July 18, 2000

Mr. Robert J. Barrett
Site Executive Officer
New York Power Authority
Indian Point 3 Nuclear Power Plant
Post Office Box 215
Buchanan, NY 10511

SUBJECT: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FINAL EXERCISE REPORT FOR THE MAY 25 - 27, 1999, INDIAN POINT 2 NUCLEAR POWER STATION INGESTION PATHWAY EXERCISE

Dear Mr. Barrett:

Enclosed is a copy a letter from Lynn G. Canton, Regional Director, FEMA Region II to Hubert J. Miller, Regional Administrator, NRC Region I forwarding the subject report for the May 25 - 27, 1999 Indian Point 2 Nuclear Power Station ingestion pathway exercise.

In the enclosed report, there were no Deficiencies identified during the exercise; however, one Area Requiring Corrective Action was identified. Since you share a common emergency planning zone with Indian Point 2, please work with them to provide assistance to offsite officials as they address and resolve the identified items on a timely basis.

If you have any questions concerning this enclosure, please contact David Silk at (610) 337-5372.

Sincerely,

/RA/

Richard J. Conte, Chief
Operational Safety Branch
Division of Reactor Safety

Docket No. 05000286
License No. DPR-64

Enclosure: Final Exercise Report for the May 25-27, 1999, Full-Participation Ingestion Exposure Pathway Exercise

cc w/encl:
C. D. Rappleyea, Chairman and Chief Executive Officer
E. Zeltmann, President and Chief Operating Officer
J. Knubel, Chief Nuclear Officer and Senior Vice President
F. Dacimo, Plant Manager
H. P. Salmon, Jr., Vice President of Engineering
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G. C. Goldstein, Assistant General Counsel
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cc w/o encl:
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J. McCann, Department Manager of Nuclear Safety and Licensing
C. W. Jackson, Con Edison
C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law
Chairman, Standing Committee on Energy, NYS Assembly
Chairman, Standing Committee on Environmental Conservation, NYS Assembly
T. Morra, Executive Chair, Four County Nuclear Safety Committee
Chairman, Committee on Corporations, Authorities, and Commissions
The Honorable Sandra Galef, NYS Assembly
P. D. Eddy, Electric Division, Department of Public Service, State of New York
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and Development Authority
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FEDERAL EMERGENCY MANAGEMENT AGENCY
Region II
Jacob K. Javits Federal Building
26 Federal Plaza, Room 1337
New York, New York 10278-0002

February 28, 2000

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 May 25-27, 1999, full-participation Ingestion Exposure Pathway exercise of the offsite radiological emergency response plans specific to the Indian Point 2 Nuclear Power Station. The State of New York participated in this exercise, as well as Westchester, Rockland, Putnam, and Orange Counties of New York. 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.

No Deficiencies were observed, and one Area Requiring Corrective Action (ARCA) was identified during the May 25-27, 1999, exercise. FEMA Region II staff will monitor the status of corrective actions.

Based on the results of the May 25-27, 1999, 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 Robert F. Reynolds, FEMA Region II Regional Assistance Committee Chairperson, at (212) 225-7204.

Sincerely,

Lynn G. Canton
Regional Director

Cc's: Vanessa E. Quinn, FEMA Headquarters
Patricia C. Tenorio, FEMA Headquarters
Bruce A. Boger, NRC Headquarters
Robert J. Bores, NRC Region I

Enclosure

Final Exercise Report

INDIAN POINT 2
NUCLEAR POWER STATION

Ingestion Pathway Exercise

Licensee:	CONSOLIDATED EDISON
Exercise Date:	May 25-27, 1999
Report Date:	February 1, 2000

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION II

26 Federal Plaza
New York, New York 10278

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I. EXECUTIVE SUMMARY

On May 25-27, 1999, an exercise was conducted in the Ingestion Emergency Pathway Zone (IPZ) around the Indian Point 2 Nuclear Power Station by the Federal Emergency Management Agency (FEMA), Region II. The purpose of the Ingestion Exercise was to assess the level of State and local preparedness in responding to a radiological emergency within the IPZ. 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 Indian Point 2 was conducted on June 24, 1998 (Plume only). 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, 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 Ingestion Exercise.

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 one Area Requiring Corrective Action (ARCA) 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.

An Ingestion Exercise was conducted on May 25-27, 1999, by FEMA Region II to assess the capabilities of State and local emergency preparedness organizations, in the IPZ, 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 Acting 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 IPZ, 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 May 25-27, 1999, Ingestion 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 IPZ, 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. Ingestion Planning Zone Description

The Indian Point Nuclear Power Station's (IPNPS) fifty mile Ingestion Pathway EPZ (IPZ) contains portions of four states New York, Connecticut, New Jersey and Pennsylvania. The New York State 50-mile IPZ contains fourteen counties including Westchester, Rockland, Orange, Putnam, Sullivan, Ulster, Dutchess, Nassau, Bronx, Queens, New York (Manhattan), Kings (Brooklyn) and Richmond (Staten Island).

Within the New York State portion of the 50-mile IPZ, there are dairy farms, and wide range of agricultural commodities including vegetables, fruits, orchards and vineyards.

