Federal Emergency Management Agency (FEMA) Region II staff. FEMA Region II staff will forward a copy of this report to the State of New York.

There were no Deficiencies and five Areas Requiring Corrective Action (ARCA) identified during the June 24, 1998 exercise. FEMA Region II staff will monitor the status of corrective actions.

Based on the results of the June 24, 1998, exercise it has been determined that the offsite radiological emergency response plans for the State of New York, and the affected local jurisdictions, specific to the Indian Point 2 Nuclear Power Station Site, can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site.

If there are any questions, please contact Vilma Schifano-Milmoe, FEMA Region II Acting Regional Assistance Committee Chairperson, at (212) 225-7215.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lynn G. Canton".

Lynn G. Canton
Regional Director

cc: Vanessa E. Quinn, FEMA Headquarters
Bruce A. Boger, NRC Headquarters

Enclosure



Final Exercise Report

INDIAN POINT 2

NUCLEAR POWER STATION

Licensee:	CONSOLIDATED EDISON
Exercise Date:	June 24, 1998
Report Date:	December 1, 1998

**FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION II**

**26 Federal Plaza
New York, New York 10278**

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I. EXECUTIVE SUMMARY

On June 24, 1998, an exercise was conducted in the plume exposure pathway emergency planning zone (EPZ) around the Indian Point² Nuclear Power Station by the Federal Emergency Management Agency (FEMA), Region II. The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

The most recent exercise at this site was conducted on April 10, 1996. The qualifying emergency preparedness exercise was conducted on March 3, 1982.

FEMA wishes to acknowledge the efforts of the many individuals in New York State, Westchester, Rockland/Bergen, Orange, and Putnam Counties who participated in this exercise.

Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

This report contains the final evaluation of the biennial exercise and the evaluation of the following out-of-sequence activities: Westchester, Rockland, Orange and Putnam County Reception Centers; Westchester, Rockland/Bergen, Orange and Putnam County Congregate Care Centers; Westchester, Rockland, Orange and Putnam County Emergency Worker PMC; Westchester, Rockland, Orange and Putnam County General Population Bus Runs; Westchester, Rockland, Orange and Putnam County School Bus Runs; Westchester, Rockland, Orange and Putnam County EOC Equipment Inventory. School Interviews were held at the Highlands School in Orange County, Garrison, Putnam Valley and Haldane Schools in Putnam County; Nyack, Clarkstown, North Rockland, East Ramapo and Ramapo Schools in Rockland County; and Peekskill, Hendrick Hudson, BOCES, Briarcliff Manor, Croton Harmon, Lakeland, Ossining, Chappaqua and Yorktown Schools in Westchester County.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies and five Areas Requiring Corrective Action (ARCAs) identified as a result of this exercise.

II. INTRODUCTION

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

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

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

- Taking the lead in offsite emergency planning and in the review and evaluation of RERPs and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993); and

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,
- U.S. Department of Transportation,
- U.S. Department of Agriculture,
- U.S. Department of the Interior, and
- U.S. Food and Drug Administration.

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

Formal submission of the RERPs for the Indian Point to FEMA Region II by the State(s) of New York and involved local jurisdictions occurred on October 10, 1991. Formal approval of the RERP was granted by FEMA on May 3, 1996, under 44 CFR 350.

A REP exercise was conducted on June 24, 1998, by FEMA Region II to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Indian Point 2 Nuclear Power Station. The purpose of this exercise report is to present the exercise results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

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

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

- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;
- FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual", September 1991; and
- FEMA-REP-15, "Radiological Emergency Preparedness Exercise Evaluation Methodology," September 1991.

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

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

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the June 24, 1998 exercise to test the offsite emergency response capabilities in the area surrounding the Indian Point 2. This section of the exercise report includes a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities which were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

A. Plume Emergency Planning Zone Description

The Indian Point Nuclear Power Station's (IPNPS) ten mile plume pathway EPZ contains portions of four New York State Counties: Orange County, Putnam County, Rockland County and Westchester County.

The IPNPS is located on the east bank of the Hudson River about 24 miles north of the New York City boundary line at Indian Point, Village of Buchanan in upper Westchester County, New York State. The station is about 0.8 miles southwest of the city of Peekskill, 8.3 miles south of West Point, 1.5 miles northeast of the Lovett Generating Station site, 4.6 miles north of the Bowline Point Generating Station site and 2.3 miles north of Montrose Point.

The Indian Point Site is accessible by several roads in the village of Buchanan. Broadway, a two-lane paved road, borders the site to the east and is the primary access road to the site. The village roads of Bleakley Avenue and First Street enter Broadway across from the eastern site boundary. Additionally, a paved road links the eastern boundary of the site to the plants.

There are no residences within the site boundary. In addition, there are no public highways or railroads that traverse the site area.

The Indian Point Site is surrounded on almost all sides by high ground ranging from 600 to 1,000 feet above sea level. The site is on the east bank of the Hudson River which runs northeast to southwest at this point but turns sharply northwest approximately two miles northeast of the site. The west bank of the Hudson is flanked by the steep, heavily wooded slopes of the Dunderberg and West Mountains to the northwest (elevations 1,086 feet and 1,257 feet respectively) and Buckberg Mountain to the west-southwest (elevation 793 feet). These peaks extend to the west by other names and gradually rise to slightly higher peaks.

The general orientation of this mass of high ground is northeast to southwest. One mile northwest of the site, Dunderberg bulges to the east; north of Dunderberg and the site, high ground reaching 800 feet forms the east bank of the Hudson as the river makes a

sharp turn to the northwest. To the east of the site, peaks are generally lower than those to the north and west. Spitzenberg and Blue Mountains average about 600 feet in height and there is a weak, poorly defined series of ridges which again run mainly in a north-northeast direction. The river south of the site makes another sharp bend to the southeast and then widens as it flows past Croton and Haverstraw.

The IPNPS is approximately 239 acres in size and contains three pressurized water reactors. Unit 1 (615 MWt, 265 MWe, de-fueled), Unit 2 (2,758 MWt, 873 MWe) and Unit 3 (3,025 MWt, 965 MWe). Indian Point Unit 3 is adjacent to and south of Unit 1 and Unit 2 is adjacent to the north of Unit 1.

The two operating plants were designed by Westinghouse Electric Corporation.

The Indian Point pressurized water nuclear power plants each contain a nuclear reactor and closed loops of pressurized water which remove the heat energy from the reactor core and transfers the energy to a secondary water system which generates steam. The steam, in turn, drives a turbine generator set which produces electric power.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Indian Point 2 exercise on June 24, 1998.

State of New York

WABS AM Radio Station
New York State Department of Health
New York State Emergency Management Organization (SEMO)
New York State Public Service Commission (PSC)
New York State Energy Research and Development Authority
New York State Department of Transportation
New York State Department of Labor
New York Military and Naval Affairs
New York Power Authority

Risk Jurisdictions

ORANGE COUNTY

Orange County Department of Health
Orange County Emergency Management
Orange County Department of Public Works
Orange County Department of Social Services
Orange County Office of the Aging
Orange County Emergency Medical Services
Orange County Civil Air Patrol
Orange County Department of Labor
Orange County Sheriff's Office
Orange County ARES/RACES
Orange County Fire Department
Orange/Ulster Board of Co-Operative Educational Services

PUTNAM COUNTY

Putnam County RACES
Putnam County Emergency Management Agency
Putnam County Health Department
Putnam County Sheriff's Office
Putnam County Bureau of Fire & EMS
Putnam County Social Services

Putnam County Patient Services
Putnam County Office for the Aging
Putnam County Highway Department
Carmel School System
Consolidated Edison
Putnam County School System
Putnam County Resources

ROCKLAND COUNTY

Rockland County Department of Health
Clarkstown Police Department
Rockland County Sheriff's Office
Rockland County Office of the Aging
Rockland County Office of People with Disabilities
Rockland County Department of Health
Rockland County Office of Fire & Emergency Services
Rockland Director of Public Affairs
Palisades Interstate Park Police
Rockland County Bergen County Liaison
Helicopter Emergency Lift Program (HELP)
Rockland County Mental Health
Rockland County Emergency Medical Services
Rockland County Social Services
Consolidated Edison
Rockland County Public Transit
Rockland Schools

WESTCHESTER COUNTY

Westchester County Department of Health
Westchester County Police
Peekskill Police
Westchester Department of Public Works
Westchester County Emergency Management Agency
Westchester County Finance Department
Westchester County Fire and Safety
Westchester County Hospitals and Emergency Medical Services
Westchester County Community Mental Health
Westchester County Department of Transportation
Westchester County Department of Social Services
Westchester County Department of Parks, Recreation & Conservation
General Services Department

Department of Schools
United States Coast Guard
Civil Air Patrol
Peekskill Civil Defense
Westchester Department of Public Works
Westchester County Department of Environmental Facilities
Public Information Office
Westchester County Executive
Nuclear Power Generation Utilities Technical Representative
Westchester County Spill Control Team

Support Jurisdictions

BERGEN COUNTY

Rockland County Police Department
Bergen County Office of Emergency Management

Private/Volunteer Organizations

American Red Cross – Bergen Crossroads Chapter
Volunteers from Orange County Health Services
Volunteers from RACES
Salvation Army

C. Exercise Timeline

Table 1, on the following page, presents the time at which key events and activities occurred during the Indian Point Exercise on June 24, 1998. Also included are times notifications were made to the participating jurisdictions/functional entities.

