

# Bureau of Nuclear Engineering

## Nuclear Emergency Preparedness Section



## Annual Update

January 1, 2008 - December 31, 2008

<http://www.nj.gov/dep/rpp/nep>

**State of New Jersey**  
**Department of Environmental Protection**  
**Division of Environmental Safety and Health**

**BUREAU OF NUCLEAR ENGINEERING**  
**NUCLEAR EMERGENCY PREPAREDNESS SECTION**

**ANNUAL UPDATE**  
**January 1, 2008 - December 31, 2008**

**Jon S. Corzine, Governor**  
**Mark N. Mauriello, Acting Commissioner**

March 2009

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## **LIST OF ACRONYMS**

AI	Artificial Island
ARCA	Area Requiring Corrective Action
BCSS	Bureau of Communications and Support Services
BER	Bureau of Environmental Radiation
BNE	Bureau of Nuclear Engineering
BRH	Bureau of Radiological Health
CDAM	Core Damage Assessment Model
CREST	Continuous Radiological Environmental Surveillance Telemetry
DEMA	Delaware Emergency Management Agency
DHS	Department of Homeland Security
DEP	Department of Environmental Protection
ENC	Emergency News Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data System
FCP	Forward Command Post
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
GE	General Emergency
ICS	Incident Command System
IND	Improvised Nuclear Device
IPZ	Ingestion Pathway Zone

## LIST OF ACRONYMS (continued)

JIC	Joint Information Center
MWe	Megawatts (electric)
MWt	Megawatts (thermal)
NEPS	Nuclear Emergency Preparedness Section
NIMS	National Incident Management System
NRC	Nuclear Regulatory Commission
NUMARC	Nuclear Management Resource Council
OCNGS	Oyster Creek Nuclear Generating Station
PAR	Protective Action Recommendation
PAD	Protective Action Decision
PSEG	Public Service Enterprise Group
RASCAL	Radiological Assessment System for Consequence Analysis
RDD	Radiological Dispersal Device
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
ROIC	Regional Operations and Intelligence Center
SAE	Site Area Emergency
SPDS	Safety Parameter Display System
SPOEM	State Police Office of Emergency Management
UE	Unusual Event

## **1.0 INTRODUCTION**

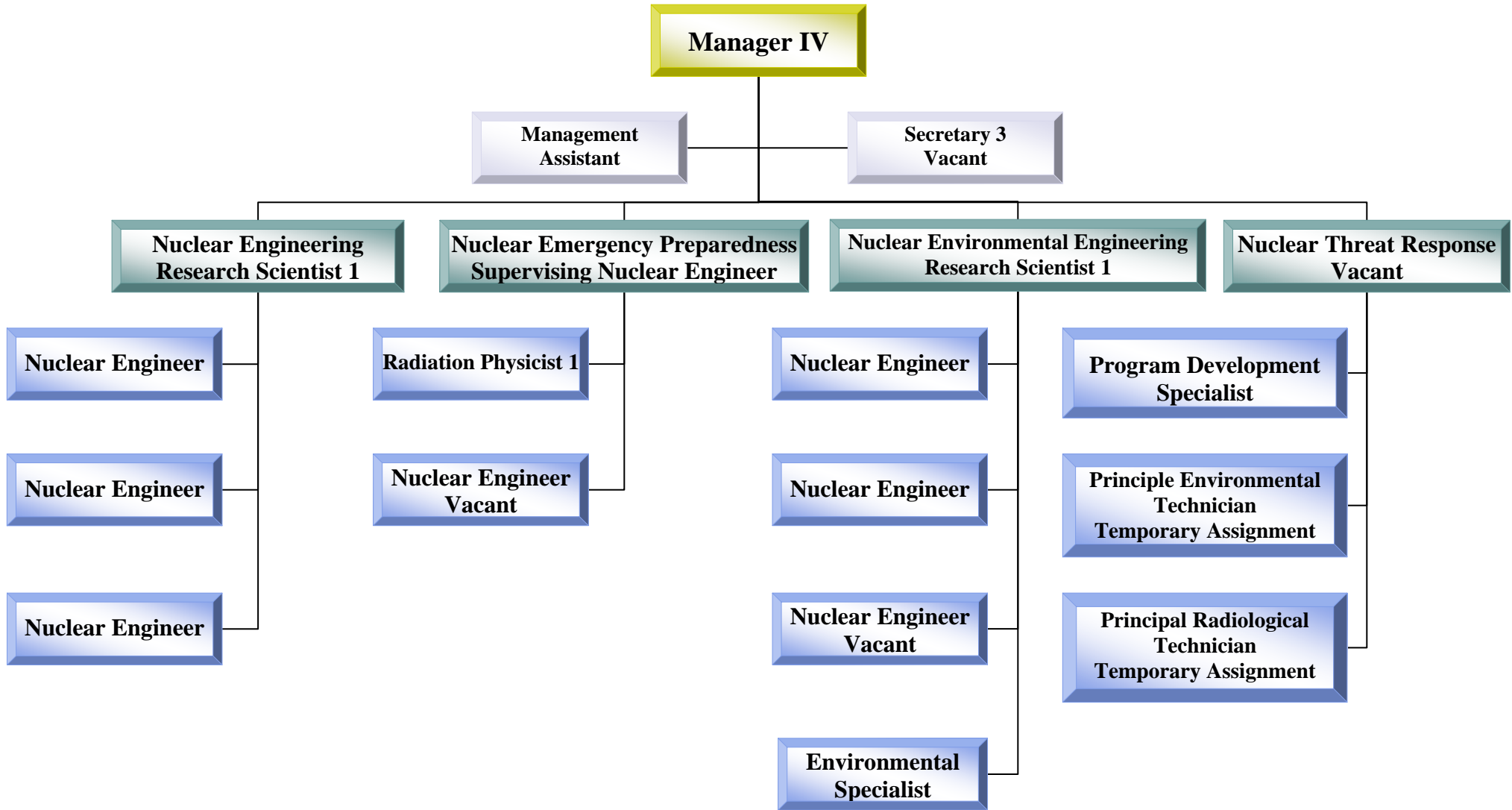
### **1.1 The Nuclear Emergency Preparedness Section**

The State of New Jersey's Radiation Accident Response Act (N.J.S.A. 26:2D-37 et seq.) became effective October 27, 1981. This act provided for the establishment of procedures for implementing protective actions in the event of nuclear emergencies and for the preparation and implementation of a state radiation emergency response plan. The New Jersey Radiological Emergency Response Plan (RERP) for Nuclear Power Plants was developed as a joint effort by the New Jersey Department of Environmental Protection (DEP) and the New Jersey Division of State Police to coordinate and implement an immediate comprehensive state, county and municipal response to a radiological emergency at a nuclear power plant affecting the State of New Jersey. The RERP identifies the DEP as the lead state agency for accident assessment during a nuclear incident, protective action formulation and control of food, water and milk. The DEP is the support agency for evacuation, sheltering and access control, for personnel monitoring and record keeping and for decontamination.