Recreational activities include boating, fishing and hunting. There are several historic sites located within the 50-mile IPZ.

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 Ingestion Exercise on May 25-27, 1999.

Federal

Federal Emergency Management Agency
U.S. Nuclear Regulatory Commission
U.S. Department of Energy

State of New York

New York State Department of Health
New York State Emergency Management Organization (SEMO)
New York State Police
New York State Department of Environmental Conservation
New York State Department of Agriculture and Markets

Risk Jurisdictions

ORANGE COUNTY

Orange County Emergency Management Organization
Orange County Health Department
Orange County Executive Office
Orange County Legislature
Orange County Department of Mental Health
Orange County Department of Public Works
Orange County Communications
Orange County School liaison
Orange County Sheriff's Office
Orange County Department of Social Services
Orange County Fire Coordinator
Orange County Office for the Aging
Orange County EMS Coordinator
Orange County Attorney
Orange County Red Cross
Orange County ARES/RACES
New York State Department of Transportation
New York State Emergency Management Office
New York Power Authority
Civil Air Patrol

Consolidated Edison

PUTNAM COUNTY

Putnam County Radiological Office
Putnam County Fire Coordinator,
Putnam County Resource Coordinator,
Putnam County Highway Department Cooperative Extension,
Putnam County Department of Human Services,
Putnam County PIO,
Putnam County School Coordinator,
Putnam County EOC Director,
Putnam County Department of Health,
New York State Police,
Local Red Cross Chapter,
New York State Emergency Management Office,
Consolidated Edison Liaison

ROCKLAND COUNTY

Rockland County Executive Branch,
Rockland County Fire, Police,
Rockland County Office on Aging,
Rockland County Mental Health,
Rockland County Department Health,
Rockland County Department of Hospitals,
Rockland Schools,
Rockland County EMS,
Rockland County Highway Department,
Rockland County Department of Transportation,
Rockland County Purchasing Department,
Rockland County Office of Disabilities,
New York State Office of Emergency Management,
New York State Police,
Consolidated Edison
American Red Cross

WESTCHESTER COUNTY

Westchester County Office of Disaster
Westchester County Emergency Services

Westchester County Police
Westchester County Department of Transportation
Westchester County Department of Social Services
Westchester County Department of Fire
Westchester County Department of Health
Westchester County Department of Parks
Westchester County Department of Environmental Facilities
Westchester County Department of General Services
Westchester County Department of Mental Health
New York State Police
New York State Department of Transportation
New York State Emergency Management Office
New York City Department of Environmental Protection
U.S. Coast Guard
U.S. National Guard
Peekskill Police Department
American Red Cross
Civil Air Patrol
Byram Hills Central Schools (school desk)

Private/Volunteer Organizations

American Red Cross
Consolidated Edison

C. Exercise Timeline

Table 1, on the following pages, presents the time at which key events and activities were planned to occur during the Indian Point Ingestion Exercise on May 25-27, 1999.

Table 1 - Indian Point 2 Ingestion Exercise Timeline

DAY 1

Time	State EOC	EPZ EOCs	IPZ EOCs	Utility EOF	JNC
	Fully Staffed (1)	Fully Staffed	Emergency Management Staff Only	Partial Staffing	State, 4 Counties & Utility
13:00	Initial Briefing Notify Federal Agencies	Initial Briefing	Receive Notification	Initial Briefing	Initial Briefing
14:30 to 16:00	Respond to Inquiries Federal Advanced Team & RAP Team at EOC Develop Environmental Monitoring Plan	Facilitate Discussion Develop List of Issues/Action Items	Receive Information	Respond to State Inquiries	Conduct Press Briefing(s)
16:30	Terminate Day 1	Terminate Day 1	Terminate Day 1	Terminate Day 1	Terminate Day 1

Note: Only One Utility Rad Health Representative at State EOC

Table 1 - Indian Point 2 Ingestion Exercise Timeline

DAY 2

Time	State EOC	EPZ EOCs	IPZ EOCs	Utility EOF	JNC
	Evaluated Sampling Teams (3) Integrated State/RAP Sampling Teams (2) Dose Assessment Staff (1) State Lab	Emergency Management Staff Only	Emergency Management Staff Only	Partial Staffing	State & Utility Staff Only
8:30 to 15:00	Data Collection and Analysis (Day 2) PAD Development	Receive Information Coordinate, Discuss the Implementation of Simulated PADs with the State Receive PADs, if available	Receive Information Coordinate, Discuss the Implementation of Simulated PADs with the State Receive PADs, if available	Respond to State Inquiries Receive PADs, if available	Receive PADs, if available Conduct Briefings Issue Press Release
16:00	Terminate Day 2	Terminate Day 2	Terminate Day 2	Terminate Day 2	Terminate Day 2