Table 1. Exercise Timeline

INDIAN POINT 2 - June 24, 1998

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken						
		SEOC	JNC	OCEOC	PCEOC	RCEOC	WCEOC	BCEOC
Unusual Event	0830	0836	0835	0836	0840	0836	0840	NA
Alert	0907	0916	0911	0916	0915	0916	0916	0925
Site Area Emergency	1042	1053	1046	1053	1053	1053	1053	1225
General Emergency	1148	1148	1149	1202	1202	1202	1202	1154
Simulated Rad. Release Started	1245	1255	1252	1305	1305	1259	1315	1313
Simulated Rad. Release Terminated	1545	1554	1545	1556	1555	1555	1559	NA
Facility Declared Operational		1000	0945	1023	1000	0957	0935	1023
Exercise Terminated		1554	1613	1616	1616	1616	1616	1540
Early Precautionary Actions:		NA	NA	NA	NA	NA	NA	NA
1st Protective Action Decision: Shelter: Evacuate:		Advisory 0950 No PADs No PADs	Advisory 0950 No PADs No PADs	Advisory 0950 No PADs No PADs	Advisory 0950 No PADs No PADs	Advisory 0950 No PADs No PADs	Advisory 0950 No PADs No PADs	NA
1st Siren Activation		1002	1002	1002	1002	1002	1002	1002

Table 1. Exercise Timeline

INDIAN POINT 2 - June 24, 1998

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken						
		SEOC	JNC	OCEOC	PCEOC	RCEOC	WCEOC	BCEOC
1st EAS Message		1005	1005	1005	1005	1005	1005	1005
2nd Protective Action Decision: Shelter: Evacuate:		1119	1119 W5, 47, 49 O39, 40 R29, 38-40 W1-4, 6, 48	1119 NA O39, 40	1119 NA Declare State of Emergency (@1118)	1119 NA R29, 38-40	1119 NA W1-4, 6, 48	NA
2nd Siren Activation		1131	1131	1131	1131	1131	1131	NA
2nd EAS Message		1134	1134	1134	1134	1134	1134	NA
3rd Protective Action Decision: Shelter: Evacuate:		1216	1216 O24, 26, 28 P16-20, 23 R32-37, 41 W8, 9, 22, 51 R30, 31	1216 O24, 26, 28	1216 P16-20, 23	1216 R32-37, 41 R30, 31	1216 W8, 9, 22, 51	NA
3rd Siren Activation		1228	1228	1228	1228	1228	1228	NA
3rd EAS Message			1231	1231	1231	1231	1231	NA

Table 1. Exercise Timeline

INDIAN POINT 2 - June 24, 1998

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken						
		SEOC	JNC	OCEOC	PCEOC	RCEOC	WCEOC	BCEOC
		1231						
4 th Protective Action Decision Shelter: Evacuate:		1345	1345 W21, 50 O26 P16-18 R32-37, 41	1345 O26	1345 P16-18	1345 R32-37, 41	1345 W21, 50	NA
4 th Siren Activation		1357	1357	1357	1357	1357	1357	NA
4 th EAS Message		1400	1400	1400	1400	1400	1400	NA
KI Administration Decision:		NA	NA	NA	NA	NA	NA	NA

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

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities which participated in the June 24, 1998, exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Indian Point 2 Nuclear Power Station.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in exercise objectives contained in FEMA-REP-14, REP Exercise Manual, September 1991. Detailed information on the exercise objectives and the extent-of-play agreement used in this exercise are found in Appendix 3 of this report.

A. Summary Results of Exercise Evaluation - Table 2

The matrix presented in Table 2, on the following page(s), presents the status of all exercise objectives from FEMA-REP-14 which were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise objectives are listed by number and the demonstration status of those objectives is indicated by the use of the following letters:

- M** - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)
- D** - Deficiency assessed
- A** - ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)
- N** - Not Demonstrated (Reason explained in Subsection B)

**Table 2. Summary Results of Plume Exercise Evaluation
June 24, 1998 – Indian Point 2 Nuclear Power Station**

JURISDICTION/FUNCTIONAL ENTITY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
NEW YORK STATE																																
Emergency Operations Center	M	M	M	M							M	M																				
Dose Assessment					M		M		M						M																	
Emergency Operations Facility	M	M		M																												
Joint News Center	M	M		M							M	M	M	M																		
EAS (WABC)				M							M																					
RISK COUNTIES																																
ORANGE COUNTY																																
Emergency Operations Center	M	M	M	M							M	M				M	M	M											M			
Dose Assessment/Field Team Coordination						M	M	M		M					M																	
Field Monitoring Teams			M		M	M	M		M																					M		
Traffic Control Points					M	M													M													
Reception Center & Mass Care Center					M	M																										
Emergency Worker Decontamination Station			M		M	M																										
General Population Bus Run					M	M												M														
School Bus Run					M																											
School Interviews																																
PUTNAM COUNTY																																
Emergency Operations Center	M	M	M	M							M	M					M	M	M											M		
Dose Assessment/Field Team Coordination						M	M	M		M						M																
Field Monitoring Teams			M		M	M	M		M																						M	

**Table 2. Summary Results of Plume Exercise Evaluation
June 24, 1998 – Indian Point 2 Nuclear Power Station**

[illegible]

**Table 2. Summary Results of Plume Exercise Evaluation
June 24, 1998 – Indian Point 2 Nuclear Power Station**

[illegible]

LEGEND:

M = Met (No Deficiency or ARCAs assessed)

Blank = Not scheduled for demonstration

A =ARCA(s) assessed and/or unresolved prior ARCA(s)

DDeficiency(ies) assessed and no unresolved prior ARCAs) N =Not Demonstrated

N =Not Demonstrated

B. Status of Jurisdictions Evaluated

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

- **Met** - Listing of the demonstrated exercise objectives under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.
- **Deficiency** - Listing of the demonstrated exercise objectives under which one or more Deficiencies was assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
- **Area Requiring Corrective Actions** - Listing of the demonstrated exercise objectives under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.
- **Not Demonstrated** - Listing of the exercise objectives which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.
- **Prior ARCAs - Resolved** - Descriptions of ARCAs assessed during previous exercises which were resolved in this exercise and the corrective actions demonstrated.
- **Prior ARCAs - Unresolved** - Descriptions of ARCAs assessed during prior exercises which were not resolved in this exercise. Included is the reason the ARCA remains unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

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

- **A Deficiency** is defined in FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in

the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

- **An ARCA is defined in FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."**

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

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

- **Plant Site Identifier - A two-digit number corresponding to the Utility Billable Plant Site Codes.**
- **Exercise Year - The last two digits of the year the exercise was conducted.**
- **Objective Number - A two-digit number corresponding to the objective numbers in FEMA-REP-14.**
- **Issue Classification Identifier - (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.**
- **Exercise Issue Identification Number - A separate two (or three) digit indexing number assigned to each issue identified in the exercise.**

1. NEW YORK STATE

1.1 Emergency Operations Center

- a. MET: Objectives 1, 2, 3, 4, 10, and 11.**
- b. DEFICIENCY: NONE.**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. NOT DEMONSTRATED: NONE.**
- e. PRIOR ARCAs - RESOLVED: NONE.**
- f. PRIOR ARCAs - UNRESOLVED: NONE.**

1.2 Dose Assessment

- a. MET: Objectives 5, 7, 9 and 14**
- b. DEFICIENCY: NONE.**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. NOT DEMONSTRATED: NONE.**
- e. PRIOR ARCAs - RESOLVED: NONE.**
- f. PRIOR ARCAs - UNRESOLVED: NONE.**

1.3 Emergency Operations Facility

- a. MET: Objectives 1, 2, and 4**
- b. DEFICIENCY: NONE.**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. NOT DEMONSTRATED: NONE.**
- e. PRIOR ARCAs - RESOLVED: NONE.**

f. **PRIOR ARCA_s - UNRESOLVED: NONE.**

1.4 Joint News Center

a. **MET: Objectives 1, 2, 4, 10, 11, 12, 13, and 30.**

b. **DEFICIENCY: NONE.**

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

d. **NOT DEMONSTRATED: NONE.**

e. **PRIOR ARCA_s - RESOLVED: NONE.**

f. **PRIOR ARCA_s - UNRESOLVED: NONE.**

1.5 Emergency Alert System - Station WABC

a. **MET: Objectives 4 and 10**

b. **DEFICIENCY: NONE.**

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

d. **NOT DEMONSTRATED: NONE.**

e. **PRIOR ARCA_s - RESOLVED: NONE.**

f. **PRIOR ARCA_s - UNRESOLVED: NONE.**

2. RISK JURISDICTIONS - COUNTIES

2.1 ORANGE COUNTY

2.1.1 Orange County - Emergency Operations Center

a. **MET: Objectives 1, 2, 3, 4, 10, 11, 15, 16, 17 and 30**

b. **DEFICIENCY: NONE.**

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

- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.2 Orange County - Dose Assessment/Field Team Coordination

- a. MET: Objectives 5, 6, 7, 9, and 14
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE.

2.1.3 Orange County - Field Monitoring Teams

- a. MET: Objectives 2, 4, 5, 6, 8, and 30
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE.

2.1.4 Orange County - Traffic Control Points

- a. MET: Objectives 4, 5, and 17
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.

- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

2.1.5 Orange County - Reception Center and Congregate Care Center (Out-of-Sequence at Warwick High School and Warwick Middle School on May 7, 1998)

- a. MET: Objectives 4, 5, 18 & 19
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

2.1.6 BOCES - Emergency Worker Decontamination Station (Out-of-Sequence at BOCES on May 19, 1998)

- a. MET: Objectives 2, 4, 5, and 22
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

2.1.7 Orange County -General Population Bus Runs (Out-of-Sequence at West Point Tours on May 7, 1998)

- a. MET: Objectives 4, 5, and 15

- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

2.1.8 Orange County - School Bus Run (Out-of-Sequence at West Point Tours on May 7, 1998)

- a. MET: Objectives 4, and 16
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

2.1.9 Orange County - School Interviews: (Out-of-Sequence at James O'Neill High School, Highland School District on June 2, 1998)

- a. MET: EV-2 Questionnaire
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

2.2 PUTNAM COUNTY

2.2.1 Putnam County - Emergency Operations Center

- a. MET: Objectives 1, 2, 3, 4, 10, 11, 15, 16, 17, and 30
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

2.2.2 Putnam County - Dose Assessment/Field Team Coordination

- a. MET: Objectives 5, 6, 7, 9, and 14
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

2.2.3 Putnam County - Field Monitoring Teams

- a. MET: Objectives 2, 4, 5, 6, 8, and 30
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.

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

2.2.4 Putnam County Traffic Control Points

- a. **MET: Objectives 4, 5, and 17**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED:**

Issue No.: 75-96-05-A-01

Description: The Putnam Valley Police Officer deployed to the TCP (intersection of Oscawana Lake Road and Church Road) stated that he would take one tablet of KI upon arriving at the TCP. He was unaware of the permission required from his supervisor before taking KI, even though he was supplied proper instructions on a card (NUREG-0654 J.10.e).

Recommendation: Putnam Valley Police Officers should be given additional training in KI procedures and on the chain of command for authorization of ingesting KI.

Corrective Actions Demonstrated: The Putnam Valley Police Department no longer exists. This ARCA has been subsequently removed.

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

2.2.5 Putnam County - Reception Center and Congregate Care Center (Out-of-Sequence at Carmel High School on May 28, 1998 and George Fisher Middle School on April 9, 1998)

- a. **MET: Objectives 4, 5, 18 & 19**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**

- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

**2.2.6 Putnam County - Emergency Worker Decontamination Station
(Out-of-Sequence at Carmel Fire Department on May 19, 1998)**

- a. MET: Objectives 2, 4, and 5
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION:

Issue No.: 32-98-22-A-01

Description: Monitors were unfamiliar with the minimum reporting levels for contamination on vehicles. Various reports were given by monitors. (NUREG-0654, K.5.a).

Recommendation: Provide additional training on contamination levels.

Proposed Corrective Actions: To be corrected during the next biennial exercise.

- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCA_s - RESOLVED: NONE.
- f. PRIOR ARCA_s - UNRESOLVED: NONE.

**2.2.7 Putnam County - General Population Bus Runs (Out-of-Sequence at
Mahopac on May 6, 1998 and Haldane on May 5, 1998)**

- a. MET: Objectives 4, 5, and 15
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.

- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE.

2.2.8 Putnam County - School Bus Run (Out-of-Sequence at Garrison on May 7, 1998 and Putnam Valley on May 4, 1998)

- a. MET: Objectives 4 and 16
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE.

2.2.9 Putnam County - School Interviews: (Out-of-Sequence at Garrison Union Free School, Garrison School District on April 29, 1998; Noah's Ark Pre-School, Putnam Valley Central School District on April 29, 1998; Bonous Montessori School, Haldane Central School District on April 29, 1998)

- a. MET: EV-2 Questionnaire
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE.

2.2.10 Putnam County - Medical Drill, (Out-of-Sequence at Putnam Hospital Center on May 28, 1998)

- a. MET: Objectives 20 and 21

- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCA_s - RESOLVED: NONE.**
- f. **PRIOR ARCA_s - UNRESOLVED: NONE.**

2.3 ROCKLAND COUNTY

2.3.1 Rockland County - Emergency Operations Center

- a. **MET: Objectives 1, 2, 4, 10, 11, 15, 16, 17, and 30**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCA_s - RESOLVED:**

Issue No.: 75-96-03-A-02

Description: Inaccurate monitoring location descriptions. Three of the four sites assigned for monitoring could not be identified by the monitoring team from the descriptions in the Standard Operating Procedure provided to them. (NUREG-0654, A.1.d.,2.a.,b)

Recommendation: All procedures in the RERP which reference monitoring locations should be checked to ensure that the descriptions are accurate. Each monitoring location should be visited and the description verified.

Corrective Actions Demonstrated: The monitoring location descriptions were revised and are now accurate. This issue has been resolved.

Issue No.: 75-96-05-A-03

Description: Area personnel dosimeter monitors at the Rockland EOC were not read in accordance with the plan. There were five stations containing two direct

reading dosimeters and a TLD located at the perimeters of the facility. As the EOC is within the 10-mile EPZ, it may be subjected to radiation exposure from the plume. Therefore, the plan requires these area personnel dosimeter monitors to be read on a prescribed schedule.

Outside air ventilation was not closed off as required for a facility within the ten-mile radius of the facility. Radionuclides from the plume could enter the facility. Therefore, the plan requires air handling equipment that isolates the facility from possible contamination due to radionuclides in the outside air. (NUREG 0654, K.3.b, N.1.a).

Recommendation: Additional training is required to insure that area personnel dosimeter monitors are read per the prescribed schedules and that building air ventilation systems are isolated from sources of outside air when there is potential for exposure to radionuclides from the plume.

Corrective Actions Demonstrated: Radiological monitoring personnel were assigned to provide continual monitoring of the facility and area dosimeters were read throughout the exercise. This ARCA has been cleared.

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

g. **PLANNING ISSUES:**

Description: The EOC Director did not adequately advise schools to evacuate during the emergency phase. He waited until the SAE ECL to begin evacuation of certain schools (Rockland County Plan, Procedure SCH-1).

Recommendation: The Rockland County Plan should be revised to allow for evacuation of schools prior to the declaration of the SAE ECL.

2.3.2 Rockland County - Dose Assessment/Field Team Coordination

a. **MET: Objectives 5, 6, 7, 9, and 14**

b. **DEFICIENCY: NONE.**

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

d. **NOT DEMONSTRATED: NONE.**

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

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

2.3.3 Rockland County - Field Monitoring Teams

- a. **MET: Objectives 2, 4, 5, 6, 8, and 30**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED:**

Issue No.: 75-96-06-A-04

Description: Team member was unfamiliar with instrument operability checks. The team member performing instrument operability checks prior to departure from the EOC was not aware of the existence of a check source on one of the instruments. Instead, he assumed that a separate check source which he had available was to be held in contact with the instrument at that point. His action could not be guaranteed to provide an adequate test of the instrument operation. (NUREG-0654, H.10).

Recommendation: Team members should be given additional hands-on training on each of the instruments that they are expected to check and use. This should be followed with a demonstration by each of the team members that they can perform all steps required to obtain accurate field monitoring data.

Corrective Actions Demonstrated: Field monitoring team members demonstrated complete knowledge of the use of the instruments and the ability to perform operational checks using a source. The field members also demonstrated the ability to obtain accurate field monitoring data.

Issue No.: 75-96-08-A-05

Description: Team unfamiliar with air sampling and counting instrumentation. Prior to counting the air sample particulate and iodine cartridge two controls on the instrument to be used were accidentally changed by one of the team members. The team members were not familiar with the proper setting of these controls and did not understand the operation of the instrument well enough to correct the problem and get a valid reading on the sample. In addition the particulate and

iodine samples were counted as a unit rather than separately as required for accurate estimation of airborne activity. (NUREG 0654, I.9).

Recommendation: Team members should be given additional hands-on training on each of the instruments that they are expected to check and use. This should be followed with a demonstration by each of the team members that they can perform all steps required to obtain accurate field monitoring data.

Corrective Actions Demonstrated: Team members demonstrated familiarization with the air sampling instruments and the ability to take air samples and obtain field monitoring data.

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

2.3.4 Rockland County - Traffic Control Points

- a. **MET: Objectives 4, 5, and 17**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED: NONE.**
- f. **PRIOR ARCAs - UNRESOLVED: NONE.**

2.3.5 Rockland County - Reception Center (Out-of-Sequence at Suffern South High School on June 25, 1998)

- a. **MET: Objectives 4, 5, and 18**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED: NONE.**
- f. **PRIOR ARCAs - UNRESOLVED: NONE.**

2.3.6 Rockland County - Congregate Care Center (Out-of-Sequence at Ramapo College on June 15, 1998)

- a. MET: NONE**
- b. DEFICIENCY: NONE.**
- c. AREAS REQUIRING CORRECTIVE ACTION: 4, 5 and 19**

Issue No.: 32-98-04-A-02

Description: Rockland County did not demonstrate the ability to provide congregate care for evacuees following an incident at the Indian Point Power Plant. (NUREG 0654, F).

Recommendation: Rockland County will demonstrate all functions associated with congregate care during the week of February 8, 1999.

Issue No.: 32-98-05-A-03

Description: Rockland County did not demonstrate the ability to provide congregate care for evacuees following an incident at the Indian Point Power Plant. (NUREG 0654, K.3).

Recommendation: Rockland County will demonstrate all functions associated with congregate care during the week of February 8, 1999.

Issue No.: 32-98-19-A-04

Description: Rockland County did not demonstrate the ability to provide congregate care for evacuees following an incident at the Indian Point Power Plant. (NUREG 0654, J.10, 12).

Recommendation: Rockland County will demonstrate all functions associated with congregate care during the week of February 8, 1999.

