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10 CFR 50.90  
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RA-18-014

February 13, 2018

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Oyster Creek Nuclear Generating Station  
Renewed Facility Operating License No. DPR-16  
NRC Docket Nos. 50-219 and 72-15

**Subject:** Response to Request for Additional Information (RAI) and Supplemental Regarding License Amendment Request - Proposed Changes to the Oyster Creek Emergency Plan for Permanently Defueled Emergency Plan and Emergency Action Level Scheme

- Reference:**
- 1) Letter from Michael P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – *"License Amendment Request - Proposed Changes to the Oyster Creek Emergency Plan for Permanently Defueled Emergency Plan and Emergency Action Level Scheme,"* dated August 29, 2017 (ML17241A065)
  - 2) U.S. Nuclear Regulatory Commission Electronic Mail Request to David Helker, et al., (Exelon Generation Company, LLC) - Draft RAI for Oyster Creek Permanently Defueled EP and EAL Scheme LAR (CAC No. MG0160; EPID: L-2017-LLA-0307), dated January 12, 2018
  - 3) U.S. Nuclear Regulatory Commission Electronic Mail Request to David Helker (Exelon Generation Company, LLC) – "RAI for Oyster Creek Permanently Defueled EP and EAL Scheme LAR (CAC No. MG0160; EPID: L-2017-LLA-0307), dated January 24, 2018 (ML18024B064)

By letter dated August 29, 2017 (Reference 1), Exelon Generation Company, LLC (Exelon) submitted changes to the site emergency plan (SEP) and emergency action level (EAL) scheme for Oyster Creek Nuclear Generating Station (OCNGS). The proposed changes would revise the SEP and EAL scheme to reflect a permanently defueled condition.

Subsequently, in an electronic mail request dated January 12, 2018 (Reference 2), the U.S. Nuclear Regulatory Commission (NRC) issued draft Requests for Additional Information (RAIs) indicating that it had reviewed the information submitted in the Reference 1 letter and that additional clarifying information was needed to support its continued review. The draft RAIs in

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Reference 2 were further discussed during teleconferences between Exelon and NRC representatives held on January 24, 2018. As a result of the discussions, it was determined that no modifications to the draft RAIs were needed and the NRC subsequently issued formal RAIs on January 24, 2018 (References 3), and requested a response within 30 days of the date of this electronic mail.

Accordingly, Attachment 1 of this letter provides Exelon's responses to the NRC's RAIs and also includes supplemental information in support of this amendment request. Attachment 2 includes the revised Permanently Defueled Emergency Plan (PDEP) page mark-ups and Attachment 3 contains the clean copy of the PDEP. The PDEP pages being submitted in this letter supersede in entirety those submitted in Reference 1.

Exelon has reviewed the information supporting a finding of No Significant Hazards Consideration and the Environmental Consideration provided to the NRC in Reference 1. The additional information provided in this submittal does not affect the previously stated bases in Reference 1 for concluding that the proposed license amendment does not involve a significant hazards consideration. In addition, the information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no regulatory commitments contained in this submittal.

If you have any questions concerning this submittal, please contact Paul Bonnett at (610) 765-5264.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 13<sup>th</sup> day of February 2018.

Respectfully,



Michael P. Gallagher  
Vice President, License Renewal & Decommissioning  
Exelon Generation Company, LLC

Attachment 1: Response to NRC's Request for Additional Information  
Attachment 2: Revised Permanently Defueled Emergency Plan (PDEP) Page Mark-ups  
Attachment 3: Clean Copy - Permanently Defueled Emergency Plan (PDEP)

cc: w/Attachments

Regional Administrator - NRC Region I  
NRC Senior Resident Inspector - Oyster Creek Nuclear Generating Station  
NRC Project Manager, NRR - Oyster Creek Nuclear Generating Station  
Director, Bureau of Nuclear Engineering - New Jersey Department of Environmental  
Protection  
Mayor of Lacey Township, Forked River, NJ

**Attachment 1**  
**Response to NRC's Request for Additional Information**

## **SUMMARY**

By letter dated August 29, 2017 (Reference 1), Exelon Generation Company, LLC (Exelon) submitted changes to the site emergency plan (SEP) and emergency action level (EAL) scheme for Oyster Creek Nuclear Generating Station (OCNGS). The proposed changes would revise the SEP and EAL scheme to reflect a permanently defueled condition.