Note: Only One Utility Rad Health Representative at State EOC

Table 1 - Indian Point 2 Ingestion Exercise Timeline

DAY 3

Time	State EOC	EPZ EOCs	IPZ EOCs	Utility EOF	JNC
	EOC Staff (1)	Emergency Management Staff Only	Emergency Management Staff Only	Partial Staffing	State & Utility Staff
8:30 to 14:00	Analyze Data (Day 8) Implement PADs Discuss Long Term Actions	Receive PADs Coordinate and Discuss the Implementation of Simulated PADs with the State	Receive PADs Coordinate and Discuss the Implementation of Simulated PADs with the State	Respond to State Inquiries	Receive PADs, if available Conduct Briefing(s) Issue Press Release(s)
16:00	Terminate Day 3	Terminate Day 3	Terminate Day 3	Terminate Day 3	Terminate Day 3

Note: Only One Utility Rad Health Representative at State EOC

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 May 25-27, 1999, Ingestion Exercise to test the offsite emergency response capabilities of State and local governments in the 50-mile IPZ 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 Ingestion 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 Ingestion Exercise Evaluation
May 25-27, 1999 – Indian Point 2 Nuclear Power Station

JURISDICTION/FUNCITONAL 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	32	33
NEW YORK STATE																																	
Emergency Operations Center		M	M	M																			M			M	M	M	A				
Assessment and Evaluation Group																										M		M					
Wadsworth Radiological Laboratory		M		M																					M								
Field Sampling Teams				M	M																			M									
Field Team Coordination				M																				M									
Joint News Center											M	M																					

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.

NEW YORK STATE

1 Emergency Operations Center

a. **MET:** Objectives 2, 3, 4, 23, 26, 27, and 28.

b. **DEFICIENCY:** NONE.

c. **AREAS REQUIRING CORRECTIVE ACTION:** 29

Issue No.: 32-99-29-A-01

Description: Implementation issues associated with relocation and re-entry were not adequately communicated to the staff or public, and not fully coordinated with other organizations, such as the counties.

Key decisions and instructions were not communicated to the staff or the public for proper implementation. For example, although the public was instructed to relocate from hotspots A and B, the evacuees were not provided with the length of time the relocation was estimated to last (over one year), or of the preparedness actions to take for such an extended evacuation.

Also, implementation of protective actions were not fully coordinated with other organizations such as the affected counties. For instance, implementation of the re-entry policy, which varied among the counties involved, was not fully discussed and coordinated.

Recommendation: A recorder should be designated to ensure that key information is successfully communicated from command and control to the staff and to the public. The recorder could post such information (i.e., evacuation areas, relocation areas, contamination levels, re-entry policy with exposure limits, return policy, etc.) on an automated status board that is visible to all EOC staff, including the Public Information section.

Press Releases should be followed by full briefings to fill in any information gaps, ensuring complete instruction to the public for effective implementation. Finally, the SEOC should demonstrate more attention of implementation issues with the counties and other organizations.

Corrective Action Demonstrated:

d. **NOT DEMONSTRATED:** NONE.

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

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

2 Assessment and Evaluation Group

a. **MET:** Objectives 26 and 28.

b. **DEFICIENCY:** NONE.

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

d. **NOT DEMONSTRATED:** NONE.

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

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

3 Wadsworth Radiological Laboratory

a. **MET:** Objectives 2, 4 and 25.

b. **DEFICIENCY:** NONE.

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

d. **NOT DEMONSTRATED:** NONE

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

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

4 Field Sampling Teams (3)

a. **MET:** Objectives 4, 5, and 24.

b. **DEFICIENCY:** NONE.

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

d. **NOT DEMONSTRATED:** NONE.

e. **PRIOR ARCAs - RESOLVED:**

Issue No.: ARCA #1 from the July 7, 1993 New York State Ingestion Exercise

Description: The cellular telephone used by State Sampling Teams on 7/14/93, Day 2, did not operate properly. At various times, the teams were out of contact with the Lake District Emergency Operation Center (LDEOC) for extended periods of time. The Teams could not be redirected, requests additional information and instructions, or report conditions at various times during their mission. A backup system of commercial telephones is often not practical due to the remote locations the Teams often travel to. The LDEOC was not able to reach the Sampling Teams to provide direction by commercial (pay) telephone. The communication system did not function properly in tests at the LDEOC before the mission began (NUREG-0654, F.1.d).

Recommendation: An improved communications system should be used for the field teams. An alternative backup system should be utilized since the commercial (pay) telephone was not practical. It is recommended that the primary system function properly prior to the sampling team's deployment to a mission. In addition, an alternative method of backup communications should be identified.

Corrective Action Demonstrated: The cellular telephones issued to the three New York State Sampling Teams sent into the field during the May 1999 Ingestion Exercise at Indian Point 2 operated without malfunction. Telephone calls were made through out the exercise with no delays or loss of message transmission.

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

5 Field Team Coordination

a. **MET:** Objectives 4 and 24.

b. **DEFICIENCY:** NONE.

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

d. **NOT DEMONSTRATED:** NONE.

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

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

6 Joint News Center (JNC)

a. **MET:** Objectives 11 and 12.

