FEDERAL EMERGENCY MANAGEMENT AGENCY
Region II
Jacob K. Javits Federal Building
26 Federal Plaza, Room 1337
New York, New York 10278-0002

December 17, 2002

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 4, 2002, Plume Exposure Pathway Exercise of the offsite radiological emergency response plans specific to the Oyster Creek Nuclear Power Station. The State of New Jersey participated in this exercise, as well as Ocean County of New Jersey, including six risk municipalities. 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 Jersey.

No Deficiencies were observed during the June 4, 2002 exercise.

Based on the results of the June 4, 2002 exercise, it has been determined that the offsite radiological emergency response plans for the State of New Jersey, and the affected local jurisdictions, specific to the Oyster Creek Nuclear Power Station, 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 regarding this matter, please contact Robert Reynolds, FEMA Region II Regional Assistance Committee Chair at (212) 680-3621.

Sincerely,

Joseph Picciano
Acting Regional Director

Ccs: Vanessa E. Quinn, FEMA Headquarters
Patricia C. Tenorio, FEMA Headquarters
Kathy Halvey Gibson, NRC Headquarters
Robert J. Bores, NRC Region I

Enclosure

FINAL
EXERCISE REPORT

OYSTER CREEK NUCLEAR GENERATING STATION

Licensee: AmerGen

Exercise Date: June 4, 2002

Report Date: November 1, 2002

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION II
26 Federal Plaza
New York, New York 10278

TABLE OF CONTENTS

List of Appendices

List of Tables

I. EXECUTIVE SUMMARY

On June 4, 2002, an exercise was conducted in the 10-mile plume exposure pathway emergency planning zone (EPZ) around the Oyster Creek Nuclear Generating Station (OCNGS) 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 (RERPs) and procedures.

The most recent full-scale exercise at this site was conducted on October 22, 1997. The qualifying emergency preparedness exercise was conducted on March 16, 1982.

A full-scale exercise was scheduled and planned for demonstration on October 5, 1999, but participation in the exercise was limited due to the effects of Tropical Storm Floyd. The full complements of State, County, and municipal resources were not available to support the exercise and participate in scenario play as required.

On September 28, 1999, the State requested that FEMA postpone evaluation of the State Emergency Operations Center, the Emergency News Center, Ocean County Emergency Operations Center), and six municipal Emergency Operation Centers (Boroughs of Barnegat Light, Harvey Cedars, Ship Bottom, and Surf City and the Townships of Long Beach and Stafford) due to continuing disaster response and recovery operations for Tropical Storm Floyd (FEMA 1295-DR-NJ). FEMA and the State agreed on September 29, 1999, to proceed with a modified exercise.

On March 3, 2000 the State requested that FEMA grant a one-time exemption from demonstration for all objectives that were scheduled to be included in the biennial exercise, but were not demonstrated on October 5, 1999. FEMA approved this request on June 26, 2000.

A full-scale exercise was again scheduled and planned for demonstration on October 16, 2001, but was postponed to June 4, 2002, after the terrorist attacks in September 2001. The full complements of State, County and municipal resources were not available in October to support the exercise and participate in scenario play as required.

A successful full-scale exercise involving State agencies, including the State Emergency Operations Center (SEOC), was conducted at the Salem/Hope Creek nuclear plants on March 19, 2002. For the June 4, 2002, exercise at OCNGS, the State provided a control cell at the SEOC to interface with participating State and County organizations. All local organizations participated as originally planned for the October 16, 2001, exercise.

FEMA wishes to acknowledge the efforts of the many individuals in the State of New Jersey, Ocean County, and the following risk municipalities who participated in this

exercise: the Boroughs of Barnegat Light, Harvey Cedars, Ship Bottom, and Surf City and the Townships of Long Beach and Stafford.

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:

- *EV-2 School Interviews*: Conducted July 23-24, 2001, at the following locations:

  Ambassador Christian Academy
  Central Regional Middle School
  Central Regional High School
  Island Heights Elementary School
  Lacey Middle School
  Lighthouse Christian Academy
  McKinley Avenue Elementary School
  Ocean Gate Elementary School
  Oxycocus Elementary School
  Seaside Park Elementary School
  St. Joseph's Elementary School
  Waretown Elementary School

- *School Evacuation Bus Run:* Conducted on July 24, 2001, at Seaside Park Elementary School;

- *General Population Evacuation - Transportation Dependent:* Conducted on July 27, 2001, at the Lakehurst Naval Air Warfare Center;

- *Congregate Care Center:* Conducted on July 17, 2001, at Pinelands Middle School;

- *Reception Center:* conducted on August 8, 2001 at Lakewood Middle School;

- *Hearing Impaired:* Conducted on September 4-6, 2001, in Barnegat Township, Lacey Township, and South Toms River Borough;

- *Route Alerting:* Conducted on September 5-7, 2001, in Berkeley Township, Ocean Township, and Ocean Gate Borough;

- *Mobility Impaired:* Conducted on September 4-6, 2001, in Beachwood Borough, Dover Township, and Seaside Park Borough;

- *Emergency Worker Decontamination Center:* Conducted on May 21, 2001, at Pinewald Pioneer Volunteer Fire Company;

- *Waterborne Access Control Point:* Conducted on September 11, 2001, at New Jersey State Police, Marine Law Enforcement Bureau, Troop F, Cape Island Marina in Waretown, New Jersey; and

- *MS-1 Drills:* Conducted on September 26, 2001, at Lacey Volunteer First Aid Squad and Toms River Community Memorial Hospital.

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. One ARCA from a prior exercise was resolved.

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 governments' 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 the following 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.