Subsequently, in an electronic mail request dated January 12, 2018 (Reference 2), the U.S. Nuclear Regulatory Commission (NRC) issued draft Requests for Additional Information (RAIs) indicating that it had reviewed the information submitted in the Reference 1 letter and that additional clarifying information was needed to support its continued review. The draft RAIs in Reference 2 were further discussed during teleconferences between Exelon and NRC representatives held on January 24, 2018. As a result of the discussions, it was determined that no modifications to the draft RAIs were needed and the NRC subsequently issued formal RAIs on January 24, 2018 (References 3), and requested a response within 30 days of the date of this electronic mail.

Accordingly, this attachment restates the NRC's RAI questions contained in the Reference 3 electronic mail request followed by Exelon's response. Attachment 2 includes the revised Permanently Defueled Emergency Plan (PDEP) page mark-ups and Attachment 3 contains the clean copy of the PDEP. The PDEP pages being submitted in this letter supersede in entirety those submitted in Reference 1.

## **RESPONSE TO RAI QUESTIONS**

### **RAI-OC-1**

Evaluation Criterion B.5 in Attachment 1 to NSIR/DPR-ISG-02, "Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants" (ADAMS Accession No. ML14106A057), states, in part:

*Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity.*

Exelon's response to RAI OCNGS-02 dated December 6, 2017 (ADAMS Accession No. ML17340A708), related to the post-shutdown emergency response organization (ERO) changes, stated, in part:

The OCNGS Staffing Timeline Integrated Review documented in the FLEX Integrated Plan (OP-OC-118-1001, "Oyster Creek FLEX Validation Plan," Attachment 4), shows that two (2) trained on shift individuals can implement the established FLEX procedures to remove debris, route hoses, and establish an operating FLEX diesel pump to supply makeup water to the SFP within 4 hours. As a redundant strategy, the EDMG procedures also provide the guidance necessary to establish makeup to the SFP in under 4 hours by using the EDMG portable diesel pump with two (2) trained on-shift individuals. ***The above tasks would be performed by two (2) on-shift individuals who do not have other assigned required emergency preparedness (EP) tasks.*** Direction and selection of these tasks will continue to be directed by the Certified Fuel Handler and Non-Certified Fuel Handler.

However, the list of on-shift and augmented staff provided in Table 7.1, "Minimum On-Shift and ERO Staffing Requirements," contained in Attachment 2 of Exelon's August 29, 2017 letter, did not indicate what trained on-shift staff positions are designated to perform mitigation strategies and whether it would continue to be the expectation that "the above tasks would be performed by

two (2) on-shift individuals who do not have other assigned required emergency preparedness (EP) tasks."

Please clarify what trained on-shift staff positions are designated to perform mitigation strategies and whether it would continue to be the expectation that these tasks would be performed by two (2) on-shift individuals who do not have other assigned required EP tasks.

**Exelon's Response to RAI-OC-1:** The Minimum On-Shift and ERO Staffing Requirements were provided in Table 7.1 of the proposed Oyster Creek PDEP (Reference 1, Attachment 2). A note has been added to revised Table 7.1 (as provided in Attachments 2 and 3) to reflect that the Non-Certified Operator (NCO), Shift Manager (SM) and Radiation Protection Technician (RPT) will be required to support mitigating strategies for a catastrophic loss of spent fuel pool (SFP) water inventory. While the Shift Manager will be responsible for directing the mitigating strategies, in addition to his emergency preparedness tasks, the NCO and RPT would not have any concurrent emergency preparedness tasks during performance of mitigating strategies. The in-plant team performing SFP mitigating strategies would have normal shift electronic dosimetry, monitoring and radiation protection controls that exist for in-plant shift workers. This would alleviate any concurrent tasks that the RPT would need to perform while performing mitigating strategies.

These changes are reflected in the attached revised PDEP.

### **RAI-OC-2**

Evaluation Criterion B.9 in Attachment 1 to NSIR/DPR-ISG-02 states, in part:

*Each licensee shall identify the services to be provided by local agencies for handling emergencies, e.g., police, ambulance, medical, hospital, and fire-fighting organizations.*

Section 7.2.3.1, "Local Services," (page 23) in Attachment 2 of Exelon's August 29, 2017 letter, states, in part:

Arrangements have been made for the extension of the ERO's capability to address emergencies.