The DEP's responsibilities are addressed on a daily basis by the Nuclear Emergency Preparedness Section (NEPS) of the Bureau of Nuclear Engineering (BNE). NEPS activities include attending to the logistics of nuclear emergency response, developing and implementing training for all nuclear emergency response participants, planning for and initiating nuclear emergency response during exercises and nuclear emergency events, maintaining response facilities and preparing procedures. Most importantly, the NEPS maintains a highly trained organization of staff from throughout the DEP ready to initiate, at a moment's notice, an all-encompassing response to any nuclear power plant emergency affecting New Jersey.

In addition to the NEPS, three other sections operate within the BNE. The Nuclear Engineering Section is responsible for licensing issues and nuclear safety review of plant operations. The Nuclear Environmental Engineering Section is responsible for radiological and environmental monitoring near the nuclear power plants in the state. The Nuclear Threat Response Section is responsible for the real time monitoring of the ambient radiation levels around nuclear generating stations located in New Jersey through the Continuous Radiological Environmental Surveillance Telemetry (CREST). The section is also responsible for security and safeguard issues related to homeland security that affects nuclear generating stations and nuclear materials shipments. Figure 1-1 is an organizational chart of the BNE.

**Figure 1-1  
Bureau of Nuclear Engineering**





## 1.2 Nuclear Power Plants Affecting the State of New Jersey

There are four nuclear power plants located in New Jersey (see Figure 1-2). The Oyster Creek Nuclear Generating Station (OCNGS) is a boiling water reactor located nine miles south of Toms River in the coastal Pine Barrens in Lacey Township, Ocean County. The plant is operated by Exelon Corporation. It has been in commercial operation since December 1969, and operates at a power level of 650 megawatts electric (MWe), 1930 megawatts thermal (MWt).

Public Service Enterprise Group (PSEG) operates three units at its Artificial Island (AI) site in Lower Alloways Creek Township, Salem County. Salem Units 1 and 2 are pressurized water reactors rated at 1090 MWe (3338 MWt) and 1115 MWe (3411 MWt), respectively. The Hope Creek unit is a boiling water reactor rated at 1272 MWe (3840 MWt). Salem Unit 1 has been in commercial operation since June 1977, and Salem Unit 2 has been operational since October 1981. The Hope Creek Unit was approved for commercial operation in February 1987.

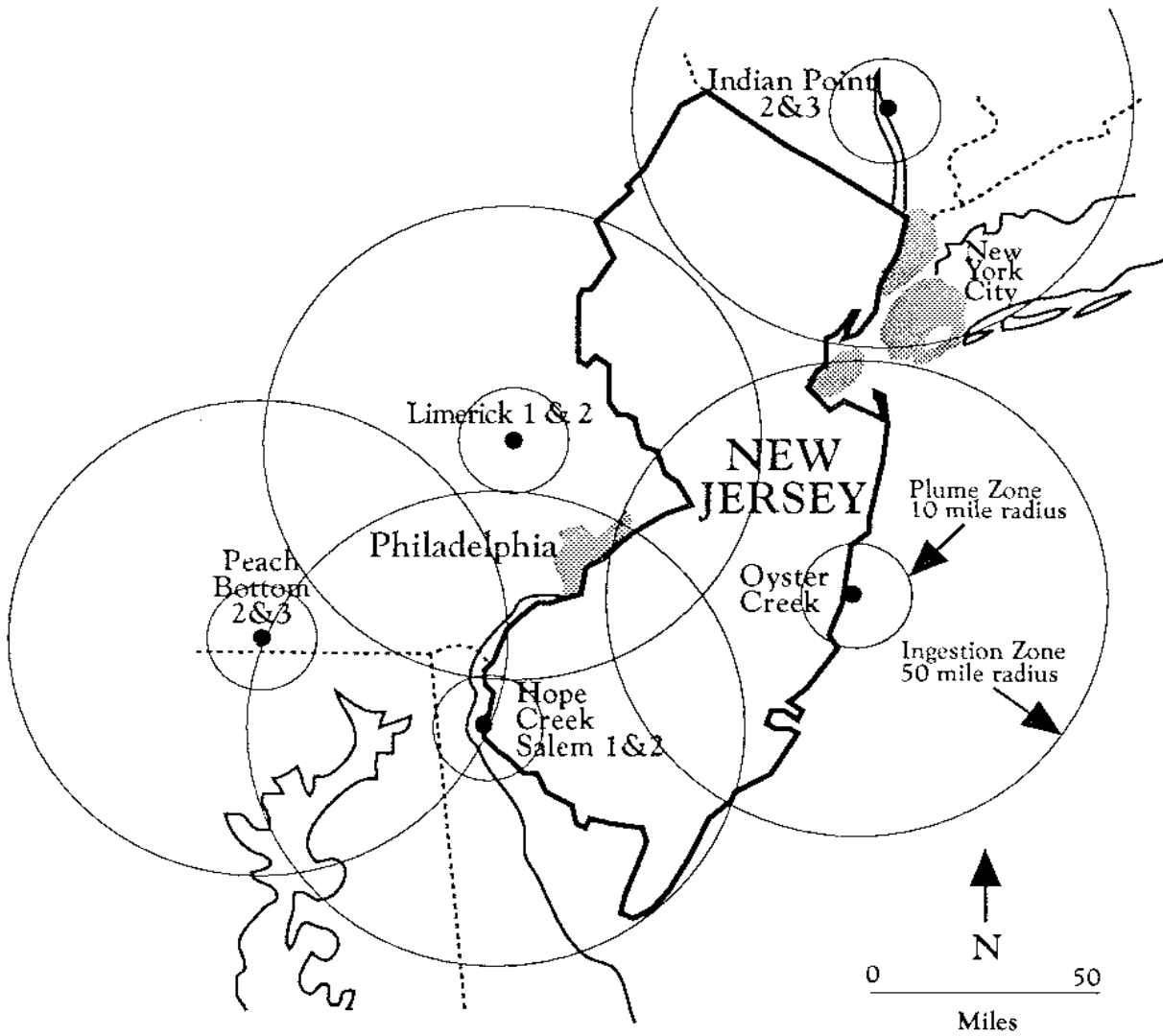
New Jersey also could be affected by an accident at a plant in another state. States which have nuclear power plants within fifty miles of New Jersey state borders are Pennsylvania (Limerick Units 1 and 2, and Peach Bottom Units 2 and 3) and New York (Indian Point Units 2 and 3). See Figure 1-2.