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
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EAL	Emergency Action Level
EOC	Emergency Operations Center
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
IPZ	Ingestion Planning Zone
JNC	Joint News Center
NOUE	Notification of Unusual Event
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	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*
ORO	Offsite Response Organization
PAD	Protective Action Decision
RAC	Regional Assistance Committee

RACES	Radio Amateur Civil Emergency Service
RAP	Radiological Assistance Program
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
USDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS

The following is a list of the personnel who evaluated the Indian Point 2 ingestion exercise on May 25-27, 1999. The Organization which each evaluator represents is indicated by the following abbreviations:

FEMA	- Federal Emergency Management Agency
NRC	- Nuclear Regulatory Commission
FDA	- Food & Drug Administration
EPA	- Environmental Protection Agency
ANL	- Argonne National Laboratory
KLT	- K.L. Travis & Associates, Inc.

EVALUATION SITE	EVALUATOR	ORGANIZATION
New York State:		
EOC (Ingestion)	B. Acerno	FEMA
EOC (Ingestion)	D. Tang	FEMA
EOC (Communication & Supplemental Assistance)	F. Wilson	ANL
EOC (Assessment & Evaluation Group)	J. Hardin	KLT
Wadsworth Radiological Laboratory	F. Wilson	ANL
State Field Sampling Teams	R. Bernacki	FDA
	J. Eng	EPA
	B. Gasper	ANL
State Field Team Coordination	C. Gordon	NRC
Joint News Center	B. Mason	FEMA

Demonstrations observed by FEMA but not formally evaluated:

Disaster Field Office	J. Connolly	FEMA HQ
	A. Thompson	FEMA
Westchester County EOC	S. Nelson	ANL
Orange County EOC	C. Herzenberg	ANL
Rockland County EOC	T. Carroll	ANL
Putnam County EOC	S. Thomas	FEMA

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 May 25-27, 1999 and the extent-of-play agreement approved by FEMA Region II on March 19, 1999.

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 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 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 23: SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHERS)

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

OBJECTIVE 24: POST-EMERGENCY SAMPLING

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

OBJECTIVE 25: LABORATORY OPERATIONS

Demonstrate laboratory operations and procedures for measuring and analyzing samples.

OBJECTIVE 26: INGESTION EXPOSURE PATHWAY – DOSE PROJECTION AND PROTECTIVE ACTION DECISION MAKING

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

OBJECTIVE 27: INGESTION EXPOSURE PATHWAY – PROTECTIVE ACTION IMPLEMENTATION

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

OBJECTIVE 28: RELOCATION, RE-ENTRY, AND RETURN DECISION MAKING

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

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

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

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 March 19, 1999, in preparation for the Indian Point 2 ingestion exercise on May 25-27, 1999. 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.

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY

For this exercise, players at all facilities will be pre-positioned.

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

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

Locations Observed: SEOC, and State laboratory

Extent-of-Play: On Days One, Two and Three, the State will demonstrate the adequacy of facilities to support operations in the State EOC through the use of maps, status boards and other sources of information. The State laboratory will demonstrate the adequacy of facilities and equipment to analyze the following samples: water, milk, vegetables, leafy vegetation, soil, particulate filters and air sample cartridges, and other appropriate samples.

ARCAs: None.

OBJECTIVE 3: DIRECTION AND CONTROL

Demonstrate the capability to direct and control emergency operations.

Locations Observed: SEOC

Extent-of-Play: On Day One, the State EOC staff will demonstrate the capability to provide prompt and accurate responses to inquiries from the EPZ counties and IPZ States and counties. On Day Two and Three, the State will demonstrate decision making capabilities in formulating the protective action decisions (PADs) and developing a short and long term action plans for relocation/return/re-entry. The State will also demonstrate an effective

coordination between the State EOC and EPZ counties, IPZ States and counties, JNC, EOF, and State laboratory.

ARCAs: None.

OBJECTIVE 4: COMMUNICATIONS

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

Locations Observed: SEOC, State Laboratory and Sampling Teams

Extent-of-Play: On Day One, Two and Three, the State will demonstrate the capability to communicate with the EPZ counties, IPZ States and counties, JNC and EOF. On Day Two, the State will demonstrate the capability to communicate with the State laboratory. The State will use one or more of the following communications means:

- Commercial telephones
- Executive Hot Line
- Cellular telephones
- Facsimile machines
- Radios
- Computer generated information sources

ARCAs: The cellular telephones used by State sampling teams on 7/14/93, Day Two, did not operate properly. At various times, the teams were out of contact with the Lake District Emergency Operations Center (LDEOC) for extended periods of time. The teams could not be redirected, request additional information and instructions or report conditions at various times during their mission. A backup system of commercial telephones is often not practical due to the remote locations the teams often travel to. The LDEOC was not able to reach the field teams to provide direction by commercial (pay) telephone. The communication system did not function properly in tests at the LDEOC before the mission began. (NUREG-0654, F.1.2)

[NYS ARCA FROM 1993 NIMO INGESTION PATHWAY EXERCISE]

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

Locations Observed: State Field Sampling Teams

Extent-of-Play: On Day Two, State Field Sampling Teams will be provided with two direct reading dosimeters (DRDs), 0-5R and 0-20R; one thermoluminescent dosimeter (TLD), one bottle of KI tablets, and instruction sheets. Team members should be aware of reporting requirements of 1R, 3R and 5R.

ARCAs: None.