The State of New Jersey formally submitted their RERPs for the OCNGS to FEMA Region II on June 16, 1983. FEMA granted formal approval of the RERPs, under 44 CFR 350, on April 30, 1990.

The most recent full-scale exercise at this site was conducted on October 22, 1997. The qualifying emergency preparedness exercise was conducted on March 16, 1982. A partial-scale exercise was conducted on October 5, 1999 (see the Executive Summary in the Narrative Summary Report, Oyster Creek Nuclear Generating Station, November 1, 2002, for details).

A REP exercise was conducted on June 4, 2002, 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 OCNGS. 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 that 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 4, 2002, exercise to test the offsite emergency response capabilities in the area surrounding the OCNGS. This section of the exercise report includes a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities that 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 OCNGS, located on a 1,416 acre plot in both Lacey and Ocean Townships, Ocean County, New Jersey, is owned and operated by AmerGen. The facility is approximately 9.5 miles south of Dover Township, New Jersey; 38 miles north of Atlantic City, New Jersey; and 55 miles east of Philadelphia, Pennsylvania.

The permanent population of the 10-mile EPZ, as determined by using 1990 census data, is approximately 99,220, which, combined with a seasonal influx of 63,731, results in a total peak population of 162,951. (Note: The official 2000 census data were not available at the time this report was developed.) Continuing suburban and commercial expansion of the area will increase both the population and amount of land used for residential and commercial purposes. It is anticipated that the population of this area will increase by approximately 27 percent in the next twenty years. The majority of the summer seasonal increase is in the Barnegat Bay and Ocean waterfront areas. The northern edge of the OCNGS 10-mile EPZ extends approximately one mile into Dover Township. The township's northern border is approximately 4.5 miles from Highway 37.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the OCNGS exercise on June 4, 2002, and related out-of-sequence demonstrations.

FEDERAL AGENCIES

Lakehurst Naval Air Warfare Center
U. S. Coast Guard
U. S. Department of Transportation
U. S. Environmental Protection Agency
U. S. Nuclear Regulatory Commission

STATE OF NEW JERSEY

New Jersey Bureau of Nuclear Engineering
New Jersey Office of Emergency Management
New Jersey State Police
New Jersey Transit

OCEAN COUNTY

Ambassador Christian Academy
Central Regional High School
Central Regional Middle School
Central Regional School District
Island Heights Elementary School
Lacey Middle School
Lakewood Elementary School
Lakewood Middle School
Lighthouse Christian Academy
McKinley Avenue Elementary School
Ocean County Office of Emergency Management
Ocean County Sheriff's Department
Ocean County Transportation Department
Ocean Gate Elementary School
Oxycocus Elementary School
Pinelands Elementary School
Pinelands Middle School
Seaside Park Elementary School
St. Joseph's Elementary School
Waretown Elementary School

RISK JURISDICTIONS

Barnegat Township
Beachwood Borough
Berkeley Township
Borough of Barnegat Light
Borough of Harvey Cedars
Borough of Ship Bottom
Borough of Surf City
Dover Township
Lacey Township
Little Egg Harbor Township
Long Beach Township
Ocean Gate Borough
Ocean Township
Seaside Park Borough
South Toms River Borough
Stafford Township

PRIVATE/VOLUNTEER ORGANIZATIONS

American Red Cross – Chapter Headquarters – Tinton Falls, New Jersey
American Red Cross (Jersey Coast Chapter)
Bayville Volunteer First Aid Squad
Beechwood Volunteer First Aid Squad
Emergency Alert System Radio Station – WRAT
Four Seasons Senior Citizens Community
Great Bay Volunteer Ambulance Company
Help in Emergencies for Livestock and Pets (HELP)
Lacey Volunteer First Aid Squad
Lakewood Emergency Medical Services
Lakewood Fire Department HAZ MAT Company
Lakewood Volunteer Fire Department
Lakewood Volunteer First Aid Squad
Oyster Creek Nuclear Generating Station
Pinewald Pioneer Volunteer Fire Company
Radio Amateur Civil Emergency Services (RACES)
Ship Bottom Volunteer Fire Company
Toms River Community Memorial Hospital
Tri-Boro Volunteer First Aid Squad

C. Exercise Timeline

Table 1, on the following page, presents the time at which key events and activities occurred during the OCNGS exercise on June 4, 2002. Also included are times that notifications were made to the participating jurisdictions/functional entities.

TABLE 1. EXERCISE TIMELINE

New Jersey State and County Facilities

DATE AND SITE: June 4, 2002 – Oyster Creek Nuclear Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken						
		NJBNE-EOF	NJBNE-FCP	ENC	EAS Radio Station WRAT	Ocean County EOC	Ocean County FMT	State FMT
Unusual Event								
Alert	1720	N/A	N/A	N/A	N/A	1740	1754	1754
Site Area Emergency	1903	1903	1908	1903		1915	1911	1911
General Emergency	1948	1948	1954	2000		2000	2000	2000
Simulated Rad. Release Started	1948	1948	1954	1955		2003		
Simulated Rad. Release Terminated	N/A	N/A	N/A					
Facility Declared Operational		1825	1822	1912		1820	1840	1840
Governor's Declaration of State of Emergency		2036		2020		2020		
Exercise Terminated		2205	2212	2235		2200	2215	2215
1st Precautionary Action: Closed State beaches and parks and cleared the bay.		1913						
1st A&N Sequence Decision: SAE with no				1928	1920	1922		
1st Siren Activation				1928	1928	1928		
1st EAS or EBS Message Broadcast				1928	1931	1931		
2nd A&N Sequence Decision: Evacuation/ Shelter		2040		2026	2026	2026	2100	2100
2nd Siren Activation				2032	2032	2032	2100	2100
2nd EAS or EBS Message Broadcast				2037	2037	2037	2100	2100
KI Administration Decision:		2036	2055		N/A	2035		