## 1.3 Nuclear Emergency Planning Areas

For the purposes of nuclear emergency planning, two planning areas around nuclear power plants are specifically defined. The Emergency Planning Zone (EPZ) is the circular area around a nuclear power plant with a radius of ten miles. This is the area for which immediate protective actions for the public would be taken in the event of an accidental release of radioactive material. Initial state response for the EPZ may include evacuation, sheltering or access control. The response is intended to provide protection to the public from unnecessary exposure to radioactive noble gases (xenon and krypton), particulate and radioactive iodine from a radioactive plume.

The second planning area is the Ingestion Pathway Zone (IPZ), described as the circular area with a radius of fifty miles around a nuclear power plant. Protective actions for the IPZ would be implemented on a long-term basis to prevent the ingestion of radioactive materials that may have been deposited on the ground by a radioactive plume. These protective actions may include embargo and condemnation of food and milk, evacuation, access control, hunting and fishing restrictions, shellfish consumption restrictions, restriction on public and private campgrounds and restriction on public bathing places.

**Figure 1-2**  
**Nuclear Power Plants Affecting the State of New Jersey**



Small Circle: 10 Mile Emergency Planning Zone (EPZ)  
Large Circle: 50 Mile Ingestion Pathway Zone (IPZ)

## **2.0 NUCLEAR EMERGENCY RESPONSE and EMERGENCY FACILITIES**

### **2.1 Overview: Response to Nuclear Emergency Events**

Nuclear emergency response to any of the four nuclear power plants in New Jersey is initiated by the BNE Duty Roster Officer (see Section 2.3). The magnitude of the state's response is dictated by the severity of the incident. The methodology for the classification of emergency events at a fixed nuclear facility is outlined in Nuclear Management Resource Council (NUMARC), "Methodology for Development of Emergency Action Levels". Nuclear power plants classify incidents in one of the following categories: Unusual Event (UE), Alert, Site Area Emergency (SAE) and General Emergency (GE). The UE classification describes occurrences at a nuclear power plant which indicate a potential for degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs. An Alert describes events at a nuclear power plant which involve an actual or potential degradation of the level of safety of the plant. Any release of radioactive material is expected to be minimal. The SAE classification indicates that events have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are expected to be limited to within the site boundary. A GE classification describes events which involve actual or imminent substantial reactor core degradation or melting with the potential for loss of containment integrity. Releases of radioactive material are expected to extend beyond the site boundary.

### **2.2 Nuclear Emergency Events in 2008**

Between January 1, 2008 and December 31, 2008, one UE was declared at nuclear power plants in New Jersey (see Table 2-1). Figure 2-1 identifies the number of UEs declared at each nuclear generating station over the past twenty years. No Alerts were declared during 2008. Only six Alerts have been declared in the state since 1983, the last occurring in 1995. There has never been a SAE or GE declared in New Jersey.

### **2.3 BNE Duty Roster**

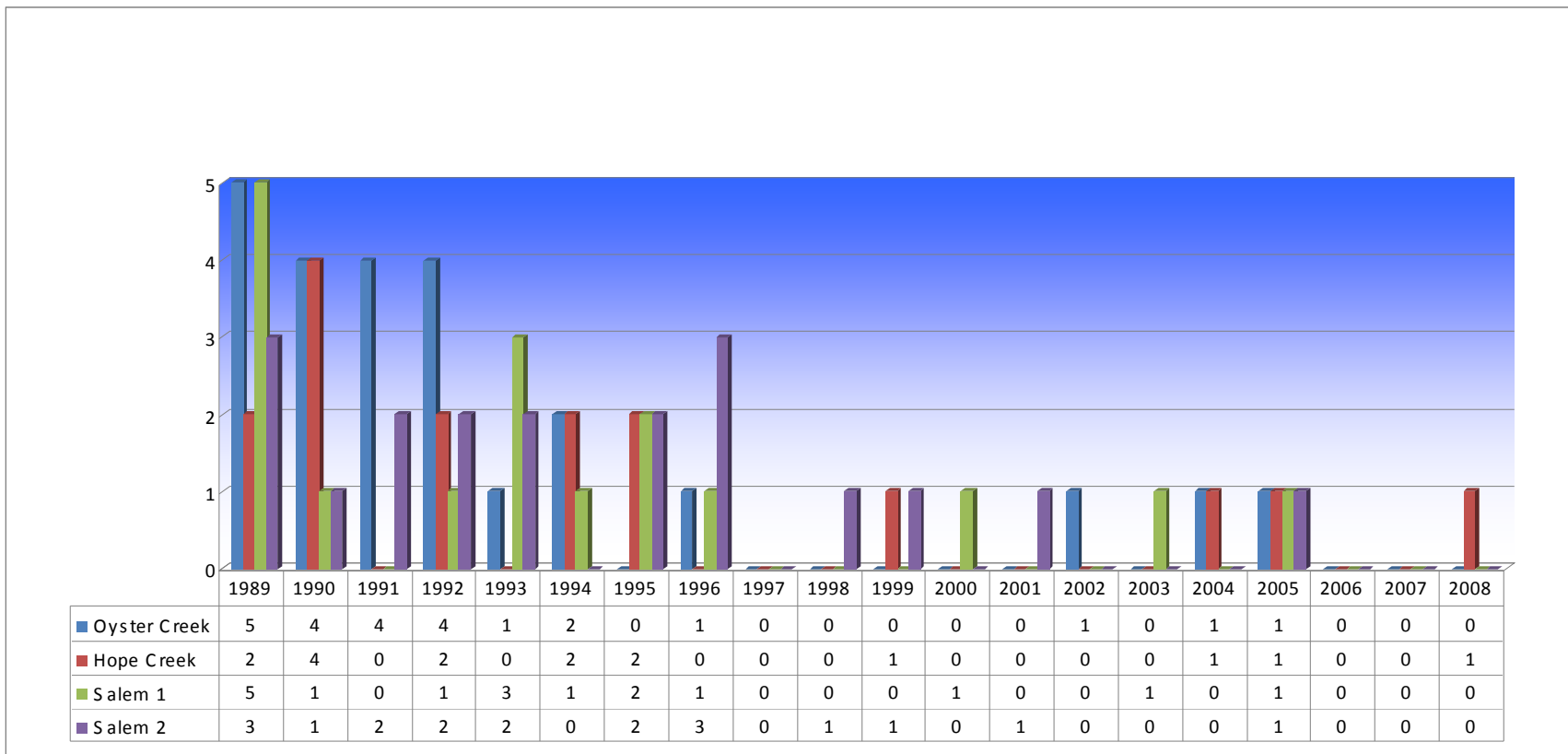
As of December 31, 2008, ten of the 41 nuclear emergency responders have been chosen to staff the BNE Duty Roster. These responders are chosen based on their experience, knowledge of overall response activities and familiarity with nuclear power plant operations. Personnel on the BNE Duty Roster act as initial state contacts during a nuclear event. Two people are assigned on a weekly basis as primary and secondary