- d. NOT DEMONSTRATED: 4, 5 and 19**
- e. PRIOR ARCA_s - RESOLVED: NONE.**
- f. PRIOR ARCA_s - UNRESOLVED: NONE.**

**2.3.7 Rockland County - Emergency Worker Decontamination Station
(Out-of-Sequence at County Sewer District on April 30, 1998)**

- a. MET: Objectives 2, 4, 5, and 22
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE

**2.3.8 Rockland County - General Population Bus Runs (Out-of-Sequence at
Peter Brega Transportation on June 2, 1998 and Starr Transportation
on May 21, 1998)**

- a. MET: Objectives 4 and 15
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE.

**2.3.9 Rockland County - School Bus Run (Out-of-Sequence Haverstraw
Transit on June 2, 1998 and Chestnut Ridge on May 21, 1998)**

- a. MET: Objectives 4 and 16
- b. DEFICIENCY: NONE.

- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE.

2.3.10 Rockland County - School Interviews: (Out-of-Sequence at St. Paul's Elementary School, Nyack School District on May 14, 1998; Clarkstown North High School, Clarkstown School District on May 15, 1998; James A. Farley Middle School, North Rockland School District on May 15, 1998; Rockland County Work Site Daycare, East Ramapo School District on May 14, 1998; and Suffern YMCA, Ramapo School District on May 15, 1998)

- a. MET: EV-2 Questionnaire
- b. DEFICIENCY: NONE.
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.
- d. NOT DEMONSTRATED: NONE.
- e. PRIOR ARCAs - RESOLVED: NONE.
- f. PRIOR ARCAs - UNRESOLVED: NONE.

2.4 WESTCHESTER COUNTY

2.4.1 Westchester County - Emergency Operations Center

- a. MET: Objectives 1, 2, 3, 4, 10, 11, 15, 16, 17, 30, and 31
- b. DEFICIENCY: NONE.

- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED: NONE.**
- f. **PRIOR ARCAs - UNRESOLVED: NONE.**

2.4.2 Westchester County - Dose Assessment/Field Team Coordination

- a. **MET: Objectives 5, 6, 7, 9, and 14**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED: NONE.**
- f. **PRIOR ARCAs - UNRESOLVED: NONE.**

2.4.3 Westchester County - Field Monitoring Teams

- a. **MET: Objectives 2, 4, 5, 6, 8, and 30**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED: NONE.**
- f. **PRIOR ARCAs - UNRESOLVED: NONE.**

2.4.4 Westchester County - Traffic Control Points

- a. **MET: Objectives 4, 5, and 17**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED: NONE.**
- f. **PRIOR ARCAs - UNRESOLVED: NONE.**

**2.4.5 Westchester County - Reception Center and Congregate Care Center
(Out-of-Sequence at Eastchester Middle School and Eastchester High
School on May 26, 1998)**

- a. **MET: Objectives 4, 5, 18 and 19**
- b. **DEFICIENCY: NONE.**
- c. **AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. **NOT DEMONSTRATED: NONE.**
- e. **PRIOR ARCAs - RESOLVED: NONE.**
- f. **PRIOR ARCAs - UNRESOLVED: NONE.**

**2.4.6 Westchester County -Emergency Worker Decontamination Station
(Out-of-Sequence at Fire Training Center on June 2, 1998)**

- a. **MET: Objectives 2, 4, and 22**
- b. **DEFICIENCY: NONE.**

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

d. **NOT DEMONSTRATED: NONE.**

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

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

2.4.7 Westchester County - General Population Bus Runs (Out-of-Sequence at Royal Bus Company on June 3, 1998 and Liberty Lines on June 11, 1998)

a. **MET: Objectives 4, 5, and 15**

b. **DEFICIENCY: NONE.**

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

d. **NOT DEMONSTRATED: NONE.**

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

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

2.4.8 Westchester County - School Bus Run (Out-of-Sequence at Hendrick Hudson C.S.D. on May 4, 1998 and at Liberty Lines on June 4, 1998)

a. **MET: Objectives 4 and 16**

b. **DEFICIENCY: NONE.**

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

d. **NOT DEMONSTRATED: NONE.**

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

f. PRIOR ARCAs - UNRESOLVED: NONE.

2.4.9 Westchester County - School Interviews: Out-of-Sequence at Peekskill High School, Peekskill City School District on May 4, 1998; Blue Mountain Middle School, Hendrick Hudson City School District on May 4, 1998; BOCES School District on May 20, 1998; Briarcliff High School, Briarcliff Manor Public School District on May 18, 1998; Karrie E. Tompkins Elementary School, Croton Harmon School District on May 4, 1998; T. Jefferson Elementary School, Lakeland School District on May 5, 1998; Claremont Elementary School, Ossining School District on May 20, 1998; West Orchard Elementary School, Chappaqua Central School District on May 5, 1998; and St. Patrick's Elementary School, Yorktown School District on May 5, 1998.

a. MET: EV-2 Questionnaire

b. DEFICIENCY: NONE.

c. AREAS REQUIRING CORRECTIVE ACTION:

Issue No.: 32-98-05-A-05

Description: The Ossining Bus driver was not familiar with the reporting requirements for contamination. He responded 100R not 1, 3, and 5R. (NUREG-0654).

Recommendation: Provide additional training on emergency worker exposure control.

Corrective Actions Demonstrated: This ARCA was cleared by providing additional training on emergency worker exposure control and during a subsequent interview of another bus driver on July 24, 1998.

d. NOT DEMONSTRATED: NONE.

e. PRIOR ARCAs - RESOLVED: NONE.

f. PRIOR ARCAs - UNRESOLVED: NONE.

2.4.10 Westchester County - Medical Drill, (Out-of-Sequence at Westchester County Medical Center on May 12, 1998)

- a. MET: Objective 20 and 21**
- b. DEFICIENCY: NONE.**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. NOT DEMONSTRATED: NONE.**
- e. PRIOR ARCAs - RESOLVED: NONE.**
- f. PRIOR ARCAs - UNRESOLVED: NONE.**

2.5 BERGEN COUNTY

2.5.1 Bergen County - Emergency Operations Center

- a. MET: Objectives 1, 2, 3, 4, and 30**
- b. DEFICIENCY: NONE.**
- c. AREAS REQUIRING CORRECTIVE ACTION: NONE.**
- d. NOT DEMONSTRATED: NONE.**
- e. PRIOR ARCAs - RESOLVED: NONE.**
- f. PRIOR ARCAs - UNRESOLVED: NONE**

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

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

ANL	Argonne National Laboratory
ARCA	Area Requiring Corrective Action
BCEOC	Bergen County Emergency Operations Center
CFR	Code of Federal Regulations
CST	Condensate Storage Tank
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EAL	Emergency Action Level
ED	Emergency Director
EPA	U.S. Environmental Protection Agency
EPZ	Emergency Planning Zone
FDA	U.S. Food and Drug Administration
FEMA	Federal Emergency Management Agency
GE	General Emergency
INEL	Idaho National Engineering Laboratory
IPNPS	Indian Point Nuclear Power Station
JNC	Joint News Center
NOUE	Notification of Unusual Event
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, <i>"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980</i>
OCEOC	Orange County Emergency Operations Center
ORO	Offsite Response Organization
OSC	Operations Support Center

PAB	Primary Auxiliary Building
PCEOC	Putnam County Emergency Operations Center
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RCEOC	Rockland County Emergency Operations Center
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RSC	Reactor Coolant System
RVLIS	Reactor Vessel Level Indicator System
SAE	Site Area Emergency
SI	Safety Injector
SEOC	State Emergency Operations Center
USDA	U.S. Department of Agriculture
WCEOC	Westchester County Emergency Operations Center

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Indian Point 2 exercise on June 24, 1998. Evaluator Team Leaders are indicated by the letters "(TL)" after their names. The organization which each evaluator represents is indicated by the following abbreviations:

FEMA	- Federal Emergency Management Agency
DOT	- Department of Transportation
DOE	- Department of Energy
USDA	- US Department of Agriculture
NRC	- Nuclear Regulatory Commission
FDA	- Food & Drug Administration
EPA	- Environmental Protection Agency
ANL	- Argonne National Laboratory
BNL	- Brookhaven National Laboratory
KLT	- K.L. Travis & Associates, Inc.