TABLE 1. EXERCISE TIMELINE

New Jersey State and County Facilities

DATE AND SITE: June 4, 2002 – Oyster Creek Nuclear Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken					
		Borough of Ship Bottom EOC	Long Beach EOC	Borough of Surf City EOC	Borough of Barnegat Light EOC	Borough of Harvey Cedars EOC	Stafford Township EOC
Unusual Event		N/A	N/A	N/A	N/A	N/A	N/A
Alert	1720	1754	1858 fax; 1846 phone	1743	1820	1754	1844
Site Area Emergency	1903	1922	1926	1923	1925	1923	1921
General Emergency	1948	2009	2013	2009	2010	2010	2011
Simulated Rad. Release Started	1948	2033	2030	2033	2032	2035	2030
Simulated Rad. Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1815	1910	1815	1845	1814	1900
Governor's Declaration of State of Emergency		2053	2101	2053	2059	2102	2059
Exercise Terminated		2155	2154	2055	2200	2147	2148
1st Precautionary Action: Closed State beaches and parks and cleared the bay.							
1st A&N Sequence Decision: SAE with no PAD		1935	1942	1931	1932	1920	1934
1st Siren Activation		1928	1928	1928	1928	1928	1928
1st EAS or EBS Message Broadcast		1931	1931	1931	1931	1931	1931
2nd A&N Sequence Decision: Evacuation/ Shelter		2033	2036	2024	2036	2024	2048
2nd Siren Activation		2032	2032	2032	2032	2032	2032
2nd EAS or EBS Message Broadcast		2037	2037	2037	2037	2037	2037
KI Administration Decision:		2009	2013	2009	2010	2010	2011

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 October 16, 2001, exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the OCNGS.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in the 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

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 OF RESULTS OF EXERCISE EVALUATION

DATE AND SITE: June 4, 2002 – Oyster Creek Nuclear Generating 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	32	33
STATE OF NEW JERSEY																																	
Dose Assessment (NJBNE-EOF)	M	M	M	M			M																										
Field Team Coordination (NJBNE-FCP)			M	M	M	M		M						M																		
State/Field Monitoring Teams	M			M	M	M		M						M																		
Joint Information Center	M	A		M							M	A																				
Emergency Alert System Station				M						M	M																					
OCEAN COUNTY																																	
Emergency Operations Center	A	M	A	M	M					M				M																		
County Field Monitoring Team	M			M	M	M		M						M																		
Emergency Worker Decon. Center		M		M	M																	M										
Reception Center		M		M	M													M														
Congregate Care Center		M		M															M													
General Population Evacuation				M	M										M																	
Hearing Impaired															M																	
Mobility Impaired															M																	
Route Alerting										M																						
School Evacuation				M	M											M																
School Interviews (EV-2 Checklist)																M																
Traffic/Access Control				M	M												M															
Medical Drill					M															M	M											
RISK MUNICIPALITIES																																	
Borough of Barnegat Light	M	M	M	M	M									M																		M
Borough of Harvey Cedars	M	M	M	M	M									M																		M
Long Beach Township	M	M	M	M	M									M																		M
Borough of Ship Bottom	M	M	M	M	M									M																		M
Stafford Township	M	M	M	M	M									M																		M
Borough of Surf City	M	M	M	M	M									M																		M

LEGEND: M = Met (No Deficiency or ARCA(s) assessed and no unresolved prior ARCA(s))
D = Deficiency (ies) assessed
A = ARCA(s) assessed and/or unresolved prior ARCA(s)
N = Not demonstrated
Blank = Not scheduled for demonstration

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 are definitions 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 were assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.

- **Areas Requiring Corrective Action** – 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** – Description of ARCAs assessed during previous exercises that were resolved in this exercise and the corrective actions demonstrated.

- **Prior ARCAs – Unresolved** – Description of ARCAs assessed during prior exercises that were not resolved in this exercise. Included is the reason the ARCAs remain 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 digit indexing number assigned to each issue identified in the exercise.

1. STATE OF NEW JERSEY

1.1 State Emergency Operations Center

In accordance with the extent-of-play agreement, the State Emergency Operations Center (SEOC) was not evaluated during this exercise. An SEOC control cell was established to support exercise play for those organizations that normally interface with the SEOC.

1.2 New Jersey Bureau of Nuclear Engineering

1.2.1 Dose Assessment (Bureau of Nuclear Engineering - Emergency Operations Facility)

a. **MET:** Objectives 1, 2, 3, 4, and 7

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

1.2.2 Field Team Coordination (Bureau of Nuclear Engineering - Forward Command Post)

a. **MET:** Objectives 3, 4, 5, 6, 8, and 14

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:**

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

Issue No.: 43-02-05-A-01

Description: The Emergency Worker Radiological Exposure Record – Attachment 302-9 requires that the serial numbers for the direct-reading dosimeters (DRDs) utilized by the emergency workers are recorded on the Exposure Record Form. Twelve individuals' forms were reviewed and three were incorrect. Three emergency workers included the DRD model number instead of the specific serial numbers. If the DRD calibration or operability had to be verified, the actual device used could not have been determined. (NUREG-0654, K.3.a.)

Recommended Corrective Action: Provide additional training and practice with the Exposure Record Form. In addition, if these forms were reviewed by the New Jersey Bureau of Nuclear Engineering - Forward Command Post (NJBNE-FCP) Supervisor before the emergency worker left the NJBNE-FCP for their assignment, errors might be immediately recognized.