**TABLE 2-1**

**2008 EMERGENCY EVENT NOTIFICATIONS**

<b><u>Date</u></b>	<b><u>Plant</u></b>	<b><u>Classification</u></b>	<b><u>Initiating Condition</u></b>	<b><u>Response</u></b>
08/28/08	Hope Creek	Unusual Event	Visual observation of uncontrolled flooding.	Monitored in accordance with BNE procedures.

**Figure 2-1**  
**Unusual Events**  
**Oyster Creek, Hope Creek and Salem Units 1 & 2**



contacts to provide continuous coverage (24 hours per day, 365 days per year) in the event of a nuclear incident.

For UEs, the BNE Duty Roster Officer provides continuous monitoring of the event until it ends. This involves obtaining engineering information from the control room of the affected nuclear power plant and updating DEP management and the New Jersey State Police. At the Alert level and above, in addition to monitoring the event, the BNE Duty Roster Officer initiates the call out of responders and the staffing of nuclear emergency response facilities.

#### 2.4 Nuclear Emergency Responders

Nuclear emergency responders include personnel from the BNE, the Bureau of Environmental Radiation (BER), the Bureau of Radiological Health (BRH) and the Bureau of Communications and Support Services (BCSS). As of December 31, 2008, forty-one staff level personnel were involved in nuclear emergency response with active support from management personnel in the Division of Environmental Safety and Health. Figure 2-2 provides a breakdown of nuclear emergency response support by organization. Additional field support is provided by Ocean County personnel, the Bureau of Emergency Response, the Water Supply Element, the Division of Fish and Wildlife, the Division of Parks and Forestry and the Department of Health and Senior Services. To support nuclear emergency response activities, the NEPS coordinates the staffing of eight nuclear response facilities with DEP personnel.

#### 2.5 Bureau of Nuclear Engineering Headquarters (BNE/HQ) /Technical Assessment Center (TAC)

The BNE/HQ and TAC is located in the BNE offices on Arctic Parkway in Ewing Township. The BNE/HQ serves as the initial mustering site and command and control center during the early stages of an accident. BNE response teams gather at the BNE/HQ and are dispatched to their appropriate response locations after a briefing on plant conditions. Emergency personnel dispatch from the BNE/HQ to the FCP, EOF, EOC, or ENC/JIC. BNE/HQ is deactivated after the EOF is activated.

The TAC is activated during the intermediate phase of an accident after initial protective actions have been implemented and further sampling of crops, milk, vegetation, and water in the affected area has occurred. State decision makers at the TAC will implement additional protective actions for the public based on the results of these samples. These additional protective actions may include embargo and condemnation of food and milk, evacuation, access control, hunting and fishing restrictions, restrictions on public and private campgrounds, and restrictions on public bathing places.

## 2.6 Emergency Operations Facility (EOF)

The BNE maintains working space in each licensee's EOF. For response to events at the OCNCS site, the EOF is located in Toms River. The second EOF is located in Salem City to support events at the AI site. The DEP staff at the EOF is made up of a dose assessment and engineering group. The dose assessment group predicts, via computer model, the potential dose to the surrounding population in the event of a radioactive release from the nuclear power plant. By monitoring plant parameters and the status of safety related equipment, the engineering assessment group is able to anticipate plant response to system transients, and identify potential release pathways for radioactivity. The EOF team analyzes technical information from dose assessment, engineering assessment, and field data from the FCP to formulate initial offsite protective action recommendations for the population. These protective actions range from sheltering to evacuation, based on the specifics of the accident.

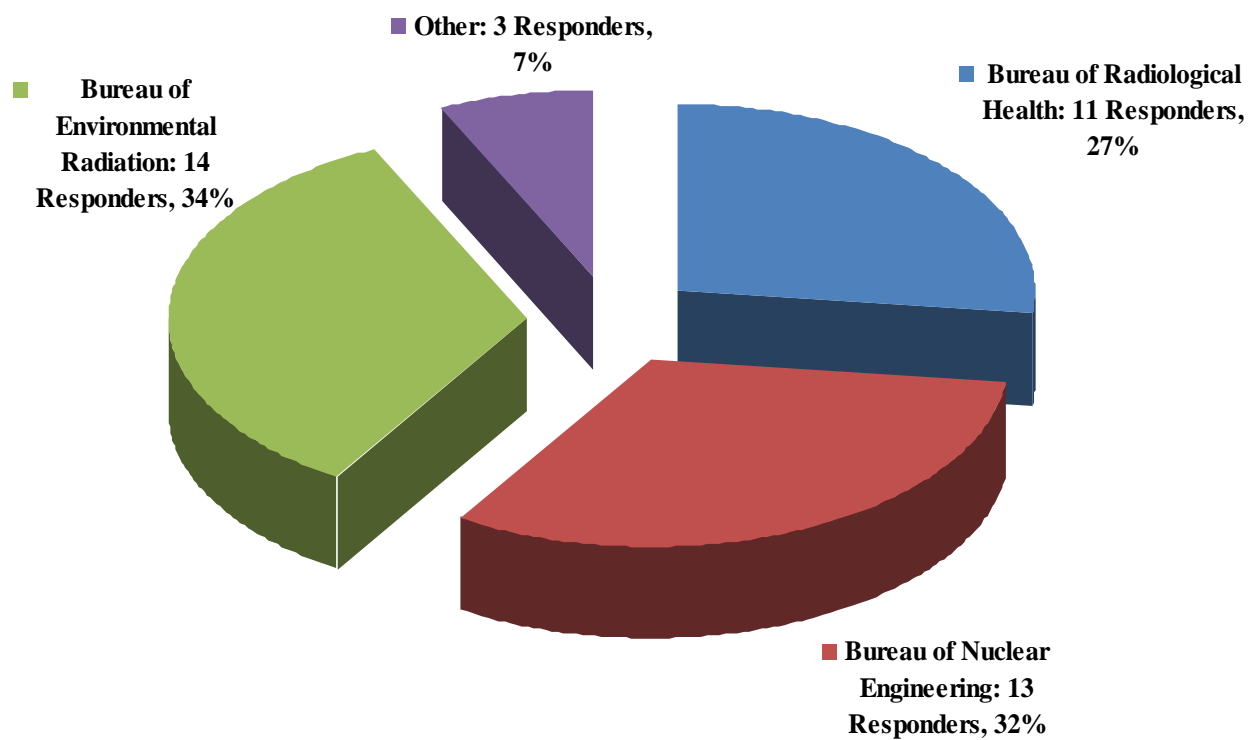
## 2.7 Emergency News Center (ENC) / Joint Information Center (JIC)