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
New York State:		
Emergency Operations Center	A. Davis (TL)	FEMA
Emergency Operations Center	D. Blunt	ANL
Emergency Operations Center	D. Poyer	ANL
 Emergency Operations Facility	 B. Bores	 NRC
 Joint News Center	 C. McCoy	 ANL
Joint News Center	M. Meshenberg	ANL
Joint News Center	B. Gasper	ANL
 WABC	 B. Gasper	 ANL
 Orange County, New York:		
Emergency Operations Center	D. Tang (TL)	FEMA
Emergency Operations Center	A. Lookabaugh	ANL
Emergency Operations Center	K. Flynn	ANL
Field Monitoring Team	H. Harrison	ANL
Field Monitoring Team	J. Staroba	ANL
Traffic Control Point	B. Neisius	ANL

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
Orange County - Out-of-Sequence:		
Reception Centers	S. O'Neill	FEMA
Congregate Care Centers	D. Tang	FEMA
Emergency Worker PMC	S. O'Neill	FEMA
General Population Bus Runs	S. O'Neill	FEMA
School Bus Runs	S. O'Neill	FEMA
EOC Equipment Inventory	S. O'Neill	FEMA
School Interviews - Highland Falls M.S. Highland S.D.	S. O'Neill	FEMA
Putnam County, New York:		
Emergency Operations Center	R. Acerno (TL)	FEMA
Emergency Operations Center	T. Carroll	ANL
Emergency Operations Center	F. Wilson	ANL
Field Monitoring Team	R. Bernacki	FDA
Field Monitoring Team	C. Hunckler	ANL
Traffic Control Point	A. Teotia	ANL
Putnam County - Out-of-Sequence:		
Reception Centers	T. Carroll	ANL
Congregate Care Centers	S. O'Neill	FEMA
Emergency Worker PMC	S. O'Neill	FEMA
General Population Bus Runs - Mahopac	K. McCarroll	FEMA
General Population Bus Runs - Haldane	K. McCarroll	FEMA
School Bus Runs - Garrison/Ryder	B. Mason	FEMA
School Bus Runs - Putnam Valley	B. Mason	FEMA
EOC Equipment Inventory	S. O'Neill	FEMA
School Interviews - Garrison Union Free S.D.	S. O'Neill	FEMA
School Interviews - Noah's Ark Pre-School, Putnam Valley Central S.D.	S. O'Neill	FEMA
School Interviews - Bonous Montisorri School, Haldane Central S.D.	S. O'Neill	FEMA
Medical Drill - Putnam Hospital Center	T. Carroll	ANL
Rockland County, New York:		
Emergency Operations Center	S. McIntosh(TL)	FEMA
Emergency Operations Center	L. Lewis	USDA
Emergency Operations Center	R. Converse	ANL
Emergency Operations Center	J. Hardin	KLT
Field Monitoring Team	A. Kuehner	DOE

EVALUATION SITE**EVALUATOR****ORGANIZATION**

Field Monitoring Team
Traffic Control Point

L. Poch
C. Bebrich

ANL
ANL

Rockland County - Out-of-Sequence:

Reception Center
Congregate Care Center
Emergency Worker PMC
General Population Bus Runs - East Ramapo
General Population Bus Runs - Peter Brega
School Bus Runs - East Ramapo
School Bus Runs - Peter Brega
EOC Equipment Inventory
School Interviews - St. Paul's E.S.,
Nyack S.D.
School Interviews - Clarkstown North H.S.,
Clarkstown S.D.
School Interviews - James A. Farley Middle School
North Rockland S.D.
School Interviews - Rockland Work Site Day Care
East Ramapo S.D.
School Interviews - Suffern YMCA
Ramapo S.D.

F. Wilson
S. O'Neill
S. O'Neill
S. McIntosh
S. McIntosh
S. O'Neill
S. O'Neill
S. O'Neill
S. O'Neill
S. O'Neill

ANL
FEMA
FEMA
FEMA
FEMA
FEMA
FEMA
FEMA
FEMA
FEMA

S. O'Neill
S. O'Neill
S. O'Neill
S. O'Neill

FEMA
FEMA
FEMA
FEMA

Westchester County, New York:

Emergency Operations Center
Emergency Operations Center
Emergency Operations Center
Field Monitoring Team
Field Monitoring Team
Traffic Control Point

S. O'Neill (TL)
S. Nelson
C. Herzenberg
B. Murray
J. Flynn
T. Green

FEMA
ANL
ANL
BNL
ANL
ANL

Westchester County - Out-of-Sequence:

Reception Centers
Congregate Care Centers
Emergency Worker PMC
General Population Bus Runs - Royal Bus Co.
General Population Bus Runs - Liberty Lines
School Bus Runs - Hendrick Hudson C.S.D.
School Bus Runs - Liberty Lines
EOC Equipment Inventory

S. O'Neill
D. Tang
S. Nelson
R. Acerno
R. Acerno
S. O'Neill
S. O'Neill
R. Acerno

FEMA
FEMA
ANL
FEMA
FEMA
FEMA
FEMA
FEMA

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
School Interviews – Peekskill High School, Peekskill City S.D.	S. O'Neill	FEMA
School Interviews – Blue Mountain. M.S., Hendrick Hudson C.S.D.	S. O'Neill	FEMA
School Interviews - BOCES S.D.	S. O'Neill	FEMA
School Interviews – Briarcliff High School, Briarcliff Manor Public S.D.	S. O'Neill	FEMA
School Interviews – Karrie E. Tompkins Elementary School, Croton Harmon S.D.	O'Neill	FEMA
School Interviews – T. Jefferson Elementary School, Lakeland S.D.	S. O'Neill	FEMA
School Interviews – Claremont Elementary School, Ossining S.D.	S. O'Neill	FEMA
School Interviews – West Orchard E.S., Chappaqua S.D.	S. O'Neill	FEMA
School Interviews – St. Patrick's E.S., Yorktown S.D.	S. O'Neill	FEMA
Medical Drill - Westchester Co. Medical Center	C. Herzenberg	ANL
 Bergen County, New York: Emergency Operations Center	 D. Petta (TL)	 DOT

APPENDIX 3

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise objectives which were scheduled for demonstration in the Indian Point 2 exercise on June 24, 1998 and the extent-of-play agreement approved by FEMA Region II on June 22, 1998.

The exercise objectives, contained in FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980.

Because the exercise objectives are intended for use at all nuclear power plant sites, and because of variations among offsite plans and procedures, an extent-of-play agreement is prepared by the State and approved by FEMA to provide evaluators with guidance on expected actual demonstration of the objectives.

A. Exercise Objectives

Listed below are the specific radiological emergency preparedness objectives scheduled for demonstration during this exercise.

OBJECTIVE 1: MOBILIZATION OF EMERGENCY PERSONNEL

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

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

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

OBJECTIVE 3: DIRECTION AND CONTROL

Demonstrate the capability to direct and control emergency operations.

OBJECTIVE 4: COMMUNICATIONS

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

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

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

OBJECTIVE 6: FIELD RADIOLOGICAL MONITORING - AMBIENT RADIATION MONITORING

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

OBJECTIVE 7: PLUME DOSE PROJECTION

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

OBJECTIVE 8: FIELD RADIOLOGICAL MONITORING - AIRBORNE RADIOIODINE AND PARTICULATE ACTIVITY MONITORING

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

OBJECTIVE 9: PLUME PROTECTIVE ACTION DECISION MAKING

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

OBJECTIVE 10: ALERT AND NOTIFICATION

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

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

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

OBJECTIVE 12: EMERGENCY INFORMATION - MEDIA

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

OBJECTIVE 13: EMERGENCY INFORMATION - RUMOR CONTROL

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

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

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

OBJECTIVE 15: IMPLEMENTATION OF PROTECTIVE ACTIONS - SPECIAL POPULATIONS

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

OBJECTIVE 16: IMPLEMENTATION OF PROTECTIVE ACTIONS - SCHOOLS

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

OBJECTIVE 17: TRAFFIC AND ACCESS CONTROL

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

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

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

OBJECTIVE 19: CONGREGATE CARE

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

OBJECTIVE 20: MEDICAL SERVICES - TRANSPORTATION

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

OBJECTIVE 21: MEDICAL SERVICES - FACILITIES

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

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

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

OBJECTIVE 30: CONTINUOUS, 24-HOUR STAFFING

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

**OBJECTIVE 31: OFFSITE SUPPORT FOR THE EVACUATION OF ONSITE
PERSONNEL.**

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

B. Extent-of-Play Agreement

The extent-of-play agreement on the following pages was submitted by the State of New York, and was approved by FEMA Region II on June 22, 1998, in preparation for the Indian Point 2 exercise on June 24, 1998. The extent-of-play agreement includes any significant modification or change in the level of demonstration of each exercise objective listed in Subsection A of this appendix.

EXTENT OF PLAY

NOTE:Real life emergencies take priority over exercise play.

1. WARNING POINTS

During this exercise, the following five (5) Warning Points will be notified.

- New York State
- Westchester County
- Rockland County
- Orange County
- Putnam County

Federal observations will include:

- Telephone calls from the utility via the RECS lines including the notification times and call verification procedures.
- Notification of the designated agency representatives in accordance with the plan/procedures including the time required to notify all individuals on the call-out list.
- Coordination with the EOC.

It should be understood that the call lists may change on a weekly basis. The latest quarterly revision call lists will be provided to FEMA one (1) week before the exercise or at the Federal/State evaluators briefing session the day before the exercise.

Federal evaluators recording times of various events will synchronize their watches with an official EOC time.

There will be no free play messages introduced at Warning Points.

Shift Change:

There will be no demonstration of a shift change at this location.

2. EOCs

All activities associated with the activation and operation of EOC are to be performed as they would be in an actual emergency.

Federal observations will include:

- Notification of staff;
- Timeliness of activation,
- Bergen County's coordination with Rockland EOC – Activation and operation of Bergen EOC in accordance with host Plan.
- Decision-making
 - coordination with other counties and state;
 - notification of public (sirens and EAS messages);
 - protective action recommendations including consultation with appropriate staff.
- Accident assessment;
- Communication with appropriate locations;
- Managing an orderly evacuation, if required;
- Free play messages handling including:
 - evacuation of non-institutionalized mobility impaired individuals,
 - notification of hearing impaired,
 - siren failure and back-up route alerting,
 - impediment(s) to evacuation.

Shift Change:

A shift change will be demonstrated for key positions only.

Exceptions:

- State liaisons will be pre-positioned and will arrive at respective EOCs no sooner than 30 minutes after Alert declaration is received over RECS line. Utility

technical liaisons will be pre-positioned and will arrive at respective EOCs no sooner than 30 minutes after being requested by the respective counties.

- In the event that a school is closed (not-in-session) on June 24, 1998, the Schools Coordinator at the EOC will be required to provide a school contact telephone number for that school which includes off-hours notification numbers. No actual contact will be made with schools that are not-in-session.