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

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

Locations Observed: JNC

Extent-of-Play: On Day One, the Joint News Center (JNC) will be staffed with the State, EPZ counties and utility Public Information Offices (PIOs). However, only the State PIOs will be evaluated. On Day One, the JNC staff will receive information from the State and EPZ counties on the protective action decisions (PADs) made during the simulated plume exposure pathway exercise. In addition, between 14:30-16:30 hours, the State and EPZ counties will provide additional information to the JNC staff related to post-plume issues and/or concerns. Utilizing the available information, the JNC staff will conduct at least one press briefing.

On Day Two, the JNC will be staffed only with the State PIOs and utility support staff. On Day Two, the State EOC will provide information to the State JNC staff on activities of the Sampling Teams, State laboratory and State dose assessment staff. When the protective action decisions (PADs) are made at the State EOC, those will be communicated to the JNC. Utilizing the available information, the State JNC staff will demonstrate the capability to develop and simulate dissemination of accurate news releases.

On Day Three, the JNC will be staffed only with the State PIOs and the utility support staff. On Day Three, the State EOC will continue to provide information to the State JNC staff on refined PADs, and a short and long term relocation/return/re-entry issues.

ARCAs: None.

OBJECTIVE 12: EMERGENCY INFORMATION -- MEDIA

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

Locations Observed: JNC

Extent-of-Play: On Days One, Two and Three, the State PIO will demonstrate the capability to provide prompt, accurate, and responsive information to media representatives on the status of the State's activities.

ARCAs: None.

OBJECTIVE 23: SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHER)

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

Locations Observed: SEOC

Extent-of-Play: On Day One, the State will notify and request assistance from the following Federal agencies:

- FEMA
- NRC
- DOE
- USDA
- EPA
- FDA

On Day One, the Federal Advance Team will arrive at the State EOC in Albany. At approximately 1500 hours, DOE flyover results (1 meter dose rates) will be provided to the State EOC staff. On Days One, Two and Three, the Federal Advance Team will assist the State staff in decision making related to ingestion pathway and recovery, re-entry and relocation issues.

ARCAs: None.

OBJECTIVE 24: POST-EMERGENCY SAMPLING

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

Locations Observed: State Field Sampling Teams

Extent-of-Play: On Day Two, this activity will be demonstrated out of sequence and independent of other activities (EOC/laboratory).

Players, controllers and evaluators will assemble at the Southern District Office where the controller will direct the Field Team Coordinator to dispatch two (2) groups of teams to various sample locations.

- The first group will consist of three (3) State sampling teams to be evaluated by FEMA.
- The second group will consist of two (2) State sampling teams to coordinate the sampling activities with DOE RAP teams. The State/DOE RAP teams will not be evaluated by FEMA.

Each of the evaluated ingestion teams will collect at least two samples including milk, water, vegetable, leafy vegetation, soil, particulate filters and air samples. The samples will be transported back to the Field Team Coordinator who will transfer the samples to the transport vehicle. Transport back to the State laboratory in Albany will be simulated due to time constraints. However, discussion will occur as to what the response time would be. Types of samples collected will include milk, surface water, vegetation, soil, and in-season produce. Communication between the teams and the Field Team Coordinator will be demonstrated.

ARCAs: None.

OBJECTIVE 25: LABORATORY OPERATIONS

Demonstrate laboratory operations and procedures for measuring and analyzing samples.

Locations Observed: State Laboratory

Extent-of-Play: On Day Two, the State laboratory in Albany will demonstrate this activity out of sequence and independent of other activities (EOC/sampling teams). Play will begin with the delivery of samples to the State laboratory in Albany. In the arriving vehicle, a controller will provide at least two samples of each of the following: water, milk, vegetables, soil, particulate filters and air sample cartridges, and other appropriate samples.

Two samples of each type will be analyzed. All scenario sample results will be simulated by controller inject messages.

The State laboratory will transmit scenario sample results to the State dose assessment staff.

ARCAs: None.

OBJECTIVE 26: INGESTION EXPOSURE PATHWAY – DOSE PROJECTION AND PROTECTIVE ACTION DECISION MAKING

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

Locations Observed: SEOC

Extent-of-Play: On Day Two, the State dose assessment staff will demonstrate its capability to determine dose by using controller data based on simulated laboratory analysis of food samples. A second set of data will simulate radiation levels found in field samples of agricultural products and drinking water.

The State dose assessment staff will evaluate the sample results to determine projected 1/2/50 year doses. The dose assessment staff will demonstrate the ability to evaluate various samples including water, milk, vegetable and soil. Summary tables will be prepared with the results. The results of these evaluations will serve as the basis for the protective action decision (PADs).

ARCAs: None.

OBJECTIVE 27: INGESTION EXPOSURE PATHWAY-PROTECTIVE ACTION IMPLEMENTATION

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

Locations Observed: SEOC

Extent-of-Play: The State will utilize current data sets of farmers, food processors, distributors and water suppliers within the ingestion pathway EPZ to implement the protective action decisions (PADs) developed. The State of New York will demonstrate its capability to control, restrict or prevent the distribution of contaminated foodstuffs by the issuance of protective action decisions (PADs).

ARCAs: None.