Corrective Action Taken: On September 11, 2002, the the New Jersey Bureau of Nuclear Engineering (NJBNE) conducted Field Monitoring Team (FMT) Training on emergency worker exposure control for a total of 19 (sign-in sheet provided to RAC Chair) emergency workers. The training covered the roles and responsibilities of the Forward Command Post and FMT personnel. The training also covered radiological exposure, dosimetry requirements, dosimetry reading, emergency worker exposure record, dose limits for emergency workers, protective clothing for emergency workers, and use of potassium iodide for emergency workers.

The NJBNE made the recommended changes to its Emergency Worker Radiological Exposure Record - Attachment 302-9 to include a change from Dosimeter # to Dosimeter Serial #. This should eliminate the confusion of recording the DRD model number as opposed to the serial number. A copy of the changed form was provided to the RAC Chair.

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs RESOLVED:** NONE

f. **PRIOR ARCAs UNRESOLVED:** NONE

1.2.3 State Radiological Field Monitoring Team

a. **MET:** Objectives 1, 4, 5, 6, 8, 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 Joint Information Center

a. **MET:** 1, 4, and 11

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:**

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

Issue No.: 43-02-02-A-02

Description: Facility is inadequate to support the type of media response that could be expected from an emergency activity at OCNGS. Additionally, telephone support for media representatives does not exist in the present facility, and the availability of audiovisual equipment to support media briefings is inadequate. (NUREG-0654, G.3.a)

Recommended Corrective Action: Identify an additional facility that could handle a response by 100-150 media representatives and that provides adequate audiovisual support for media briefings.

Schedule for Corrective Actions: At the 2003 OCNGS REP Biennial Exercise.

OBJECTIVE 12: EMERGENCY INFORMATION – MEDIA

Issues No.: 43-02-12-A-03

Description of Issue: The facility was activated at 1815, but the first briefing was not started until 1941, one hour and 26 minutes later. The initial briefing was delayed by a problem with the Utility's notification system (pagers), which delayed the arrival of the Utility's representatives assigned to the Joint Information Center (JIC). In addition, the Utility staff first focused upon preparing news releases upon arrival at the facility. For example, a news release announcing an Alert was issued at 1909 (actual declared time 1720), and another announcing a Site Area Emergency (SAE) was issued at 1913 (declared time 1903). Preparation of these news releases delayed the preparations for the initial press briefing, which did not commence until one hour and 41 minutes after the State representatives at the JIC received notification of the Alert and 39 minutes after notification of the SAE.

The first press briefing was halted at approximately 1955 when the Utility representative facilitating the briefing received an indication of a change in status at the plant. A General Emergency was declared at 1948. The Utility

representative announced to the press that they would have to stop the press briefing because of the change in status and that they would be back within 25 minutes (by 2020) to update the press. The briefing was halted and the State and Utility representatives returned to their internal work areas within the JIC to gather details; however, the second press briefing started at 2050, not at 2020, as promised. (NUREG-0654, G.4.a & G.4.b)

Recommended Corrective Action: Conduct an initial media briefing in a timely manner and develop a procedure to handle breaking news when briefings are underway.

Schedule of Corrective Actions: At the 2003 OCNGS REP Biennial Exercise.

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

1.4 Emergency Alert System Station

a. **MET:** 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

2. RISK JURISDICTIONS

2.1 Ocean County

2.1.1 Ocean County Emergency Operations Center

a. **MET:** 2, 4, 5, 10, and 14

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:**

OBJECTIVE 1: MOBILIZATION OF EMERGENCY PERSONNEL

Issue No.: 43-02-01-A-04

Description: A Public Information Officer (PIO) did not respond to the Joint Information Center (JIC) as required in the Ocean County Radiological Emergency Response Plan Annex. (NUREG-0654, E.2)

Recommendation: Have the Ocean County Director of Emergency Management assure and verify that the County PIO has responded to the JIC when mobilized.

Schedule of Corrective Actions: At the 2003 OCNGS REP Biennial Exercise.

OBJECTIVE 3: DIRECTION AND CONTROL

Issue No.: 43-02-03-A-05

Description: The Ocean County Office of Emergency Management Communications Officer, after auto-faxing the first emergency alert system message to the six risk municipalities, failed to do the roll call radio contact to inform them of the message. (NUREG-0654, A.2.a)

Recommendation: Further train the Communications Officer on the correct notification procedures. The procedures for the Communications Officer for this action may need further clarification in the standard operation procedures.

Schedule of Corrective Actions: At the 2003 OCNGS REP Biennial Exercise.

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.1.2 Ocean County Radiological Field Monitoring Team

a. **MET:** Objectives 1, 4, 5, 6, 8, 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 Emergency Worker Decontamination Center – May 21, 2001

[Pinewald Pioneer Volunteer Fire Company]

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

2.1.4 Reception Center – August 8, 2001

[Lakewood Middle School]

a. **MET:** Objectives 2, 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

2.1.5 Congregate Care Center – July 17, 2001
[Pinelands Middle School]

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

2.1.6 General Population Evacuation – Transportation Dependent – July 27, 2001
[Lakehurst Naval Air Warfare Center]

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

2.1.7 Hearing Impaired – September 4-6, 2001
[Barnegat Township, Lacey Township, and South Toms River Borough]

a. **MET:** Objective 15

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.1.8 Mobility Impaired – September 4-6, 2001
[Beachwood Borough, Dover Township, and Seaside Park Borough]

a. **MET:** Objective 15

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.1.9 Route Alerting – September 5-7, 2001
[Berkeley Township, Ocean Township, and Ocean Gate Borough]

a. **MET:** Objective 10

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.1.10 School Evacuation Bus Run – July 24, 2001
[Seaside Park Elementary School]