3. EOF

All activities associated with the activation and operation of EOF are to be performed as they would be in an actual emergency.

Federal observations will include:

- Timeliness of activation;
- Interpretation and communication of technical data to the State and County EOCs;
- EOF operation management layout, equipment and displays.

Shift Change:

There will be no demonstration of shift change at this location.

Exceptions:

State liaisons will be pre-positioned and will arrive at EOF no sooner than 30 minutes after Alert declaration is received over RECS line.

County liaisons will arrive at EOF no sooner than 15 minutes after Alert declaration is received over RECS line.

4. PUBLIC NOTIFICATION

During the exercise there will be no actual siren sounding and no broadcasting of EAS messages.

However, Federal evaluators will expect to see actual demonstration of all the actions (steps) leading to siren sounding and broadcasting the EAS messages within 15 minutes following each decision to alert and notify the public and to issue protective action recommendations.

FEMA requires that all EAS messages be actually drafted and ready for broadcasting within 15 minutes following each decision that requires an EAS message.

Activities to be simulated:

- Simulated siren sounding and airing of the EAS message must be accomplished within 15 minutes after the County Executives (or his/her degree) reach a decision which requires activating the alert and notification system.
- There will be only one (1) evaluation by FEMA of simulated siren sounding.
 - First EAS message.
- There will be only one (1) evaluation by FEMA of simulated airing of the EAS message. This is the first EAS message. Recommendations such as parks/school closings do not require an EAS message, but rather a news release.
- Should the simulation of first siren sounding and/or issuance of first EAS message not meet the 15 minutes mandated time frame, the subsequent simulated siren sounding/issuance of an EAS message will be evaluated by FEMA.

Federal evaluators will record the times for all activities in the process.

The last time to be recorded is the time at which the EAS message begins to be broadcasted (first three (3) words to the talk-up read for simulated broadcast).

FEMA will have evaluators at the radio station.

For a simulated siren sounding, Federal evaluators will secure the time of alert system activation from the person simulating the activation.

During the exercise, back-up route alerting is to be simulated after siren failure message is inserted.

5. JNC

- Ability to fully staff and operate facility in accordance with the JNC procedures;
- Ability to coordinate PARs with respective EOCs;
- Ability to formulate clear and accurate EAS messages;
- Ability to initiate the EAS messages (simulated) within prescribed 15 minute time frame;

- Ability to provide accurate information to media at press briefings;
- Ability to operate rumor control during the site area emergency and general emergency levels in accordance with the JNC procedures.

Shift Change:

A shift change will be demonstrated for key positions only.

Exceptions:

- State JNC staff will arrive no sooner than 15 minutes after Alert declaration is received by State and County over the RECS line; County JNC staffs will arrive no sooner than 15 minutes after NUE declaration is received over RECS line.
- Siren sounding will be simulated (four County Executives will coordinate the siren sounding over the Executive Hot Line).
- Airing of EAS message (one only) will be simulated specifically, the JNC is only required to make two (2) contacts with the EAS station for only one EAS message (to get credit):
 - during EAS message formulation, contact radio station and place it on stand-by.
 - call again with first EAST message (the clock will be stopped after the announcer says the first three (3) words of the talk-up).

6. RECEPTION CENTERS

All facilities are to be demonstrated prior to the exercise, out-of-sequence with the exercise scenario.

One (1) reception center is to be opened and staffed for evacuees in each of the four counties in accordance with respective local emergency response plans. Because of logistics and the need to arrange access to facilities before a demonstration, reception centers have been preselected. See offsite extent of play activities schedule.

Reception Centers will not be set-up in advance. Federal evaluations will include:

- Arrival of staff;
- Setting-up;
- Operation.

Per FEMA requirements, each activated facility should be prepared to demonstrate:

- One-third of the radiological monitors needed for initial personnel monitoring designated in the plan (one-third of one shift per Reception Center to be demonstrated) (Orange County only) and other support staff as indicated on page 6:

Category	Number of Persons			
	Orange County	Rockland County	Westchester County	Putnam County
Radiological monitors for personnel monitoring	1	2 (See Note 1)	2 (See Note 1)	2 (See Note 1)
Recorders	1	(See Note 2)	2	(See Note 3)

Note 1: One monitor for portal monitoring; one monitor for handheld monitoring

Note 2: Evacuees will be monitored, then either given a "clean" card or directed to decontamination area.

Note 3: Evacuees will be monitored, then either hand-stamped or directed to decontamination area.

At a minimum, the additional monitoring personnel will include:

- 2 monitors for decontamination
- 1 monitor for vehicle monitoring
- 1 monitor for vehicle decontamination

With regard to registrars (social services), the following staffing will be present at a minimum:

- 1 individual, Orange County
- 2 individuals, Rockland County
- 1 individual, Putnam County
- 2 individuals, Westchester County.

Please note that the Federal evaluator may not use a hidden source (such as a lantern mantle) to test the skills of monitors.

- Organizational ability and resources to determine compliance with the 20% planning basis for a 12-hour period including:

- Ninety seconds/person monitoring speed using handheld instrumentation (an average for all personnel monitored);
- adequate space;
- adequate instrumentation;
- adequate staffing by rosters (remaining monitors);
- thirty seconds/person monitoring speed using portal monitor (Westchester, Rockland, and Putnam Counties only). Two people/minute = 120 hr = 1440/12 hrs.

Only one of the decontamination facilities (male or female) will be set up and demonstrated. Each vehicle monitor will process no more than two (2) vehicles. All facilities to be evaluated should be set up as they would be in an actual emergency, with all route markings and contamination control measures in place. Facilities and equipment for decontamination will be in place for evaluator "walk throughs," and decontamination procedures should be explained. There would be only a representative (small) sample of supplies available at each facility.

Decontamination techniques will be simulated. At the PMC, anything that may damage property (such as parking vehicle on grass) is to be simulated. Persons responsible for decontamination should be aware of action levels in organizational plans for determining the need for decontamination. The monitoring and decontamination teams are not to be suited up in anti-contamination clothing. The Federal evaluator may request one (1) monitor only to suit-up in anti-contamination clothing for demonstration purposes.

Shift Change:

There will be no demonstration of a shift change at these facilities.

Notes:

- 1) SEMO, Westchester, Rockland, Orange and Putnam Counties and FEMA have agreed that the Reception Centers will be demonstrated under the following schedule. See offsite extent of play activities schedule.
- 2) It will be the responsibility of FEMA to have evaluators available at the times agreed upon (shown above).
- 3) FEMA evaluator should advise the participants when his/her evaluation is complete so that participants can resume their normal duties.

Exceptions

- 1) Reception Center floors are not to be covered with paper/plastic during this demonstration.
- 2) Liquid waste from decontamination does not have to be contained and can be discharged to sanitary sewer or directed as run-off, per prior FEMA policy guidance and the NYS Sanitary Code Part 16.

7. CONGREGATE CARE CENTERS

All facilities to be demonstrated prior to the exercise, out-of-sequence with the exercise scenario.

One (1) congregate care center per county will be opened and staffed in accordance with the plan. Because of logistics and the need to arrange access to facilities before a demonstration, congregate care centers were preselected. See offsite extent of play activities schedule.

Each center will demonstrate the following staffing:

- Shelter Manager;
- Registrar;
- Support staff (one individual);
- Communicator.

In some instances one individual may perform two (2) functions (e.g., Shelter Manager could also serve as communicator). Per FEMA instructions, each activated center is to demonstrate its equipment and supplies and will not be set-up in advance.

In addition, FEMA observations will include:

- Sleeping accommodation area;
- Feeding facility capability;
- Sanitary facilities;
- Parking areas
- Facility activation.

Shift Change:

There will be no demonstration of a shift change at these facilities.

Notes:

- 1) SEMO, Orange, Rockland, Bergen, Westchester and Putnam Counties and FEMA have agreed that the Congregate Care Centers will be demonstrated according to the extent of play activities schedule.
- 2) It will be the responsibility of FEMA to have evaluators available at the times agreed upon (shown above).
- 3) FEMA evaluator should advise the participants when his/her evaluation is complete so that participants can resume their normal duties.

Exceptions:

Supplies required for long-term mass care (cots, blankets, food, etc.) are not to be acquired or brought to the centers. However, the Center Manager should be aware of the Center's capacity. The center personnel are then to make the necessary estimates of supplies required for the potential evacuees. Sources of the required supplies are to be located and the means for transportation of the supplies is to be determined. Federal evaluators may request to be processed through the registration area. Federal observers may introduce free play problems to test procedures for handling evacuees arriving at a congregate care center without appropriate documents from the referral reception center. Each center must have the capacity signs posted.

8. EMERGENCY WORKER PMCs

All facilities to be demonstrated prior to the exercise, out-of-sequence with the exercise scenario.

Each county will be set up and demonstrate one (1) PMC for local emergency workers. The following PMCs were pre-selected:

Westchester County	1	Fire Training Center, Valhalla
Rockland County	1	Rockland County Sewer District, Rt 340, Sparkill, NY
Orange County	1	BOCES, Goshen, NY
Putnam County	1	Carmel Fire Department

Emergency Worker PMCs will not be set-up in advance. Federal evaluations will include:

- Arrival of staff;
- Setting up;

- Operation.

Each PMC will be set up as it would be in an actual emergency, with all route markings and contamination control measures in place. Procedures for monitoring personnel and vehicles are to be demonstrated using Federal evaluators.