OBJECTIVE 28: RELOCATION, RE-ENTRY, AND RETURN – DECISION MAKING

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

Locations Observed: SEOC

Extent-of-Play: The State will demonstrate this objective using the "Day Two" data to determine whether the projected dose will exceed the relocation Protective Action Guides. This data will be utilized to formulate the relocation, re-entry and return decision making.

ARCAs: None.

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

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

Locations Observed: SEOC

Extent-of-Play: This objective will be demonstrated by initiating relocation, re-entry and return discussions as to implementing any decisions based on available data. Representatives of the Federal agencies will be present at the State EOC and will participate in discussions.

Areas to be discussed include: controlling the restricted zone, establishment of control points, health considerations, economic impact, re-entry, relocation/return, coordination with other states, long term consideration such as housing.

ARCAs: None.

APPENDIX 4

EXERCISE SCENARIO, AND OVERVIEW

This appendix contains a summary of the Exercise Scenario and an Exercise Overview which were used as the basis for invoking emergency response actions by OROs in the Indian Point 2 exercise on May 25-27, 1999.

This exercise scenario was submitted by the State of New York and New York Power Authority, and approved by FEMA Region II on March 18, 1999.

A. Indian Point 2 Ingestion Exercise Scenario

INGESTION EXERCISE SCENARIO

SUMMARY

MASTER EVENTS LIST

Major Events Leading up to Current Conditions

Monday, May 24, 1999

15:00 NUE (EAL 3.1.1) was declared due a small leak (30 gallons/minute) occurring in the Reactor Coolant System.

16:00 alert (EAL 3.1.2) was declared due to a small break LOCA with loss of safety Injection and Residual Heat Removal Pumps, occurring during plant shutdown.

17:00 Site Area Emergency (EAL 2.2.2) was declared due to containment radiation monitors increasing above 17 R/hr.

19:00 General Emergency (EAL 1.2.2) was declared due to progressing core overheating.

24:00 Offsite release started. The noble gas release rate was 552 Ci/sec and the radioiodine release rate was 55 mCi/sec.

Dose assessment identifies the total dose (TEDE) from plume exposure as 1.6 rem/hr at the site boundary, 530 mRem/hr at 2 miles, 150 mRem/h at 5 miles and 72 mRem/h at 10 miles with a wind direction (from) of 155 degrees with stability class E.

Tuesday, May 25, 1999

05:00 Offsite release ends.

12:00 Plant parameter for the past 3 hours indicate that the plant is stable and the core is covered.

Synopsis of Offsite Conditions

Tuesday, May 25, 1999

Summary of Day 1 Current Conditions (13:00):

The reactor continues to be depressurized in a stable condition and there have been no further releases of radioactive material. No further releases are anticipated.

The classification level remains at a General Emergency while plant inspections occur.

All State and County EOCs are activated

The evacuation of the 5 mile radius and 10 miles downwind (Evacuation Area FF) has been fully implemented. The remainder of the EPZ is sheltered.

The Shelters are full to capacity

The plume has dissipated.

The wind is currently from 155 degrees at 5 meters/second. Light rain was reported in the region with isolated heavy rain in the communities of Walden and Gardnertown area during the release. The weather forecast for the next several days is for clear skies with highs in the mid-60s and lows in the mid-50s. Light winds will be out of the southeast. There is no chance of precipitation.

Sampling Teams have been activated and are ready for dispatch instructions.

The Federal Advance Team and DOE RAP teams have arrived

Available data: Dose forecast and plume air sample results.

13:00 Initial briefing. Notify Federal Agencies.

14:30 to 16:00 Respond to inquires. Federal Advance Team and RAP Teams arrive at EOC.

Develop Environmental monitoring Plan.

Wednesday, May 26, 1999

Summary of Day 2 Current Conditions (08:00):

The reactor continues to be in a stable condition and there have been no further releases of radioactive material. No further releases are anticipated.

The classification level remains at a General Emergency while plant inspections occur.

There has been no rain for the past day. The weather forecast for the next 48 hours is for clear skies with highs in the mid-60s and lows in the upper-50s. Light winds will be out of the southeast. There is no chance of precipitation.

Available data: Soil results for regions A, B, C for May 25th. Ground Shine/Gross Deposition Summary. Deposition footprint map. DOE Flyover Map.

Available data, Dose Assessment Staff only: Produce, leafy vegetable, milk and water results for regions C, D, E for May 28th.

08:30 to 15:00 Data collection and Analysis (Day 2). Develop protective action decisions (PAD). Coordinate and discuss the implementation of PADs

Dose assessment staff develops agricultural PARs and presents to the full EOC based on May 28th data. Agricultural PADs are made based on Day 4 (May 28) data.

Thursday, May 27, 1999

Exercise time jumps to 8 days after the accident. It is now June 2, 1999

Summary of Day 8 Current Conditions (08:00):

The reactor continues to be in a stable condition and there have been no further releases of radioactive material. No further releases are anticipated.

The classification level remains at a General Emergency.

The weather forecast for the next 48 hours is for clear skies with highs in the mid-60s and lows in the upper 50s. Light winds will be out of the south. There is no chance of precipitation.