The ENC/JIC is activated to aid in disseminating information to the media and the public. For events at the AI site, PSEG's Emergency News Center (ENC) is located at the Woodstown Emergency Operations Center. For Oyster Creek events, Exelon's Joint Information Center (JIC) is located in Toms River. The ENC and JIC staff includes representatives from the licensee, state and county who are in contact with their respective organizations throughout the event. Press briefings are held periodically to provide the public with the details on the status of the emergency and the steps taken by the emergency responders.

## 2.8 Forward Command Post (FCP)

The BNE maintains two FCP's in the state, located in close proximity to the plants to facilitate field operations. The FCP for Oyster Creek events is located at Miller Air Park in Berkeley Township. For Artificial Island events, the FCP is located in Woodstown, Salem County. The FCP functions as the primary field command center. State and county FMT's are dispatched from the FCPs to track the radioactive release, and to take air, milk, vegetation, water and soil samples, as required. Once analyzed, this field information will aid state decision makers in the determination of the extent of radioactive contamination in the environment following a release from a nuclear power plant. All field team data is transmitted to the EOF for use in the formulation of protective action recommendations for the surrounding population in the affected areas.

**Figure 2-2**  
**Nuclear Emergency Responders By Program**  
**December 31, 2008**





## 2.9 Emergency Operations Center (EOC)

The EOC is the center for decision making and implementation of protective actions on the state level. It is located at the State Police Regional Operations and Intelligence Center in West Trenton. The EOC provides a central location for the direction and control of all emergency and disaster operations in the state. Representatives from various state agencies meet at the EOC to discuss issues and implement protective actions, if necessary.



Lanoka Harbor Emergency Worker Decontamination Center

### **3.0 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISES**

#### **3.1 State Requirements**

In order to ensure the health and safety of citizens during a nuclear event, the New Jersey Radiation Accident Response Act (N.J.S.A. 26:2D-43f) mandates testing of the New Jersey RERP. The Act specifically requires the "... testing and evaluation of all plans developed pursuant to this act upon their adoption, and annually thereafter, to assure that all personnel with emergency response duties and responsibilities effectively carry out their assigned tasks."

#### **3.2 Federal Requirements**

By presidential directive on December 7, 1979, the Federal Emergency Management Agency (FEMA) became the lead agency for all off-site nuclear power plant emergency planning and response. FEMA's responsibilities include review and evaluation of state and local nuclear emergency response plans, observation and evaluation of implementation of state and local plans and coordination of activities of other federal agencies that have radiological emergency planning responsibilities.

The adequacy of off-site nuclear emergency response is evaluated by FEMA through Radiological Emergency Preparedness (REP) exercises. Table 3-1 summarizes the 2008 exercises and the extent of play in which the NEPS participated. FEMA Graded EPZ exercises are required biennially at each site. IPZ exercises are evaluated once every six years. REP exercises are designed to test the capability of off-site organizations to protect public health and safety through the implementation of emergency response plans and procedures under simulated accident conditions.

During REP exercises, FEMA evaluators compare state performance with federal response objectives and provide an Exercise Report detailing their observations. If exercise objectives are not met by state performance, FEMA classifies the performance inadequacy as one of the following: Deficiency, Area Requiring Corrective Action (ARCA), or Plan Issue. A deficiency is defined as "observed or identified inadequacies of organizational performance in an exercise that could cause a finding that off-site 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." Deficiencies must be corrected and re-evaluated by FEMA within 120 days. An ARCA is defined as an inadequacy in state response that, by itself, does not adversely impact public health and safety. ARCAs must be corrected in the next FEMA-observed exercise

at that site. A Plan Issue is an observed or identified issue during an exercise which does not involve participant or organizational performance, but rather involves inadequacies in an organization's existing plan or procedures. A Plan Issue should be corrected by no later than the next annual plan review and update. Figure 3-1 displays the number of DEP related ARCAs by year for Artificial Island and Oyster Creek.

In addition to FEMA-evaluated REP exercises, nuclear emergency responders participate in annual state exercises, quarterly licensee exercises, licensee exercises observed by the Nuclear Regulatory Commission (NRC), table-top drills and field drills. During these exercises and drills, most of the eight nuclear emergency response facilities maintained by the NEPS are activated and staffed. In 2008, program personnel participated in ten exercises and drills: three quarterly exercises, one FEMA evaluated exercise, one state evaluated exercise and five other exercises. See Table 3-1 for a summary of exercises.