Please explain why the specific ambulance service providers are not listed in subsection 1 as was done in subsections 2 – 4 for the other services provided to support the site.

**Exelon's Response to RAI-OC-2:** The specific ambulance service providers that have agreed to support Oyster Creek have been added to Section 7.2.3.1, subsection 1 of the attached revised PDEP. This subsection has been revised as follows:

1. Transportation of injured personnel using an ambulance service (Lacey Township, Lanoka Harbor and Waretown First Aid Squads).

Additionally, Section 2.1 (page 3) has been revised to include Waretown First Aid Squad as follows:

Ambulance service is provided by Lacey Township, Lanoka Harbor, and Waretown First Aid Squads.

These changes are reflected in the attached revised PDEP.

### **RAI-OC-3**

Evaluation Criterion E.1 in Attachment 1 to NSIR/DPR-ISG-02 states, in part:

*Each licensee shall establish procedures which describe mutually agreeable bases for notification of response organizations consistent with the emergency classification and action level scheme.*

Section 10.1, "Emergency Condition Recognition and Classification," (page 38) in Attachment 2 of Exelon's August 29, 2017 letter, states, in part:

The Shift Manager is responsible for the notification of an emergency declaration to the State of New Jersey. Notification is made within 60 minutes after the availability of indications to operators that an EAL threshold has been reached.

In addition, Figure 6.1, "Exelon Notification Scheme," (page 19) in Attachment 2 of Exelon's August 29, 2017 letter, appears to indicate that the State of New Jersey will provide notification to "Local Warning Points/EOCs [*emergency operations centers*]."

Please clarify which organization local warning points/EOCs will be notified by the State of New Jersey in the event of an emergency declaration at OCNCS, and whether there is agreement with these local response organizations, specifically Ocean County, on this approach.

**Exelon's Response to RAI-OC-3:** Local organization EOCs: Ocean County, Lacey Township, and Ocean Township are notified by the State of New Jersey, as necessary, when an Unusual Event, Alert, or other State EOC notification has been made by the OC Shift Manager. The local county and townships have established this process for the current operating plant and will continue to support this method during this decommissioning period. The Local Warning Points/EOC block on Figure 6.1 has been revised to indicate the three local EOCs that will be contacted by the State EOC in the attached revised PDEP.

These changes are reflected in the attached revised PDEP.

#### **RAI-OC-4**

Evaluation Criterion E.4 in Attachment 1 to NSIR/DPR-ISG-02 provides guidance on the contents of emergency messages based on the permanently shutdown and defueled condition of the facility, and includes that licensee will communicate a "[m.] request for any needed onsite support by offsite organizations." However, the content of messages, as described in Section 10.1, "Emergency Condition Recognition and Classification," to Attachment 2 of Exelon's August 29, 2017 letter, does not appear to address this criterion.

Please describe the method being used by licensee for requesting any needed onsite support by offsite organizations, or basis for not addressing this criterion in emergency message content.

**Exelon's Response to RAI-OC-4:** The Emergency Notification and subsequent communication reports from the Shift Manager to the State EOC is the intended method to be used when assistance from offsite organizations is requested for onsite support. Section 10.1, Item 6 has been added to the list of information that the NJ Office of Emergency Management (OEM) may request from OCNCS, which states:

6. Whether or not offsite assistance is needed.

This change is reflected in the attached revised PDEP.

**RAI-OC-5**

Evaluation Criterion F.2 in Attachment 1 to NSIR/DPR-ISG-02 states:

*Each licensee shall ensure that a coordinated communication link for medical support exists.*

Please describe provision for a communications link for prompt ambulance transport of persons with injuries to designated hospitals as identified in Section 9.4.4, "Emergency Transportation," to Attachment 2 of Exelon's August 29, 2017, letter.

**Exelon's Response to RAI-OC-5:** The local ambulance/first aid organizations as listed in Section 7.2.3.1 can be contacted directly through commercial phone lines from the OCNGS control room or as dispatched by the State EOC. Section 9.4.4 has been revised as follows:

**9.4.4. Medical Transportation**

Arrangements are made for prompt ambulance transport of persons with injuries involving radioactivity to designated hospitals. Such service is available on a 24-hour per day basis and is confirmed by letter of agreement. Radiation monitoring services shall be provided by Oyster Creek whenever it becomes necessary to use the ambulance service for the transportation of contaminated persons. The local ambulance/first aid organizations as listed in Section 7.2.3.1 can be contacted directly through commercial phone lines from the OCNGS control room or as dispatched by the State EOC.