Per FEMA instructions, each facility will demonstrate the following:

- One (1) monitor for personnel monitoring;
- One (1) monitor for personnel decontamination;
- One (1) monitor for vehicle monitoring;
- One (1) monitor for vehicle decontamination.

The monitoring and decontamination teams are not to be suited up in anti-contamination clothing. However, the Federal evaluator may request one (1) monitor only to suit-up in anti-contamination clothing for demonstration purposes.

Please note that the Federal evaluator may not use a hidden source (such as a lantern mantle) to test the skills of the monitors.

Facilities and equipment for decontamination will be in place and decontamination procedures explained, including solid waste disposal procedures.

Decontamination actions are to be simulated. At the PMC, anything that may damage property (such as parking vehicles on grass) is to be simulated.

Liquid waste from decontamination does not have to be contained and can be discharged to sanitary sewer or directed as run-off, per prior FEMA policy guidance and the NYS Sanitary Code, Part 16.

Shift Change

There will be no demonstration of a shift change at these facilities.

- Notes:
- 1) SEMO, Westchester, Rockland, Orange, and Putnam counties and FEMA have agreed that the Emergency Worker PMCs will be demonstrated according to the extent of play activities schedule.
 - 2) It will be the responsibility of FEMA to have evaluators available at the times agreed upon (shown above).
 - 3) The FEMA evaluator should advise the participants when his/her evaluation is complete so that participants can resume their normal duties.

- 4) 90 sec/person monitoring speed is not applicable to EW PMC.
- 5) EW PMS floors are not to be covered with paper/plastic during this demonstration.
- 6) One (1) portal monitor for personnel monitoring will be demonstrated by Rockland County only.

9. FIELD MONITORING TEAMS

Each county in the plume exposure EPZ will dispatch two (2) radiological monitoring teams. Each team will be supplied with a controller. The controllers will have simulated field data, which are to be provided to the field teams to determine local dose rate readings consistent with the scenario. Each team should have the necessary equipment to determine both actual area gamma dose rates, presence of beta radiation and airborne radioiodine concentrations. However, each team will have a Federal evaluator. The monitoring teams are not to be suited up in anti-contamination clothing.

To reduce expenses, the use of silver zeolite cartridges will be simulated, and less costly charcoal cartridges will be used. However, the silver zeolite cartridges should be available (at dispatch point of kit) and observed by the Federal evaluator, if requested.

There will be no actual packaging or transport of samples to the laboratory. EOC staff will be questioned only regarding means of transportation of air samples to a central point and the location of the laboratory. Field teams will be required to obtain air samples during the exercise and will be questioned only regarding the procedures for the pick-up point of air samples.

Shift Change:

There will be a shift change of one team only in each county.

Notes: If a field monitoring team is using a multi-channel radio for communication, one of those channels could be used as the primary communication system and the other could be used as the back-up communication system.

Exceptions:

- For those counties not affected by the plume, field monitoring teams may not be able to demonstrate all capabilities listed in the Points of Review, Exercise Evaluation Methodology – Objectives 6 and 8. However, those teams may still be asked to take a sample. It is understood that the circumstances described above

will not adversely affect FEMA's evaluation of the field monitoring team's performance (e.g. objective not met or partially met). An interview of team members may substitute for the lack of field data.

10. DOSE ASSESSMENT

All activities associated with dose assessment are to be performed as they would be in an actual emergency. The lead responsibility for dose assessment function rests with the following individuals:

- | | | |
|----------------------|---|---|
| • New York State | - | Director, Bureau of Env. Radiation Protection |
| • Westchester County | - | Dose Assessment Emergency Director |
| • Rockland County | - | Dose Assessment Team Leader |
| • Orange County | - | Radiological Officer |
| • Putnam County | - | Radiological Officer |

The dose assessment team should direct the field teams to locations consistent with its initial projections of the plume location. The dose assessment team should then make determinations of the actual plume based on parameters such as its boundaries and center line.

Plume dose projections should be used to develop protective action recommendations which could modify or expand upon the PARs made originally. Thus the dose assessment team should have the capability to provide the results of dose projection activities to the County Executive responsible for protective action decision making in a manner and with a time frame that supports such decision making.

The Federal evaluator will observe whether dose assessment and accident evaluation personnel provide recommendations to the decision-maker taking into account all relevant factors including:

- utility recommendations;
- independent county dose assessment;
- plant conditions

There will be no actual packaging or transport of sample to the laboratory. EOC staff will be questioned only regarding means of transportation of air samples to a central point and the location of the laboratory.

Shift Change:

There will be no demonstration of a shift change at these facilities.

11. SPECIAL POPULATION BUS RUNS (for General Public)

All bus routes are to be demonstrated prior to the exercise, out-of-sequence with the exercise scenario.

Each of the four 10-mile plume exposure pathway EPZ counties is to activate one (1) bus route. Federal evaluators will also interview an additional bus provider. See offsite extent of play activities schedule.

The exercised bus routes are to be "free played" prior to the June 24, 1998 exercise. Free play messages are to be inserted at the garage to the State Controller. Information will be passed to the bus dispatcher for action and dispatching of buses. This approach is to contribute to the realism of the exercise by allowing the Federal observers to select which bus routes will be exercised on the day of the demonstration.

The bus drivers are to assemble at their normal dispatch location and are to be assigned appropriate routes, briefed, and deployed in accordance with the appropriate procedures. The buses are to complete their assigned route but not pick up any volunteer evacuees or not to make any stops at the pick-up points identified on the prescribed bus route. The Federal evaluator will question the bus driver about the location of pickup points. Upon completion of the special population route (last pick-up point), the buses are to return to the garage. The bus drivers' knowledge about the location of the appropriate reception center designated in the plan will be established during an interview.

Federal evaluators will observe whether:

- Bus dispatchers understand and follow activation procedures for drivers;
- Bus drivers receive an information packet specific to his/her route;
- Bus driver's knowledge of the prescribed route, including pick-up points, dosimetry, KI and location of reception center (questioning only) is adequate.

During the June 24, 1998 exercise, there will be initial contact only with the bus company(ies) (telephone call) by the Transportation Coordinator.

- Notes:
- 1) County will pick up drivers.
 - 2) FEMA will select the route.
 - 3) County can use a van or car as long as the vehicle has communication capability.

Shift Change:

There will be no demonstration of a shift change for bus drivers or bus dispatchers.

12. SCHOOL EVACUATION BUS RUNS

In agreement with the extent of play, interviews were conducted with bus drivers and actual bus runs were demonstrated.

Federal observers are pre-assigned to the bus companies listed in the offsite extent of play activities schedule. Each of the four 10-mile plume exposure pathway EPZ counties is to activate two (2) bus routes. Federal evaluators will also interview transportation providers in the other school districts.

The exercised bus routes are to be "free played" out-of-sequence with the exercise scenario. Free play messages are to be inserted at the bus garage to the State Controller. Information will be passed to the bus dispatcher for action and dispatching of buses. This approach is to contribute to the realism of the exercise by allowing the Federal observers to select which bus routes will be exercised on the day of the demonstration.

The bus drivers are to assemble at their normal dispatch location and are to be assigned appropriate routes, briefed, and deployed in accordance with the appropriate procedures. The buses are to complete their assigned route, but not pick-up any volunteer evacuees and not simulate loading of school children. Upon completion of the school route, the buses are to return to the garage. The bus drivers will be questioned about the location of the school reception center designated in the plan.

Federal evaluators will observe whether:

- Bus dispatchers understand and follow activation procedures for drivers;
- Bus drivers receive an information packet specific to his/her route;
- Bus driver's knowledge of the school location, dosimetry, KI and location of school reception center (questioning only) is adequate.

During the June 24, 1998 exercise there will be initial contact only with the Bus Company (ies) (telephone call) by the Transportation Coordinator.

- Notes:
- 1) County will pick bus drivers
 - 2) FEMA will select a school for simulated evacuation
 - 3) County can use a van or car as long as the vehicle has communications capability.

Shift Change:

There will be no demonstration of a shift change for school bus drivers or dispatchers.

13. NOTIFICATION OF HEARING IMPAIRED

During the exercise, FEMA will observe the hearing impaired lists at the respective EOC

The responsible agency in each county should simulate the alert and notification of hearing impaired by describing the following:

- notification procedures;
- means of notification;
- means for verifying that the messages have been received by the hearing impaired.

14. EVACUATION OF NON-INSTITUTIONALIZED MOBILITY IMPAIRED INDIVIDUALS

During the exercise, FEMA will observe the lists of non-institutionalized mobility impaired individuals at the respective EOCs.

The responsible agency in each County, in discussion with the Federal evaluator, should describe the following:

- Notification procedures;
- Type of disability and transportation resource requirements;
- Availability of appropriate transportation for their evacuation.

There will be no actual dispatch of vehicles for transport of non-institutionalized mobility impaired individuals.

Shift Change:

There will no demonstration or simulation of a shift change for vehicle drivers responsible for evacuation of non-institutionalized mobility impaired individuals.

Exceptions:

During the exercise there will be no Federal evaluation of the evacuation of mobility impaired individuals at special facilities.

15. TRAFFIC CONTROL POINTS (TCPs)

The demonstration will be comprised of two (2) parts:

- 1) Decision making at EOC;
- 2) Interview of law enforcement officials in each of the four counties (Westchester, Putnam, Rockland and Orange).

Decision making at EOC:

During the June 24, 1998 exercise, each of the four 10-mile plume exposure pathway EPZ counties is to activate two (2) TCPs.