Emergency Worker Training

**TABLE 3-1**

**2008 EXERCISES AND EXTENT OF PLAY**

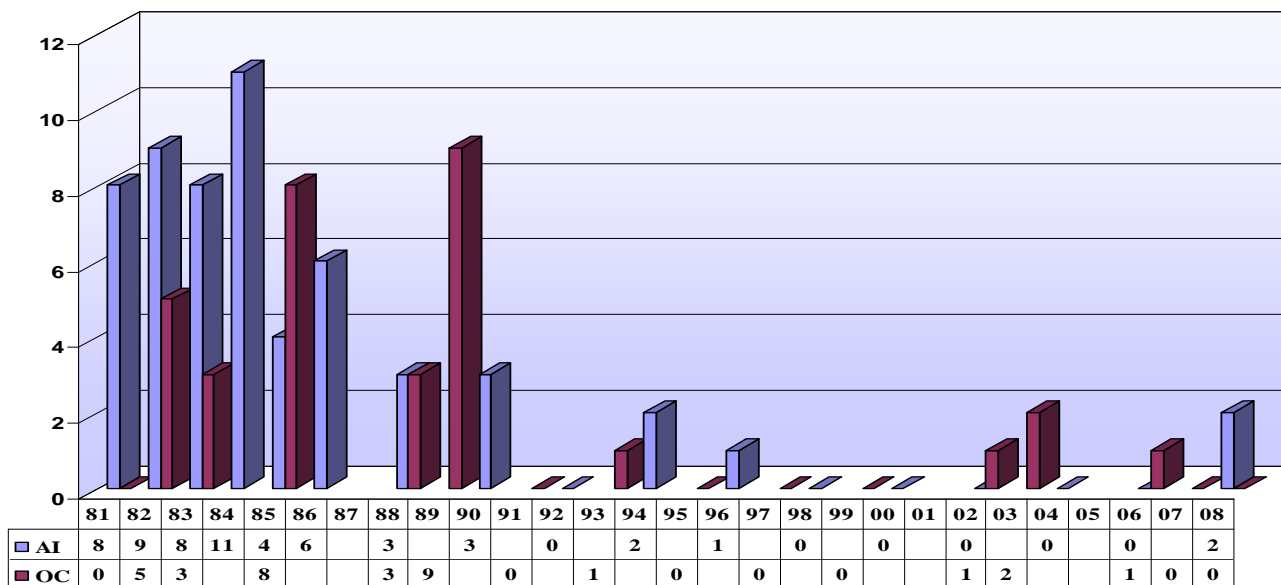
<u>Description</u>	<u>Date</u>	<u>BNE/HQ</u>	<u>EOF</u>	<u>EOC</u>	<u>ENC/JIC</u>	<u>FCP</u>	<u>FMT</u>
Salem Creek Quarterly	02/20/08	X	X	*	X		
Oyster Creek Quarterly	03/19/08	X	X	*	X		
Hope Creek Rehearsal	04/29/08	X	X	X	X	X	X
Hope Creek FEMA	05/20/08	X	X	X	X	X	X
Oyster Creek Quarterly	06/04/08	X	X	*	X		
Hostile Action Based Table-top Oyster Creek	07/29/08	*	*	*			
Oyster Creek State Eval.	08/13/08	X	X	X	X	X	X
Hostile Action Based Oyster Creek	09/09/08	*	X	X	X		
Ocean County EOC Drill	09/23/08			X			
Indian Point FEMA	12/03/08			X			

EOF: Emergency Operations Facility  
 JIC: Joint Information Center  
 X: Full staffing & participation

EOC: Emergency Operations Center  
 FCP: Forward Command Post  
 \* Partial Staffing

ENC: Emergency News Center  
 FMT: Field Monitoring Teams

**Figure 3-1**  
**BNE Exercise Performance**  
**Total ARCAs by Year, Artificial Island and Oyster Creek**



Because of the terrorist attacks on September 11, 2001, the FEMA evaluated exercise for Oyster Creek was postponed until 2002.  
 Due to Hurricane Katrina, the FEMA evaluated exercise for Oyster Creek was postponed until 2006.

## **4.0 ACTIVITIES IN SUPPORT OF NUCLEAR EMERGENCY PLANNING**

### **4.1 Hope Creek FEMA Graded Exercise**

In order to ensure the health and safety of our citizens during a nuclear event, the Federal Emergency Management Agency (FEMA) requires the testing and evaluation of the New Jersey Radiological Emergency Response Plan. On the evening of May 20<sup>th</sup>, 2008, DEP emergency response personnel tested the plan with the State Police Office of Emergency Management, Salem and Cumberland Counties, the Delaware Emergency Management Agency (DEMA), and Public Service Enterprise Group (PSEG) in a federally graded exercise at the Hope Creek Nuclear Generating Station in Lower Alloway's Creek Township. DEP staff activated the Emergency Operations Center (EOC), the Emergency Operations Facility (EOF), the Emergency News Center (ENC), the Forward Command Post (FCP), and two Field Monitoring Teams (FMTs).

During the evaluated exercise, engineering and dose assessment were conducted at the EOF in order to formulate protective action recommendations for the public. DEP staff presented accident assessment updates and protective action recommendations to the Governor's designee at the EOC. The Governor's designee then formulated protective action decisions for the public. Accident information and protective action decisions for the public were presented to the press at the ENC. Field monitoring teams characterized the extent of the radioactive plume and the FCP transmitted the field data to the EOF assessment team. During the exercise, each emergency facility was evaluated against six areas outlined in FEMA's evaluation methodology.

### **4.2 Re-certification Seminar for Trainers**

On January 25, 2008, the Nuclear Emergency Preparedness Section in conjunction with the State Police Office of Emergency Management and the Ocean County Sheriff's Department hosted a Re-certification Seminar for Trainers. The seminar was part of the annual re-certification module that was developed and approved by the Radiological Emergency Response Program Standing Committee formed in 2003. The seminar is designed to ensure that all members of the state training team provide consistent and uniform training to nuclear emergency responders and volunteers.

The Re-certification Seminar for Trainers was presented for the State/County/Licensee Radiological Emergency Response Program Training Team. The course included a review of the minimum required qualifications for trainers. The instruction covered training doctrine and methods used to conduct field and classroom training. Another module provided detailed training on the proper use of radiation detection instruments and survey techniques according to established radiological emergency response program

standard operating procedures. In addition to training, all team members were required to re-certify by passing a proficiency examination demonstrating proper use of equipment used in field operations and for emergency worker self protection. Finally, instructors provided information to trainers to ensure uniformity, consistency, and efficiency in the preparation, planning and conduct of all radiological emergency response training.

#### 4.3 Dosimetric Recording Information System (DoRIS)

On February 26, members from the NEPS and State Police Office of Emergency Management attended a demonstration of the Department of Health and Senior Services' Dosimetric Recording Information System (DoRIS). The hands-on demonstration was conducted using work stations at the DHSS's Health Command Center. DoRIS is a newly developed, web based central repository system for tracking dosimetry data of emergency responders. After several design and needs meetings with State Police Office of Emergency Management and BNE staff, the program was developed by DHSS's information and technology personnel. DoRIS will facilitate the need for a comprehensive dose tracking system during radiological emergencies. Off-site response organizations will be able to directly input individual emergency worker dosimeter readings into the system. In addition to maintaining individual cumulative exposure records, DoRIS will also alert data entry personnel of any individuals accumulating doses close to New Jersey's Administrated Dose Limit so that the appropriate actions can be taken.

#### 4.4 Computer Upgrades to Emergency Facilities

On February 14 and 27, the Office of Information Resource Management installed new computers in the Emergency Operation Facilities, Forward Command Posts and Emergency News Centers in Salem and Ocean counties. The upgraded computers will greatly enhance the reliability and effectiveness of the DEP's nuclear emergency response. The aging computer system was starting to show signs of unreliability and was incapable of managing new hardware and software. The DEP is mandated to be prepared for a full scale response to a nuclear emergency and implement the Radiological Emergency Response Plan in a timely and efficient manner. This new technology will ensure that our capabilities match the expectations of the public to protect their health and safety.