These changes are reflected in the attached revised PDEP.

**RAI-OC-6**

Evaluation Criteria N.1.a and b in Attachment 1 to NSIR/DPR-ISG-02 state:

- a. An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. Exercises shall be conducted as set forth in 10 CFR 50, as exempted, and in accordance with applicable portion to Section IV.G (Challenging Drills and Exercises) to NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants.*
- b. The licensee shall provide for a critique of the exercise. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested.*

Please explain why there is no provision in Section 11.1, "Drills and Exercises," to Attachment 2 of Exelon's August 29, 2017 letter for exercises and drills being conducted as set forth in 10 CFR 50, as in proposed exemption, and in accordance with applicable portion to Section IV.G to NSIR/DPR-ISG-01, for the scenario to vary from year to year.

**Exelon's Response to RAI-OC-6:** Section 11.1.9, Scenarios, was revised to clarify that exercises and drills conducted at OCNGS will vary from year to year. Section 11.1.9 has been revised as follows:

**11.1.9. Scenarios**

The EP Specialist is responsible for an Emergency Plan drill or exercise. The EP Specialist's responsibilities include developing the exercise/drill scenario, the accident

time sequence, and the selection and training of the Controllers required to evaluate the effectiveness of the OCNGS Emergency Preparedness Program. In accordance with applicable portion to Section IV.G to NSIR/DPR-ISG-01, the drill or exercise scenarios will vary from year to year.

This change is reflected in the attached revised PDEP.

### **RAI-OC-7**

Evaluation Criterion O.3 in Attachment 1 to NSIR/DPR-ISG-02 states:

*Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross First Aid, CPR, or AED for Lay Responders or equivalent.*

Section 11.2.2, "Emergency Response Organization Training," (page 42) to Attachment 2 of Exelon's August 29, 2017 letter states, in part:

Personnel assigned the responsibility of on-shift first aid shall attend first aid training.

Please provide information regarding the level of training to be provided to individuals assigned to licensee first aid teams based on Evaluation Criterion O.3 in Attachment 1 to NSIR/DPR-ISG-02.

**Exelon's Response to RAI-OC-7:** The last line of Section 11.2.2 has been revised to state that: "Personnel assigned the responsibility of first aid response will be trained with courses equivalent to Red Cross First Aid, CPR, or AED for Lay Responders or equivalent." The paragraph in Section 11.2.2 reads as follows:

OCNGS personnel available during emergencies to perform emergency response activities as an extension of their normal duties receive duty specific training. This includes facility on-shift personnel, maintenance, radiation protection, and security personnel. Personnel assigned to liaison with offsite fire departments are trained in accordance with the Fire Protection Program, including mitigating strategies required for a catastrophic loss of SFP inventory. Personnel assigned the responsibility of first aid response will be trained with courses equivalent to Red Cross First Aid, CPR, or AED for Lay Responders or equivalent.

This change is reflected in the attached revised PDEP.

### **REFERENCES:**

1. Letter from Michael P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – *"License Amendment Request - Proposed Changes to the Oyster Creek Emergency Plan for Permanently Defueled Emergency Plan and Emergency Action Level Scheme,"* dated August 29, 2017 (ML17241A065)
2. U.S. Nuclear Regulatory Commission Electronic Mail Request to David Helker, et al., (Exelon Generation Company, LLC) – *Draft RAI for Oyster Creek Permanently Defueled EP and EAL Scheme LAR (CAC No. MG0160; EPID: L-2017-LLA-0307),* dated January 12, 2018
3. U.S. Nuclear Regulatory Commission Electronic Mail Request to David Helker (Exelon Generation Company, LLC) – *"RAI for Oyster Creek Permanently Defueled EP and EAL*

Attachment 1

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*Scheme LAR (CAC No. MG0160; EPID: L-2017-LLA-0307),* dated January 24, 2018  
(ML18024B064)

4. NRC NSIR/DPR-ISG-01, *"Interim Staff Guidance – Emergency Planning for Nuclear Power Plants,"* Revision 0, November 2011 (ADAMS Accession No. ML113010523)

**Attachment 2**  
**Revised Permanently Defueled Emergency Plan (PDEP) Page Mark-ups**

## 2.0 SUMMARY OF EMERGENCY PLAN

### 2.1. Overview of Permanently Defueled Emergency Plan

In the event of an emergency at OCNGS, actions are required to identify and assess the nature of the emergency and to bring it under control in a manner that protects the health and safety of the public and facility personnel.