State EOC staff will continue to be staffed with emergency Management and Dose

Assessment Staffs. There will also be a Federal Advance Team and one utility RAD Health Representative.

All EPZ county EOCs will have their EM staff.

The affected New York State IPZ county EOCs will have their EM staff present.

The JNC will be staffed only with the State PIOs and utility PIO and support Staff.

Available data: Plume dose assessment and PAR summary; DOE Flyover Map; Plume air sample results; deposition map with corresponding summary tables based on field surveys and laboratory results.

08:00 to 14:00 Implement re-location, re-entry, return and agricultural PADs. Discuss long term actions. Develop news releases.

B. Indian Point 2 Ingestion Exercise Overview

The Indian Point Nuclear Power Station Ingestion Pathway Exercise will be a full participation exercise for the State of New York. The State of New York will demonstrate the following objectives:

- 2, 3, 4, 5, 11, 12, 23, 24, 25, 26, 27, 28 and 29.

The above objectives will not be evaluated at the four Emergency Planning Zone (EPZ) counties or the Ingestion Planning Zone (IPZ) States or counties.

Participants will be prepositioned at all participating facilities including:

- State EOC
- EPZ Counties EOCs
- IPZ States and Counties EOCs
- EOF
- JNC

<u>DAY ONE</u> (Tuesday, May 25, 1999)

On Day One, the exercise will start at 13:00 hours and terminate at 16:30 hours. At 13:00 hours, the plume exposure pathway exercise ends (simulated) and the ingestion pathway exercise begins. By that time, the State, EPZ counties and utility will have staffed the following facilities:

- State EOC
- Rockland, Orange, Westchester and Putnam EOCs
- Joint News Center (JNC)
- Emergency Operations facility (EOF)

EPZ counties will have State (SEMO) Liaison Officer present in each EOC. A utility Technical Representative will also be present in each EOC. Between 13:00 and 14:30 hours, the State and EPZ counties EOC staffs and EOF and JNC staffs will have initial briefing which will address the following:

- Plant status
- Radiological release data
- Scenario weather data
- Protective Action Decisions (PADs) – areas evacuated and sheltered
- Status of reception and congregate care centers
- Notification of Federal agencies

EPZ EOCs at 14:30–16:30 hours

At 14:30 hours, EOC staff in all four EPZ counties will start a facilitated discussion (using exercise injects) related to a short and long term ingestion pathway and recovery and reentry issues. The topics may include, but not be limited to, the following:

- Issues related to reception and congregate care centers
- Issues related to schools within 10:mile EPZ
- Status of Traffic and Access Control Points (TCPs/ACPs)
- Status of transportation resources
- Road conditions
- Any unique problems/issues identified by participating agencies during an emergency phase of the exercise which may affect the ingestion/relocation/return/re-entry operations
- Controlled re-entry into evacuated area to perform vital tasks such as milking cows or feeding livestock
- Who will procure and provide safe food for schools, special facilities and congregate care centers
- What to do with schools and businesses that cannot return to restricted areas
- Demand for Mental Health and Social Services to deal with psychological distress from accident
- Safety of milk, water and agricultural products
- Quarantine and embargo of food products
- Disposal considerations for exposed livestock and poultry
- Fishing and hunting restrictions
- Honey bees and their products
- Public perception of affected State and counties agricultural products which could have serious economic consequences
- Cost of lost business – restaurants, food stores and markets

Throughout the course of this discussion, EPZ counties will be identifying and submitting to the State for response and/or action the listing of questions, concerns or problem areas.

EPZ counties will not demonstrate dose calculation field monitoring or sample collection and transportation.

IPZ EOCs at 13:00–16:30 hours

All IPZ States and counties will be informed of the situation and will be keeping lines of communication with New York State opened and respond in accordance with their plans.

State EOC at 14:30–16:30 hours

The Federal Advance Team and DOE RAP teams will arrive at the State EOC. There will be one utility RAD Health representative present at the State EOC.

The State EOC staff, with assistance of DOE RAP personnel, will develop an environmental monitoring plan based on DOE flyover results (1 meter dose rates) provided at 1500 hours, release characterization, isotopic analysis and in-situ gamma results to identify the plume footprint.

The State EOC staff will analyze and respond to all inquiries including FRMAC and DFO locations.

EOF at 14:30–16:30 hours

The EOF will have partial staffing only and will be available for receipt of information and will respond to the State inquiries.

JNC at 14:30–16:30 hours

The JNC, located at the Westchester County Airport, will be staffed with the State, County and utility PIOs. However, only the State PIOs will be evaluated. After 14:30 hours, the JNC PIO staff will conduct at least one press briefing. The utility will be responsible for providing the security at the JNC. There will be no news releases issued. During the ingestion pathway exercise, the following activities will not be demonstrated at the JNC:

- Rumor control
- Media monitoring
- Issuance of EAS messages

DAY TWO (Wednesday, May 26, 1999 – Day 2 of scenario)

State EOC, State Laboratory and State Field Monitoring Teams at 8:30–15:00 hours

The State EOC will be staffed with Emergency Management, dose assessment staffs and other agency representatives required to support the Federal Advance Team. In addition, there will be a Federal Advance Team and one utility RAD Health Representative. The Federal Advance Team will consist of:

- NRC
- USDA
- EPA
- DOE
- FDA
- FEMA

The State will dispatch two (2) separate groups of sampling teams:

- The first group will consist of three (3) State sampling teams to be evaluated by FEMA
- The second group will consist of two (2) State sampling teams to coordinate the sampling activities with DOE RAP teams. The State/DOE RAP teams will not be evaluated by FEMA.