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

2.1.11 School Interviews – July 23-24, 2001

[Ambassador Christian Academy, St. Joseph's Elementary School, Central Regional Middle School, Lacey Township Middle School, McKinley Avenue Elementary School, Oxycocus Elementary School, Lighthouse Christian Academy, Waretown Elementary School, Seaside Park Elementary School, Central Regional High School, Ocean Gate Elementary School, and Island Heights Elementary School]

a. **MET:** Objective 16 and 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

2.1.12 Traffic/Access Control Point – September 11, 2001

[Waterborne – New Jersey State Police, Troop F]

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

2.1.13 Medical Drill – September 26, 2001

[Lacey Volunteer First Aid Squad and Toms River Community Memorial Hospital]

a. **MET:** Objectives 5, 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

2.2 OCEAN COUNTY RISK MUNICIPALITIES

2.2.1 Borough of Barnegat Light

a. **MET:** Objectives 1, 2, 3, 4, 5, 14, and 33

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.2.2 Borough of Harvey Cedars

a. **MET:** Objectives 1, 2, 3, 4, 5, 14, and 33

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED**: NONE

2.2.3 Long Beach Township

a. **MET:** Objectives 1, 2, 3, 4, 5, 14, and 33

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.2.4 Borough of Ship Bottom

a. **MET:** Objectives 1, 2, 3, 4, 5, 14, and 33

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** ONE

Issue No.: 43-97-03-A-01

Description: The Ship Bottom Emergency Management Coordinator (EMC) stated that he never received (by phone, radio, or follow-up facsimile) any notification of the protective action decision made at 2053. However, the Ship Bottom EMC never contacted the Ocean County Emergency Operations Center (OCEOC) to inquire about the status of the emergency, even though he had been advised about the General Emergency. (NUREG-0654, A.2.a)

Corrective Action Demonstrated: During the Alert phase, Fax Number 14 was received, explaining the conditions related to an emergency classification level upgrade (Alert to Site Area Emergency). The message was handwritten and not clearly readable. The Ship Bottom EMC requested clarification from the OCEOC. Then, the OCEOC replied both through radio and facsimile communication with clarification. This demonstrates command and control capability to resolve communication issues.

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.2.5 Stafford Township

a. **MET:** Objectives 1, 2, 3, 4, 5, 14, and 33

b. **DEFICIENCY:** NONE

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

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.2.6 Borough of Surf City

a. **MET:** Objectives 1, 2, 3, 4, 5, 14, and 33

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 that were used in this report.

AOG	Augmented Off-Gas
ARCA	Area Requiring Corrective Action
ARM	Area Radiation Monitors
ATWS	Anticipated transient Without Scram
A&N	Alert and Notification
CFM	Cubic Feet per Minute
CFR	Code of Federal Regulations
CHRRMS	Containment High Range Radiation Monitoring System
DOT	U.S. Department of Transportation
DRD	Direct-Reading Dosimeter
EAS	Emergency Alert System
EBS	Emergency Broadcast System
ECL	Emergency Classification Level
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EMC	Emergency Management Coordinator
EMITS	Emergency Management Information Tracking System
EMRV	Electro-motive Relief Valve
ENC	Emergency News Center
EPA	U. S. Environmental Protection Agency
EPR	Electronic Pressure Regulator
EPZ	Emergency Planning Zone
ERF	Emergency Response Facility
ERO	Emergency Response Organization
ERPA	Emergency Response Planning Area
FCP	Forward Command Post
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
GE	General Emergency
ICF	ICF Consulting, Inc.
JIC	Joint Information Center
KI	Potassium Iodide

LED	Light Emitting Diode
mR	Milliroentgen(s)
MS	Medical Services
MSIV	Mainstream Isolation Valves
NAWC	Lakehurst Naval Air Warfare Center
NJ	New Jersey
NJBNE	New Jersey Bureau of Nuclear Engineering
NJBNE-EOF	New Jersey Bureau of Nuclear Engineering – Emergency Operations Facility
NJBNE-FCP	New Jersey Bureau of Nuclear Engineering – Forward Command Post
NJOEM	New Jersey Office of Emergency Management
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
OCEOC	Ocean County Emergency Operations Center
OCMEOCs	Ocean County Municipality Emergency Operations Centers
OCNGS	Oyster Creek Nuclear Generating Station
OCOEM	Ocean County Office of Emergency Management
OEM	Office of Emergency Management
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PIO	Public Information Officer
R	Roentgen
RAC	Regional Assistance Committee
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
R/hr	Roentgen(s) per hour
SAE	Site Area Emergency
SBOEM	Ship Bottom Office of Emergency Management
SEOC	State Emergency Operations Center
SFA	State Field Activities
SGTS	Standby Gas Treatment System
SM	Shift Manager
SOP	Standard Operating Procedure
TL	Team Leader

TLD	Thermoluminescent Dosimeter
WRAT	EAS Radio Station

APPENDIX 2
EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Oyster Creek Nuclear Generating Station exercise on June 4, 2002. Evaluator Team Leaders are indicated by the letters "TL" enclosed in parentheses after their names. The organization which each evaluator represents is indicated by the following abbreviations:

FEMA	Federal Emergency Management Agency
NRC	U.S. Nuclear Regulatory Commission
EPA	U.S. Environmental Protection Agency
DOT	U.S. Department of Transportation
ICF	ICF Consulting, Inc.