#### 4.5 Safety Parameter Display System (SPDS)

During a nuclear event or exercise staff at BNE Headquarters and at the Emergency Operations Facility perform accident assessment in order to develop protective action

recommendations (PAR) for the public if necessary. Accident assessment involves dose projection and evaluation of plant systems. Various tools and field data are used in each assessment process. One tool used in engineering assessment is the Safety Parameter Display System (SPDS).

SPDS is a computerized system provided by the licensees that displays real time engineering and dose information on plant systems. The system allows engineers to manually select, monitor and assess various plant systems from a desk top computer. By utilizing the system during exercises and real events, BNE staff can better assess plant systems and expedite the PAR process. Access to SPDS will allow the BNE to make an initial assessment of plant situations from its headquarters in Trenton during the time that emergency responders report to and activate emergency facilities. In addition, the BNE will be able to monitor plant parameters without having to disturb control room personnel. On April 21<sup>st</sup> PSEG emergency preparedness staff presented a training course on the operation and use of the SPDS for the Hope Creek nuclear generating station. Engineering and dose assessment staff from the BNE and Delaware's Emergency Management Agency attended the two hour session.

The remote access to the Salem SPDS was completed and tested in December 2008. The Salem remote access will mirror Hope Creek as much as possible in order to maintain consistency between the units. This will allow the BNE to use the same assessment methods for both stations.

#### 4.6 Annual Emergency Action Level Review

Event Classification Guides are used to identify the level of an emergency (Emergency Action Level) during a nuclear event and are practiced during quarterly and annual exercises. The Nuclear Regulatory Commission requires all licensees to provide annual EAL training. On September 25<sup>th</sup>, Public Service and Enterprise Group (PSEG) Nuclear, LLC hosted New Jersey and Delaware for the annual states' Emergency Action Level Review at the Deerfield Country Club, in Newark, Delaware. The meeting included representatives from PSEG, the Bureau of Nuclear Engineering (BNE), Delaware Emergency Management Agency (DEMA), and NJ State Police Office of Emergency Management. PSEG presented their Event Classification Guides and discussed changes and revisions since last year's annual training. Following the review, representatives from New Jersey and Delaware made presentations on their protective action recommendation and protective action decision procedures to the group. Emergency events in the nuclear power industry and lessons learned during the past year also were reviewed and discussed.

On October 1, 2008, Exelon hosted its annual state Emergency Action Level Training at the Emergency Operations Facility in Toms River. Exelon's Oyster Creek emergency preparedness staff conducted the annual training for the BNE's State's Radiological



Assessment Officers, the State Police Office of Emergency Management, and Ocean County's Training Coordinator. Exelon presented their Event Classification Guides and discussed changes and revisions since last year's annual training. The training also included a review of Oyster Creek Nuclear Generating Station's revised Emergency Action Levels and fission product barrier matrix.

#### 4.7 Hostile Action Based Tabletop and Drill

Nuclear Regulatory Bulletin 2005-02 "Emergency Preparedness and Response Actions for Security-Based Events" suggests that licensees should periodically test and exercise threat-based emergency capabilities. It is suggested that each site perform one threat-based drill between September 2006 and December 2009. To this end, on January 29, representatives of the BNE Nuclear Emergency Preparedness Section attended a hostile threat tabletop exercise at the Ritacco Center in Toms River. This drill was attended by the FBI, Exelon emergency response and security personnel, State Police Office of Emergency Management, National Guard, and county and local law enforcement agencies. The purpose of the exercise was to practice co-ordination between each agency and to discuss specific response roles with regard to the National Incident Management System (NIMS).

On September 9<sup>th</sup> the Oyster Creek nuclear generating station conducted the actual Hostile Action Based Drill. Exelon, the BNE, and the State Police Office of Emergency Management supported the drill by participating at off-site response facilities. The Emergency Operations Facility and Joint Information Center located in Toms River, and the Emergency Operations Center located at the Regional Operations and Intelligence Center in West Trenton were staffed by responders. The exercise tested the Incident Command System and integrated local, state and federal law enforcement, fire, medical and hazmat agencies. In 2010, Hostile Action Based exercises will be integrated into the exercise schedule cycle and evaluated by the NRC and FEMA.

#### 4.8 Oyster Creek State Evaluated Exercise

In addition to the federal requirement for an evaluated exercise every two years at each nuclear generating site, the Radiological Emergency Response Plan requires New Jersey to conduct and evaluate exercises during the alternate years. On August 13<sup>th</sup>, 2008, emergency response personnel participated with various state, county, and municipal agencies in a state evaluated exercise at the Oyster Creek Nuclear Generating Station.

Department of Environmental Protection nuclear emergency response personnel participated in the exercise with the State Police Office of Emergency Management, the Ocean County Office of Emergency Management, and Exelon. The purpose of the exercise was to assess the capabilities of state, county, and local emergency preparedness

organizations to implement nuclear emergency response plans and procedures to protect public health and safety. State evaluated exercises also present an opportunity for offsite emergency facilities to implement and test new procedures and equipment while providing additional training opportunities for responders.

All emergency facilities were activated during the evening exercise. Nuclear emergency response personnel staffed the Emergency Operations Facility and the Joint Information Center in Toms River; the Forward Command Post located in Berkeley; and the Emergency Operations Center located at State Police's Regional Operations and Intelligence Center in West Trenton. Two state and one county field monitoring teams also participated in the exercise.

During the exercise, engineering and dose assessment was conducted at the Emergency Operations Facility in order to formulate protective action recommendations. Department of Environmental Protection personnel briefed the Governor's staff on the status of the incident and presented protective action recommendations for the public at the Emergency Operations Center. Protective action decisions to protect the public were formulated at the Emergency Operations Center after reviewing all information. Accident updates and protective action decisions for the public were disseminated to the press at the Joint Information Center. The Forward Command Post directed the field monitoring teams which provided data used to characterize the extent of the radioactive plume. Controllers and evaluators from the Department of Environmental Protection were assigned to each facility and field team in order to facilitate exercise play and conduct exercise evaluations. The evaluators used the Federal Emergency Agency's exercise evaluation criteria to assess the exercise. All offsite emergency facilities successfully met the criteria in each of the six evaluation areas.

#### 4.9 Incident Command System (ICS) Training for Executives

On November 19<sup>th</sup>, members of the Nuclear Emergency Preparedness Section attended an Incident Command System Training Course for Executives. The course was presented by the Department of Environmental Protection's Bureau of Emergency Response to all of the Department's emergency response coordinators. The course was one of seventeen modules which comprise the ICS National Training Curriculum and the National Incident Management System (NIMS). The course included an ICS orientation for executives, administrators, and policy makers. Objectives included: definitions and terminology; how ICS can be applied; ICS organization and functional responsibilities; and administrative, logistical, and financial considerations. A basic understanding of ICS, unified and area command, and multi-agency coordination also was presented.