Both groups of sampling teams will collect surface water, milk, vegetables, leafy vegetation and soil. Following collection, the teams will transport the samples back to the Field Team Coordinator and transfer the samples to the transport vehicle. Transport to the State laboratory (Albany) will be simulated. Samples will not be delivered to the laboratory due to time constraints. A discussion will occur as to what the response time would be.

The State laboratory (Albany) will demonstrate this activity out of sequence and independent of other activities (EOC/sampling teams) on Exercise Day 2. Play will begin with the delivery of samples to the State laboratory (Albany). In the arriving vehicle, a controller will provide two samples of each of the following: water, milk, vegetables, leafy vegetation, soil, particulate filters and air samples.

During this time period, monitoring team results and laboratory results will be provided to the State EOC. The State dose assessment staff will evaluate the sample results to determine 1/2/50 year doses for relocation zone definition, and a summary table will be provided for the remaining soil samples with the evaluation against the PAR limits already indicated. Additionally, an agricultural sampling plan will be developed.

Later in the afternoon, the laboratory results will also be provided to the State EOC for various agricultural samples including water, milk, vegetables, leafy vegetation and soil for the dose assessment staff to analyze. Once the dose assessment staff has demonstrated the ability to evaluate the various samples, summary tables will be provided with the results already analyzed.

Based on the PARs made by the dose assessment staff, the DPC Chairman or his designee will make the protective action decisions (PADs).

EPZ EOCs at 08:30–15:00 hours

All EPZ county EOCs will have EM staff present including State (SEMO) Liaison Officer. The EOCs will be available for communications and receipt of information.

IPZ EOCs at 08:30–15:00 hours

The affected New York State IPZ counties will have only EM staff present, and may include

SEMO Liaison Officer. The IPZ States and counties will be available for communications and receipt of information and discussion of ingestion pathway issues impacting each jurisdiction, if applicable.

EOF at 08:30–5:00 hours

The EOF will have partial staffing only and will be available for receipt of information and will respond to the State inquiries,

JNC at 08:30-15:00 hours

The JNC will be staffed only with the State PIOs and utility support staff. The State PIOs will issue at least one news release (simulated). News releases will be provided to all appropriate locations. The State PIO will also conduct at least one press briefing on the status of the State's activities.

State EOC at 15:00-16:00 hours

The dose assessment staff will develop relocation/return PARs based on the available soil data.

Based on evaluation of the various samples, agricultural protective action decisions (PADs) will be developed. All protective action decisions (PADs) will be coordinated and discussed with the EPZ counties and IPZ States and counties. All PADs, if available, will be communicated to the EOF and JNC.

EPZ EOCs at 15:00–16:00 hours

The State protective action decisions (PADs), if available, will be received by the Emergency Management staff. Each EPZ county will coordinate and discuss ingestion pathway simulated PADs with the State of New3 York.

IPZ EOCs at 15:00-16:00 hours

The State protective action decisions (PADs), if available, will be received by the Emergency Management staff. Each New York State IPZ county will coordinate and discuss simulated PADs with the State of New York, New York State will provide ingestion pathway information to each IPZ State.

EOF at 15:00-16:00 hours

The EOF staff will be receiving the State protective action decisions (PADs), if available.

JNC at 15:00-16:00 hours

The State PIOs at the JNC will be receiving the State PADs, if available, and at least one press briefing will be conducted. Following the press briefings, at least one news release will be issued (simulated) from the JNC. News releases will be provided to all appropriate locations.

DAY THREE (Thursday, May 27, 1999)

Play will continue on May 27 (simulated Day 8 through time jump).

State EOC at 8:00-16:00 hours

The State EOC staff will continue to be staffed with Emergency Management and Dose Assessment staffs. There will also be a Federal Advance Team and one utility Rad Health Representative. The State EOC staff will continue to implement the protective action decisions (PADs) in coordination with the EPZ counties and IPZ counties. There will be discussions between the State staff and Federal representatives concerning relocation/return/re-entry. EPZ counties may have representatives at the State EOC on Day 3 to participate in these discussions. Finally, a long term sampling plan will be developed.

EPZ EOCs at 08:00-16:00 hours

All EPZ county EOCs will have their EM staff including State (SEMO) Liaison Officer present. Each EPZ county will coordinate and discuss simulated PADs with the State of New York.

EOF at 08:00-16:00 hours

The EOF staff will be available for receipt of information and will respond to the State inquiries.

JNC at 08:00-16:00 hours

The JNC will be staffed only with the State PIOs and utility support staff. The State PIOs at the JNC will be receiving the State PADs and conducting at least one press briefing. Utilizing the available information, the State PIOs will issue at least one news release (simulated). News releases will be provided to all appropriate locations.