	NAME	ORGANIZATION
Exercise Oversight	R. Reynolds	FEMA

BIENNIAL EXERCISE

EVALUATION SITE	EVALUATOR	ORGANIZATION
STATE OF NEW JERSEY		
NJBNE-EOF	R. Black	ICF
	J. Keller (TL)	ICF
NJBNE-FCP	D. Duncan	ICF
	S. O'Neill (TL)	FEMA
Field Monitoring Team	J. Eng (TL)	EPA
Joint Information Center (JIC)	M. Beeman (TL)	FEMA
	S. Nelson	ICF
EAS Radio Station (WRAT)	S. Nelson	ICF

BIENNIAL EXERCISE (CONTINUED)

EVALUATION SITE	EVALUATOR	ORGANIZATION
OCEAN COUNTY		
Ocean County EOC	B. Hasemann (TL)	FEMA
	B. Jones	FEMA
Field Monitoring Team	C. Gordon	NRC
MUNICIPALITIES		
Borough of Barnegat Light EOC	D. Petta	DOT
Borough of Ship Bottom EOC	K. Reed (TL)	FEMA
Borough of Surf City EOC	K. McCarroll	FEMA
Borough of Harvey Cedars EOC	P. Malool	FEMA
Long Beach Township EOC	J. Sutton	FEMA
Stafford Township EOC	D. Moffet	FEMA

OUT-OF-SEQUENCE EVALUATIONS

EVALUATION SITE	EVALUATOR	ORGANIZATION
School Interviews		
Ambassador Christian Academy	B. Hasemann	FEMA
Central Regional High School	B. Hasemann	FEMA
Central Regional Middle School	B. Hasemann	FEMA
Island Heights Elementary School	B. Hasemann	FEMA
Lacey Middle School	B. Hasemann	FEMA
Lighthouse Christian Academy	B. Hasemann	FEMA
McKinley Avenue Elementary School	B. Hasemann	FEMA
Ocean Gate Elementary School	B. Hasemann	FEMA
Oxycocus Elementary School	B. Hasemann	FEMA
Seaside Park Elementary School	B. Hasemann	FEMA
St. Joesph's Elementary School	B. Hasemann	FEMA
Waretown Elementary School	B. Hasemann	FEMA
School Bus Run		
Seaside Park Elementary School	B. Hasemann	FEMA

OUT-OF SEQUENCE EVALUATIONS (Continued)

EVALUATION SITE	EVALUATOR	ORGANIZATION
Access Control Point		
New Jersey State Police, Troop F	B. Hasemann	FEMA
Emergency Worker Decon Center		
Pinewald Volunteer Fire Department	B. Hasemann	FEMA
	K. Reed	FEMA
Hearing Impaired		
Barnegat Township	B. Hasemann	FEMA
Lacey Township	B. Hasemann	FEMA
South Toms River Borough	B. Hasemann	FEMA
Mobility Impaired		
Beachwood Borough	B. Hasemann	FEMA
Dover Township	B. Hasemann	FEMA
Seaside Park Borough	B. Hasemann	FEMA
Reception Center		
Lakewood Middle School	B. Hasemann	FEMA
Congregate Care Center		
Pinelands Middle School	B. Hasemann	FEMA
Route Alerting		
Berkeley Township	B. Hasemann	FEMA
Ocean Gate Borough	B. Hasemann	FEMA
Ocean Township	B. Hasemann	FEMA
Transportation Dependent – General Population		
Lakehurst Naval Air Warfare Center	B. Hasemann	FEMA

OUT-OF SEQUENCE EVALUATIONS (Continued)

EVALUATION SITE	EVALUATOR	ORGANIZATION
MS-1 Medical Drill		
Toms River Community Memorial Hospital	R. Black	ICF
Lacey Volunteer First Aid Squad	S. Nelson	ICF

APPENDIX 3
EXTENT-OF-PLAY AGREEMENT

OBJECTIVE 1: MOBILIZATION OF EMERGENCY PERSONNEL

New Jersey Office of Emergency Management (NJOEM) and New Jersey Bureau of Nuclear Engineering (NJBNE) radiological emergency response personnel live in various areas of the State. Select elements of both organizations will respond within 60 minutes following the Alert declaration. Some NJBNE will be present at work locations prior to the commencement of the exercise due to out-of-sequence demonstrations.

Locations Observed: NJBNE-EOF, NJBNE-FCP, FMTs, ENC, OCEOC, and OCMEOCs (at Borough of Barnegat Light, Borough of Harvey Cedars, Long Beach Township, Borough of Ship Bottom, Stafford Township, and Borough of Surf City).

Date: June 4, 2002

OBJECTIVE 2: FACILITIES-EQUIPMENT, DISPLAYS AND WORK ENVIRONMENT

Generators provide backup power at municipal EOCs within the 10-mile EPZ. The ENC has a generator to provide backup power. Radiological monitoring points and population by evacuation area will not be displayed on maps at the County or municipal EOCs, as accident assessment, by State statute, is a State responsibility. An automated information system - Emergency Management Information Tracking System "EMITS" - will be used as an event log/status board at the SEOC and ENC. Ingestion Pathway 50-mile EPZ agricultural information is on file at the SEOC. An Light Emitting Diode (LED) sign system will be used to advise and update SEOC staff of the ECL.

Locations Observed: OCEOC, OCMEOCs (at the six observed sites), ENC, NJBNE-EOF, and NJBNE-FCP.

Date: June 4, 2002

OBJECTIVE 3: DIRECTION AND CONTROL

The EMC at the Ship Bottom EOC will be aware of ECL and PADs in a timely manner.

Locations Observed: OCEOC, OCMEOCs (at the six observed sites), NJBNE-EOF, and NJBNE-FCP.

ARCA To Be Resolved: Ship Bottom OEM 43-97-03-A-1

Date: June 4, 2002

OBJECTIVE 4: COMMUNICATIONS

The telephone is the primary means of communications for all but the FMTs. Radio is the backup method of communications. At least one of the radio systems available at the EOCs as backup will be utilized during the exercise.