This plan describes the organization and responsibilities for implementing emergency measures. It describes interfaces with Federal, State of New Jersey, and local organizations that may be notified in the event of an emergency, and may provide assistance.

Emergency services are provided by local public and private entities. Fire support services are provided by the Forked River or Lanoka Harbor Fire Departments, law enforcement support services are provided by local, state, and federal law enforcement authorities, as appropriate. Ambulance service is provided by Lacey Township, and Lanoka Harbor, and Waretown First Aid Squads.

Because there are no postulated accidents that would result in off-site dose consequences that are large enough to require off-site emergency planning, emergencies are divided into two classifications: 1) Notification of Unusual Event (Unusual Event) and 2) Alert. The classification scheme, developed in accordance with NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors", Revision 6, November 2012, has been discussed and agreed upon with responsible offsite organizations and is compatible with their respective emergency plans (CEMP). If determined appropriate by government officials, protective actions may be implemented to protect the public using the existing all hazards emergency planning.

OCNGS is responsible for planning and implementing emergency measures within the site boundary. This plan is provided to meet this responsibility. To carry out specific emergency measures discussed in this plan, detailed emergency plan implementing procedures (EPIP) are established and maintained. A list of EPIPs is included in Appendix 2.

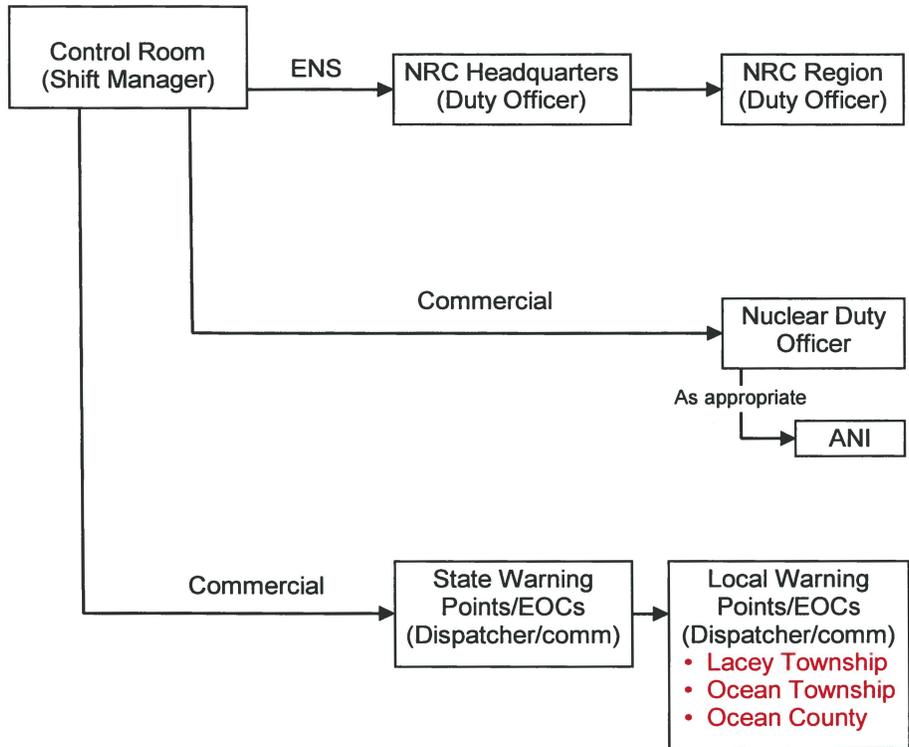
In addition to the description of activities and steps that can be implemented during an emergency, this plan also provides a general description of the steps taken to recover from an emergency situation. It also describes the training, drills, planning, and coordination appropriate to maintain an adequate level of emergency preparedness.