Federal evaluators will select only those TCPs which are assigned as per each County Plan to the designated police departments. Free play messages (concerning activation of TCPs) are to be inserted at the County EOC to the State Controller. Information will be passed on to the County Emergency Management Director or his designee for action and dispatch of police officers.

Decision making at the EOC will involve the following:

- Identification of TCP on the map;
- Telephone call to appropriate station.

Interview of law enforcement officials:

During the June 24, 1998 exercise, there will be an interview of the law enforcement officials. There will be no actual placing of barricades and signs.

The availability of barricades and signs may be evaluated during the equipment inventory review (prior to exercise if arrangements are made). During the interview, the Federal evaluators will question the law enforcement officials regarding the following:

- How promptly TCP could be staffed (from time of notification);
- Whether the officers are equipped with dosimetry and know how often they have to read and record the values as appropriate;
- Whether the officers were supplied with KI and are familiar with KI procedures and "chain of command" for authorization;
- Location of Reception Centers.

Notes: 1) The FEMA evaluator should advise the participants when his/her evaluation is completed so that participants can resume their normal duties.

16. IMPEDIMENTS TO EVACUATION

The demonstration of resources necessary to deal with impediments to evacuation will be simulated.

Each of the four 10-mile plume exposure pathway EPZ counties is to demonstrate the organizational ability to deal with no more than two (2) impediments to evacuation.

Federal evaluators in the county EOCs will hand the free play messages to the State Controller. Information will be passed on to the County Emergency Management Director or his designee for action to test the procedures for the removal of traffic impediment.

The EOC staff needs to be able to assess the significance of impediments, re-route the traffic (if appropriate), identify the resources that are required for its removal (e.g. tow trucks, public works equipment, etc.). An estimation of the times of arrival at the scene and for clearing the impediment. No equipment will be deployed to the field.

This demonstration will not involve the actual contact of resource provides or dispatch of a police or other emergency vehicle to the scene of a simulated accident.

17. KI ADMINISTRATION

For exercise play related to the use or non-use of KI, it is necessary to have sufficient radiiodine release to force off-site organizations to engage in a decision making process whether to use or not use KI.

At the EOC, personnel within the dose assessment group should be aware of the procedures regarding the distribution of KI and the individual responsible for authorizing the administration of KI. At each EOC, the following officials or their designees should have an on-going discussion regarding the need to authorize the administration of KI:

- | | | |
|------------------------|---|---|
| • New York State | - | Disaster Preparedness Commission Chairman and |
| Commissioner of Health | | |
| • Westchester County | - | Commissioner of Health and the County Executive |
| • Rockland County | - | Commissioner of Health and County Executive |
| • Orange County | - | Commissioner of Health and County Executive |
| • Putnam County | - | Public Health Director and Radiological Officer |

There should be an adequate supply of KI available at the EOC or other designated location for distribution of emergency workers.

Each county should provide its emergency field workers at risk of exposure, supplies of KI along with their dosimetry equipment before dispatch to the field. Emergency workers should be aware of the procedures regarding the distribution of KI and the individual responsible for authorizing the administration of KI (chain of command).

18. SCHOOL INTERVIEWS

In each of the four 10-mile plume exposure pathway EPZ counties, one school per school district will be interviewed. Only those schools that lie within the EPZ will be visited.

Interviews will be conducted prior to the exercise by a team of two (2) observers: one (1) individual from the affected county and one (1) Federal observer. The interviews are all to be arranged by each county.

The purpose of these interviews will be to evaluate the degree of preparedness for each school utilizing EV-2 checklist, including:

- Availability of written plans and procedures;
- How parents are kept informed about the plans, procedures and reception centers;
- Chain of command that would be involved during an evacuation.

Total number of schools to be interviewed:

- Westchester County – 9 schools
- Rockland County – 5 schools
- Orange County – 1 school
- Putnam County – 3 schools

If any of the schools to be interviewed are closed (not-in-session) on June 24, 1998, the school contact telephone numbers will be verified at the time of the interview.

Specifically, these interviews will take place according to the schedules. See offsite extent of play activities schedule.

19. INVENTORY OF EQUIPMENT AND SUPPLIES

Federal evaluators will visit certain facilities within the four 10-mile EPZ counties to verify the inventory of equipment and supplies.

The following facilities will be checked for their inventory:

Orange County

- One Emergency Worker Personnel Monitoring Center DPW in Goshen
- One Reception Center – EOC
- EOC – Field Radiological Monitoring Kits

Putnam County

- One Emergency Worker Personnel Monitoring Center (Carmel Fire Department)

- One Reception Center – Carmel High School
- EOC – Field Radiological Monitoring Kits

Rockland County

- One Emergency Worker Personnel Monitoring Center (Rockland County Sewer District – Route 340, Sparkill)
- One Reception Center – Suffern Senior High School
- EOC – Field Radiological Monitoring Kits

Westchester County

- One Emergency Worker Personnel Monitoring Center (County Fire Training Center, Valhalla)
- One Reception Center – Eastchester Middle School
- EOC – Field Radiological Monitoring Kits (stored at Health Department – 112 East Post Road, White Plains, NY).

See offsite extent of play activities for inventory dates.

20. MEDICAL DRILLS

There will be two (2) medical drills conducted and evaluated prior to the June 24, 1998 exercise:

Westchester County	– West Co. Medical Center	– May 12, 1998
Putnam County	– Putnam Hospital Center	– May 28, 1998

Both drills must demonstrate the adequacy of ambulance facilities and procedures for handling contaminated injured individuals.

The functions to be demonstrated include: (1) prompt arrival at the accident scene; (2) initial medical assessment to determine the presenting problems (i.e., life-threatening injury or other type of injury; (3) radiological monitoring (may not be done by EMS or Reception Center staff) if person does not have a life-threatening injury; (4) contamination control procedures if person does not have life-threatening injury or such measures can be effected enroute without delay of treatment, and (5) transport to the appropriate medical facility.

The medical drill scenario will necessitate transporting the victim to a hospital. An actual person will play the role of the victim, he or she will actually be transported to an appropriate hospital. However, the use of flashing lights and sirens for exercise play is not required and not recommended.

Each drill must also demonstrate the adequacy of hospital facilities and procedures for handling contaminated injured individuals. This demonstration should include:

- **Effective preparation for the arrival of the victim, including appropriate contamination control measures;**
 - **Setting appropriate priorities between contamination control and medical treatment;**
- The hospital personnel should survey and simulate decontamination of the victim properly.**

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events -- Exercise Scenario -- which was used as the basis for invoking emergency response actions by OROs in the Indian Point 2 exercise on June 24, 1998.

This exercise scenario was submitted by the State of New York and New York Power Authority, and approved by FEMA Region II on June 22, 1998.

CONSOLIDATED EDISON COMPANY OF NEW YORK

INDIAN POINT STATION NO. 2

DRILL SCENARIO NO. 1988C

III. DRILL SCENARIO

Initial Condition

The Indian Point Unit No. 2 Nuclear Generating Station has been operating at full power for 73 days. No equipment is out of service.

Narrative Summary

An electrical fault on the transmission system will cause the generator output breakers to open. This will trip the turbine and close the turbine stop valves. The reactor will also trip. The operators will take actions to respond to the Reactor trip and identify a loss of all offsite AC power. All three emergency diesel generators will start but #23 diesel generator will not tie in to 480V Bus 6A due to an electrical fault on the bus. 480v Buses 5A, 2A and 3A will be energized from #21 and #22 diesel generators.

The Senior Watch Supervisor will declare an NUE based on EAL 6.1.1, Loss of Unit Auxiliary transformer, Station Auxiliary transformer and 13.8KV gas turbine auto transformer for greater than 15 minutes.

Emergency Diesel Generator #22 will fail and 480V Buses 2A and 3A will be deenergized. The Senior Watch Supervisor will declare an Alert Emergency based on EAL 6.1.3. Available AC power sources reduced to only one emergency diesel generator for greater than 15 minutes.

A large break LOCA will occur resulting in an automatic Safety Injection actuation signal. Due to the degraded 480V system the minimum requirements for engineered safety features cannot be established. Injection flow into the Reactor Coolant System will not be adequate and Reactor Coolant Inventory will continue to decrease. When Reactor Vessel level decreases below 39%, the Emergency Director will declare a Site Area Emergency based on either EAL 3.1.3, RVLIS less than 39% with no RCPs running, or EAL 1.2.2, Orange path on Core Cooling.

Inadequate core cooling will result in fuel damage and cause containment radiation monitors to increase greater than 68 R/hr. The Emergency Director will declare a General Emergency based on EAL 2.2.3, containment radiation monitors R-25 or R-26 greater than 68 R/hr or EAL 1.2.2, Red path on Core Cooling and function restoration actions taken and procedures not effective within 15 minutes.

The Emergency Director will recommend evacuation of the two mile radius and 2-5 miles downwind for the General Emergency. In addition sheltering of all remaining Emergency Response Planning Areas will also be recommended.

The containment fission product barrier will be breached at 1245 and an offsite release will be identified by the operators. A dose assessment will be performed and identify total dose (TEDE) to the whole body in excess of 1 Rem beyond the two mile radius. The Emergency Director will then recommend extending the evacuation to the five-mile radius and 5-10 miles downwind.

Operations and maintenance will take actions to restore power to 480V Buses 2A and 3A. When the Refueling Water Storage tank inventory is depleted the operators will establish cold leg recirculation.

Operations and Health Physics will identify the source of the radioactive release and at 0345 isolate the leak. After the release is terminated a time warp will occur. Normal offsite power will be restored and the reactor will be in a stable condition on long term recirculation. The drill will be terminated when the Emergency Director enters the recovery stage.