Locations Observed: OCEOC, OCMEOCs (at the six observed sites), NJBNE-EOF, ENC, NJBNE-FCP, and FMTs.

Date: June 4, 2002

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

One emergency worker exposure control kit will be utilized in each municipal EOC. No thermoluminescent dosimeters (TLDs) will be distributed during this exercise, but their location and recording methodology will be explained to the evaluator. County and municipal coordinators will show the evaluator a Standard Operating Procedure (SOP) regarding TLD distribution and record keeping. EMCs who distribute more than the minimum requirement of emergency worker kits will not be penalized.

"Maximum authorized mission exposure limits" may be referred to as "mission dose," "dose limit," or "turn back value." The New Jersey limit is 1.25 R. This is applicable to all demonstrations involving Objective 5. DRDs in the emergency worker exposure control kits contain 0-20 R and 0-200 mR dosimeters. Inspection dates (including leak test information) for this instrumentation is on file at the NJOEM Radiation Laboratory and will be visually inspected and evaluated by FEMA staff prior to the exercise. Potassium iodide (KI) will not be distributed. It is stored at the State Office of Emergency Management (OEM), New Jersey Bureau of Nuclear Energy – Forward Command Posts (NJBNE-FCPs), and at the county OEM until an actual incident.

Locations Observed: OCEOC, OCMEOCs (at the six observed sites), NJBNE-FCP, FMTs, and state field activities (SFA).

Date: June 4, 2002

OBJECTIVE 6: FIELD RADIOLOGICAL MONITORING-AMBIENT RADIATION MONITORING

The state will provide two field monitoring teams (FMTs) while the County will provide one FMT. The teams will not be integrated during the exercise. All FMTs will be under operational control of the State FCP. Only one FMT from the State and the County will be evaluated.

During the field demonstration, gamma exposure rates will be measured in accordance with NJ SOP-302. The County FMT will use a check source borrowed from the State NJBNE.

Locations Observed: NJBNE-FCP and FMTs.

OBJECTIVE 7: PLUME DOSE PROJECTION

Locations Observed: NJBNE-EOF

Date: June 4, 2002

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

Field team instrument checkout and sampling of airborne radioiodine and particulates will be demonstrated during the afternoon of June 4, 2002. This will be out-of-sequence with the exercise at the NJBNE-FCP in Berkeley Township.

Locations Observed: NJBNE-FCP and FMTs.

Date: June 4, 2002

OBJECTIVE 10: ALERT AND NOTIFICATION

Locations Observed: EAS Radio Station WRAT

SIRENS – Sirens will be simulated during the exercise. No sirens will be sounded. The EAS radio message (Radio Station WRAT) will not be broadcast.

Locations Observed: OCEOC.

ROUTE ALERTING – Route Alerting will be demonstrated at Berkeley Township, Ocean Gate Borough, and Ocean Township. The demonstration will take place out-of-sequence.

Date: September 5-7, 2001

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

Locations Observed: ENC.

Date: June 4, 2002

OBJECTIVE 12: EMERGENCY INFORMATION – MEDIA

The "EMITS" system serves as an automated status board in the NJ Room at the ENC.

Locations Observed: ENC.

Date: June 4, 2002

OBJECTIVE 13: EMERGENCY INFORMATION – RUMOR CONTROL

Locations Observed: N/A

Date: June 4, 2002

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

New Jersey's RERP Plan does not include KI distribution to the general public. There will be a discussion of the need for emergency workers to take KI, though levels of radioiodine need not exceed the Protective Action Guides (PAGs).

Locations Observed: OCEOC, OCMEOCs (at the six observed sites), FMTs, and NJBNE-FCP.

Date: June 4, 2002

OBJECTIVE 15: IMPLEMENTATION OF PROTECTIVE ACTIONS – SPECIAL POPULATIONS [MOBILITY IMPAIRED]

Evacuation of mobility-impaired persons will be demonstrated out-of-sequence with the exercise at Beachwood Borough, Dover Township, and Seaside Park Borough. The FEMA evaluator will review the list of mobility-impaired persons.

Date: September 5-7, 2001

TRANSIT DEPENDENT BUS RUN – Evacuation of transit-dependent persons will take place out-of-sequence. One NJ Transit bus with a State Police escort will demonstrate transit-dependent evacuation. The demonstration will initiate at the Lakehurst Naval Air Warfare Center (NAWC). The Beachwood route will be demonstrated as per SOP-209.

Date: July 27, 2001

HEARING-IMPAIRED NOTIFICATION – Hearing-impaired notification will be demonstrated out-of-sequence by Barnegat Township, Lacey Township, and South Toms River Borough. A copy of the list of hearing-impaired persons will be reviewed by the FEMA evaluator.

Date: September 4-6, 2001

OBJECTIVE 16: IMPLEMENTATION OF PROTECTIVE ACTIONS – SCHOOLS

School Superintendent/Principal interviews will take place out-of-sequence with the exercise at the following locations:

Ambassador Christian Academy, St. Joseph's Elementary School, Central Regional Middle School, Lacey Middle School, McKinley Avenue Elementary School, Oxycocus Elementary School, Lighthouse Christian Academy, Waretown Elementary School, Seaside Park Elementary School, Central Regional High School, Ocean Gate Elementary School, Island Heights Elementary School

Date: July 23 - 24, 2001

A school bus evacuation route demonstration will take place out-of-sequence with the exercise from the Seaside Park Elementary School.

Date: July 24, 2001

OBJECTIVE 17: ACCESS CONTROL

An Access Control Point (waterborne) demonstration will take place out-of-sequence with the exercise.