### 2.2. Objectives

The basic objectives of this plan are:

- 1) To establish a system for identification and classification of the emergency condition and initiation of response actions;
- 2) To establish an organization for the direction of activity within the facility to limit the consequences of the incident;
- 3) To establish an organization for control of surveillance activities to assess the extent and significance of any uncontrolled release of radioactive material;

**Figure 6.1: Exelon Notification Scheme**



2. Advise the Emergency Director concerning Radiological EALs
3. Augment the emergency staff as deemed necessary
4. Direct radiological monitoring and analysis
5. Perform Dose Assessment
6. Coordinate decontamination activities
7. Establish and maintain communications as desired by the Emergency Director
8. Maintain a record of event activities

### **7.2.3. Extensions of the Oyster Creek Emergency Response Organization**

#### **7.2.3.1. Local Services**

Arrangements have been made for the extension of the ERO's capability to address emergencies. The following arrangements are in place through letters of agreement for ambulance services, treatment of contaminated and injured patients, fire support services, and law enforcement response as requested by the facility:

1. Transportation of injured personnel using an ambulance service ([Lacey Township, Lanoka Harbor, and Waretown First Aid Squads](#));
2. Treatment of radioactively contaminated and injured personnel at a local support hospital (Community Medical Center and Southern Ocean Medical Center, NJ) as specified in the local support hospital plans; and
3. Fire support services by the Lanoka Harbor Fire Department, Forked River Volunteer Fire Company, and Bayville Fire Department.
4. Law enforcement support services provided by local (Lacey Township Police Department), state (New Jersey State Police), and federal law enforcement authorities as appropriate and response capabilities are documented in the letters of agreement maintained by Security.

Evidence of agreements with participating local services is listed in Appendix 4.

#### **7.2.3.2. Federal Government Support**

Resources of federal agencies appropriate to an emergency condition are made available in accordance with the National Response Framework. This plan and the resources behind it are activated through the facility notification of the NRC.

#### **7.2.3.3. Additional Support**

Dependent upon the emergency condition and response needs, the OCNCS ERO can be augmented by personnel and equipment support from the remainder of the Exelon Nuclear organization. This support capability is outlined in the Emergency Plan Implementing Procedures referenced in Appendix 2.

**Table 7.1: Minimum On-Shift and ERO Staffing Requirements**

MAJOR FUNCTIONAL AREA	MAJOR TASKS	LOCATION	OCNGS EMERGENCY POSITION, TITLE, OR EXPERTISE	# ON-SHIFT	OCNGS AUGMENTED STAFF CAPABILITY FOR RESPONSE IN 2 HOURS
Facility Operations and assessment of Operational Aspects / Fire Brigade	Facility Equipment	Control Room	Non-Certified Operator*	1	-
Emergency Direction and Control	Emergency Director	Control Room	Shift Manager*	1	-
Notification/Communication	Notify Licensee, State local and Federal personnel and maintain communications	Control Room			-
Radiological Accident Assessment and Support of Operational Accident Assessment  Protective Actions (In-Facility)	Onsite Dose Assessment and Monitoring	As Directed by the Emergency Director	Radiation Protection Coordinator	-	1 (may augment the ERO with Radiation Monitoring Personnel as deemed necessary)
	In-Facility Surveys Radiation Protection a. Access Control b. HP Coverage for Repair, Corrective Actions, Search and Rescue, First Aid, and Firefighting c. Personnel Monitoring d. Dosimetry	On-Scene	Radiation Protection Technician*	1	-
Facility Condition Evaluation, Repair, and Corrective Action	Technical Support	As Directed by the Emergency Director	Technical Coordinator	-	1 (may augment the ERO with technical support and emergency repair personnel as deemed necessary)
	Repair, Mitigation, and Corrective Action				
	Develop strategies for search and rescue and fire fighting				
Firefighting	Firefighting	On-Scene	Fire Brigade	Per the Fire Protection Plan	-
Fire Team Leader Rescue Operations/ First Aid	Fire Fighting Rescue and First Aid	On- Scene	Fire Brigade	Per the Fire Protection Plan	-
Site Access Control and Accountability	Security, Firefighting, Communications, and Personnel Accountability	Per the Physical Security Plan	Security Personnel	Per the Physical Security Plan	-

\* On-Shift personnel required to direct or perform site-specific mitigation strategies required for a catastrophic loss of SFP inventory

Primary attention shall be directed to the actual factors involved in the treatment of casualties, such as: control of bleeding, resuscitation including heart and lung, control of bleeding after resuscitation, protection of wounds from bacterial or radioactive contamination and the immobilization of fractures.