## 5.0 TRAINING OF NUCLEAR EMERGENCY RESPONDERS

### 5.1 State/County/Licensee Training

Federal guidelines require that nuclear emergency responders receive annual training to maintain a state of preparedness. The State Police Office of Emergency Management is the lead agency for the development and coordination of training for both paid and volunteer staff in the emergency planning zone counties and municipalities. To ensure the state provides a comprehensive training program for emergency responders, the State Police Office of Emergency Management has created a training team within the Radiological Emergency Preparedness program to address training issues. The training team consists of members of the State Police Office of Emergency Management, the Bureau of Nuclear Engineering's Nuclear Emergency Preparedness Section, Ocean, Salem and Cumberland Counties, Exelon, and Public Service Enterprise Group. Together, these trainers provide all required training at the state, county and local level to ensure consistency for all responders. In addition, the State Police Office of Emergency Management Radiological Emergency Preparedness Standing Committee created a training subcommittee. The subcommittee is comprised of staff from the State Police Office of Emergency Management and the Nuclear Emergency Preparedness Section and county training coordinators. The task of the subcommittee is to develop course outlines, objectives and training modules to ensure that all responders are trained to the same standards and guidelines. The efforts of the subcommittee have resulted in a comprehensive training program that meets the requirements of federal guidance.

### 5.2 Training Provided by NEPS Personnel

In order to ensure that all responders are able to perform their assigned duties in a timely, knowledgeable and professional manner, the NEPS provides a wide range of training throughout the year. During 2008, NEPS implemented and supported the implementation of twenty-five training sessions. Table 5-1 summarizes all nuclear emergency response training provided during 2008.

### 5.3 Training Attended by NEPS Personnel

In 2008, NEPS personnel attended training offered by the BNE, SPOEM, PSEG, Exelon and the Nuclear Regulatory Commission. Table 5-2 summarizes training attended by NEPS personnel.

**TABLE 5-1**

**NUCLEAR EMERGENCY RESPONSE TRAINING PROVIDED BY NEPS**

<b><u>TRAINING</u></b>	<b><u>DATES</u></b>
RERP Training (Ocean County)	01/25/08
Train the Trainers (Ocean County)	02/01/08
Salem County Field Monitoring Team	02/13/08
Salem County Field Monitoring Team	03/03/08
Emergency Operation Facility / Dose Training	03/11/08
Introduction to Emergency Preparedness	03/13/08
Reception Center Training (Bridgeton)	04/02/08
Train the Trainers (Ocean County)	04/04/08
Forward Command Post / Field Monitoring Team	04/09/08
Reception Center Managers Training (Ocean County)	04/18/08
Protective Action Recommendation Training	04/22/08
Forward Command Post / Field Monitoring Team	04/23/08
Nuclear Plant Systems Training	05/05/08
Emergency Worker Decon Center Training (Lanoka Harbor)	05/05/08
Emergency Worker Decon Center Training (Lanoka Harbor)	05/08/08
Emergency Worker Decon Center Training (Lanoka Harbor)	05/12/08
Emergency Worker Decon Center Training (Lanoka Harbor)	05/15/08
Emergency Operations Center Training	06/06/08

**TABLE 5-1 (continued)**

**NUCLEAR EMERGENCY RESPONSE TRAINING PROVIDED BY NEPS**

<b><u>TRAINING</u></b>	<b><u>DATES</u></b>
Reception Center Training (Brick Township)	07/07/08
Reception Center Training (Brick Township)	07/09/08
Reception Center Training (Brick Township)	07/14/08
Forward Command Post / Field Monitoring Team	07/23/08
Field Monitoring Team (Ocean County)	08/01/08
Emergency Action Level (EAL) Review	09/25/08
RERP Training (Ocean County)	09/26/08



Salem County Field Team Training

**TABLE 5-2**

**TRAINING ATTENDED BY NEPS PERSONNEL**

<b><u>TRAINING</u></b>	<b><u>DATES</u></b>	<b><u>PROVIDED BY</u></b>
Dosimetric Radiological Information System	02/27/08	DHSS
Emergency Response Display System (ERDS) Training	02/28/08	NRC
Safety Parameter Display System (SPDS) Training	04/21/08	PSEG
Emergency Operation Facility / Dose Training	03/11/08	BNE/NEPS
Introduction to Emergency Preparedness	03/13/08	BNE/NEPS
Forward Command Post / Field Monitoring Team	04/09/08	BNE/NEPS
Protective Action Recommendation Training	04/22/08	BNE/NEPS
Forward Command Post / Field Monitoring Team	04/23/08	BNE/NEPS
Nuclear Plant Systems Training	05/08/08	BNE/NEPS
Forward Command Post / Field Monitoring Team	07/23/08	BNE/NEPS
Evaluator Training	09/19/08	State Police
Emergency Action Level (EAL) Review	09/25/08	PSEG
Emergency Action Level (EAL) Review	10/01/08	Exelon

## **6.0 RADIOLOGICAL EMERGENCY RESPONSE PLAN PUBLIC HEARINGS**

The DEP, in cooperation with the New Jersey Division of State Police, is required by the New Jersey Radiation Accident Response Act (N.J.S.A. Title 26:2D-37 et seq.), to hold public hearings to take comment on and answer questions relevant to the New Jersey RERP for nuclear power plants. The purpose of the RERP is to coordinate and implement an immediate comprehensive state, county and municipal response to a radiological emergency at a nuclear power plant affecting the State of New Jersey. These public hearings are held annually in each of the three counties affected by the RERP; Ocean County for the Oyster Creek Nuclear Station and Salem and Cumberland counties for the AI site (Hope Creek and Salem Units 1 and 2).

The NEPS coordinated three public hearings in 2008: July 2<sup>nd</sup> in Salem County, July 16<sup>th</sup> in Cumberland County and July 22<sup>th</sup> in Ocean County. Statements were made by representatives of the DEP, the SPOEM, and the Department of Health and Senior Services. Questions and comments from the public were addressed by the appropriate agency. Outstanding questions and commitments identified during the hearings and review of the hearing transcripts were responded to in a prepared response document, which was sent to each attendee.

Copies of the transcripts for the three hearings and the response document are available for inspection on the Bureau of Nuclear Engineering's web site at:

<http://www.nj.gov/dep/rpp/download.htm>



Toms River Emergency Operations Facility

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