Date: September 11, 2001

OBJECTIVE 18: RECEPTION CENTER MONITORING, DECONTAMINATION, AND REGISTRATION

The setup of the facility will be observed by the FEMA evaluator. A portal monitor will be used for monitoring. At least two vehicles will be monitored and decontaminated.

Plastic sheeting will be available, but will not be spread on the floor.

Locations Observed: Lakewood Middle School.

Date: August 8, 2001

OBJECTIVE 19: CONGREGATE CARE

A Congregate Care Center will be demonstrated out-of-sequence with the exercise. The capacity of the facility will be posted.

Locations Observed: Pinelands Middle School

Date: July 17, 2001

OBJECTIVES 20 AND 21: MEDICAL SERVICES- TRANSPORTATION, FACILITIES

The demonstration will take place out-of-sequence with the exercise.

Locations Observed: Lacey First Aid Squad and Toms River Community Memorial Hospital.

Date: September 26, 2001

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

The setup of the facility will be observed by the FEMA evaluator. Plastic sheeting will be available, but will not be spread on the floor. This demonstration will take place out-of-sequence with the exercise.

Locations Observed: Pinewald Pioneer Volunteer Fire Company

Date: May 21, 2001

OBJECTIVE 33: OFF-HOURS EXERCISE OR DRILL

Demonstrate the capability to carry out emergency response functions during an off-hours exercise starting after 1730 hours.

Locations Observed: OCMEOCs (at the six observed sites).

Date: June 4, 2002

APPENDIX 4
EXERCISE SCENARIO SYNOPSIS

The operating crew will be given a turnover and allowed to perform their panel walk-down and take an initial set of logs prior to the biennial exercise start time of 1700 on June 4, 2002.

The initial conditions are as follows:

- Reactor is at 100% power and has been on-line for 215 days;
- A pre-existing problem with fuel rod end welds has caused elevated coolant iodine readings, resetting of the off-gas alarm, and increase of the off-gas trip settings;
- Chemistry samples are being drawn every 4 hours;
- Special control rod pattern is in place to suppress flux in areas of known fuel defects (i.e., control rod 26-31 in group 7, subgroup 1 is fully inserted);
- #1 diesel generator is out of service for 24-month overhaul;
- #1 containment spray system is out of service; and
- Meteorology: Wind direction (from) = 200 degrees
  Wind speed = ~8 miles per hour
  Stability class = D

The scenario begins at 1705 when the reactor electronic pressure regulator (EPR) fails high. The operating crew should take manual control of reactor pressure and restore pressure to the normal band. At 1715, a hydrogen explosion occurs in the augmented off-gas (AOG) building. The building is visibly damaged, but there is no fire or smoke.

The Shift Manager (SM) declares an Alert at approximately 1730 based on EAL P.2, "Known explosion damage to any permanent plant structure."

The station emergency alarm is sounded, a plant page announcement is made indicating the declaration of an Alert, and all on-shift emergency responders report to their emergency response facilities (ERFs). Pager activation is initiated and the emergency response organization (ERO) is activated.

The Radiological Assessment Coordinator responds to the control room and develops a dose protection based on a possible release from the AOG building. The dose projection results are background and no EAL is exceeded based on offsite radiological conditions.

All ERFs are activated by 1830.

At 1850, the nitrogen supply to the drywell fails. This causes mainstream isolation valves (MSIV) to close and a reactor trip on MSIV isolation. On the reactor trip, an anticipated transient without scram (ATWS) occurs and all reactor control rods do not fully insert into the core. The operating crew performs alternate rod insertion and by 1852 all rods are in the core. However, an electro-motive relief valve (EMRV) has stuck partially open (approx. 50%) during the isolation and blowdown. The stuck open EMRV produces increasing drywell temperature and pressure as the primary system blows down to the torus and the torus equalizes with the drywell.

Because of the isolation trip and the ATWS, cladding failure occurred and Containment High Range Radiation Monitoring System (CHRRMS) is reading 2.5E+04 R/hr as the torus equalizes to the drywell.

The Emergency Director declares an Site Area Emergency (SAE) at approximately 1910 based on EAL I.1, "Significant (20%) fuel cladding failure indicated by CHRRMS reading greater than or equal to 2.0E+04 R/hr."

The station emergency alarm is sounded and a SAE announced, but all activities related to a site evacuation will not be conducted.

At 1910 (or later), containment spray valve V-21-5 fails to open when the operating crew attempts to initiate containment spray.

At 1945, a leak develops in a drywell purge penetration. By 1950, drywell pressure is slowly decreasing and reactor building area radiation monitors (ARMs) alarm as the drywell leaks into the reactor building.

The Emergency Reactor declares a General Emergency (GE) based on EAL S.1, "Loss of 2 of 3 fission product barriers with the potential loss of the third."

The station emergency alarm is sounded and a GE is announced, but all activities related to a site evacuation will be simulated and not be conducted.

A dose projection is developed based on an elevated release via the main stack when the drywell leak occurs. The release path is via the standby gas treatment system (SGTS) to the stack. Off-site data provided with the scenario is based on an elevated release.

Wind speed is 8 mph with class "D" meteorological conditions. The release flow rate is 135,000 cfm with 1.15E+07 microcuries per second noble gas, 1.33E+03 microcuries per second iodine and 8.77E+01 microcuries per second particulates.

The appropriate protective action recommendation (PAR) will be to evacuate 0-2 miles full circle; 2-5 miles in sectors N, NNE, and NE; and shelter the remainder of the 10-mile EPZ based on the plant being in a GE and the release duration being longer than the minimum evacuation time. The PAR is discussed with the NJBNE at the EOF and provided to the NJOEM.

Offsite monitoring activities are expanded to confirm and define the extent of the plume.

The exercise will end around 2200 or later when sufficient time has passed to demonstrate the off-site activities.