Facility personnel provide an initial estimate of the magnitude of surface contamination of the injured and preliminary estimates of total body dose to the injured. Primary rapid and simple decontamination of the surface of the body (when possible and advisable) before transportation to a designated hospital may be carry out as directed or performed by Radiation Protection personnel. When more professional care is needed, injured persons are transported to a local clinic or hospital. Contaminated and injured persons are transported to a dedicated specified facility.

#### **9.4.3. Medical Service Facilities**

Because of the specialized nature of the diagnosis and treatment of radiation injuries, Corporate Emergency Preparedness maintains an agreement with Radiation Emergency Assistance Center/Training Site (REAC/TS). REAC/TS is a radiological emergency response team of physicians, nurses, health physicists and necessary support personnel on 24-hour call to provide consultative or direct medical or radiological assistance at the REAC/TS facility or at the accident site. Specifically, the team has expertise in and is equipped to conduct: medical and radiological triage; decontamination procedures and therapies for external contamination and internally deposited radionuclides, including chelation therapy; diagnostic and prognostic assessments or radiation-induced injuries; and radiation dose estimates by methods that include cytogenetic analysis, bioassay, and in vivo counting.

In addition to REAC/TS, the Facility Annex may identify additional medical consultants, based on agreements with local hospitals, to support personnel training and medical response.

#### **9.4.4. Medical Transportation**

Arrangements are made for prompt ambulance transport of persons with injuries involving radioactivity to designated hospitals. Such service is available on a 24-hour per day basis and is confirmed by letter of agreement. Radiation monitoring services shall be provided by Oyster Creek whenever it becomes necessary to use the ambulance service for the transportation of contaminated persons. [The local ambulance/first aid organizations as listed in Section 7.2.3.1 can be contacted directly through commercial phone lines from the OCNGS control room or as dispatched by the State EOC.](#)

A qualified Radiation Protection person shall accompany the ambulance to the hospital. Additional Radiation Protection personnel may be contacted and dispatched to local hospitals to assist in the monitoring and decontamination of the injured victim and hospital and ambulance facilities and personnel.

#### **9.5. Protective Actions for Onsite Personnel**

This section of the plan describes the means for controlling emergency worker radiological exposures during an emergency, as well as the measures that are used by Exelon to provide

## 10.0 EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

### 10.1. Emergency Notification

The Shift Manager is responsible for the notification of an emergency declaration to the State of New Jersey. Notification is made within 60 minutes after the availability of indications to operators that an EAL threshold has been reached.

The format and contents of the initial message between the facility and State authorities are specified in notification procedures and have been established with the review and agreement of responsible state authorities.

The NJ Office of Emergency Management may request the following information from OCNCS:

1. Date and time of the incident;
2. Emergency classification;
3. Status of the facility;
4. Whether a release has occurred, is occurring, or is anticipated to occur;
5. Actual or projected dose rates at the Site boundary;
- ~~5.6. Whether or not Offsite assistance is needed;~~

Follow-up reports are provided as additional information describing the emergency situation becomes available and on an as-needed basis until such time that the emergency condition has been terminated.

### 10.2. Public Information

Any emergency generates a continuous and intensive demand for up-to-date information. The spokesperson function would typically be performed by Communications personnel. Communication personnel will be notified of an emergency declaration and would serve as a spokesperson. However, the function could also be performed by plant or corporate management. Upon receiving notification of an emergency declaration, the spokesperson contacts the Control Room and receives a brief description of the event.

The spokesperson monitors media activity and coordinates with senior management to address rumors and disseminate information to the public. The spokesperson will participate in news conferences as appropriate with Federal, State and local emergency response organizations conducted from the site or at other locations, as necessary. The spokesperson is available for media inquiries and the positional duties include maintaining liaison with local media and coordinating with Federal, State and local emergency response organizations to disseminate appropriate information regarding an emergency at OCNCS. Federal, State and local emergency response organizations maintain the capability to disseminate appropriate information regarding an emergency at OCNCS.

- Facility Intercom System
- Commercial Telephone System

#### 11.1.3. Augmentation Drills

Semi-annual, off hours, unannounced, communications drill, utilizing commercial telephone, to estimate emergency personnel response times. No actual travel is required. Participants provide an estimation of the time it would take to report to their designated ERO position. This drill shall serve to demonstrate the capability to augment the on-shift staff after declaration of an emergency.

#### 11.1.4. Fire Drills

To test and evaluate the response and training of the facility's fire brigade, fire drills are conducted in accordance with the OCNGS Fire Protection Program.

#### 11.1.5. Medical Drills

To evaluate the training of the facility's medical response and offsite medical response (ambulance and hospital), a medical drill is conducted annually with a simulated contaminated injured individual. This drill can be performed as part of an Emergency Plan drill or exercise.

#### 11.1.6. Radiological Monitoring Drills

Facility environs and radiological monitoring drills are conducted annually. These drills include monitoring of accessible areas within the facility and include collection and analysis of airborne sample media, communications, and record keeping performed by members of the emergency team. This drill can be performed as part of an Emergency Plan drill or exercise.

#### 11.1.7. Health Physics Drills

Health Physics drills are conducted semi-annually involving response to, and analysis of, simulated elevated in-facility airborne and liquid samples and direct radiation measurements in the environment. A drill can be performed as part of an Emergency Plan drill or exercise.

#### 11.1.8. Security Drills

The purpose of the security drill is to maintain key skills, specifically the site-specific team skills necessary to mitigate security-based events. Security drills are conducted in accordance with the OCNGS Physical Security Plan.

#### 11.1.9. Scenarios

The EP Specialist is responsible for an Emergency Plan drill or exercise. The EP Specialist's responsibilities include developing the exercise/drill scenario, the accident time sequence, and the selection and training of the Controllers required to evaluate the effectiveness of the OCNGS Emergency Preparedness Program. [In accordance with applicable portion to Section IV.G to NSIR/DPR-ISG-01, the drill or exercise scenarios will vary from year to year.](#) ~~Emergency drills or exercises will have scenarios that vary from year to year.~~

### 11.1.11. Emergency Plan Audit

The OCNCS Emergency Plan is independently audited. The audit is conducted as part of the Quality Assurance Program in accordance with 10 CFR 50.54(t). All aspects of emergency preparedness, including exercise documentation, capabilities, procedures, and interfaces with state and local governments are audited.

## 11.2. Training

Radiological emergency response training is provided to those who may be called on to assist in an emergency. OCNCS Management is responsible to ensure all members of the Emergency Response Organization receive the required initial training and continuing training.

### 11.2.1. Emergency Response Training

The training program for ERO personnel is based on applicable requirements of Appendix E to 10 CFR Part 50 and position-specific responsibilities as defined in the PDEP. Emergency response personnel in the following categories receive initial training and annual retraining.

### 11.2.2. Emergency Response Organization Training

Shift Managers/Emergency Directors, Technical Coordinators, and Radiation Protection Coordinators shall have training conducted such that proficiency is maintained on topics listed below. These topics should be covered as a minimum on an annual basis.

- Emergency Action Level Classification
- Dose Assessment
- Federal, State, and local notification procedures
- ERO Augmentation
- Emergency Exposure Control
- Mitigating strategies for a catastrophic loss of spent fuel pool inventory

OCNCS personnel available during emergencies to perform emergency response activities as an extension of their normal duties receive duty specific training. This includes facility on-shift personnel, maintenance, radiation protection, and security personnel. Personnel assigned to liaison with offsite fire departments are trained in accordance with the Fire Protection Program, including mitigating strategies required for a catastrophic loss of SFP inventory. Personnel assigned the responsibility of ~~on-shift first aid shall attend first aid training~~ response will be trained with courses equivalent to Red Cross First Aid, CPR, or AED for Lay Responders or equivalent.

### 11.2.3. General Employee Training

An overview of the Emergency Plan is given to all personnel allowed unescorted access into the Protected Area at OCNCS. Personnel receive this information during initial and requalification training. This training includes identification of the emergency alarm, the fire alarm and the steps to follow for a facility and site evacuation.

**APPENDIX 1: REFERENCES**

19. ANI/MAELU Engineering Inspection Criteria for Nuclear Liability Insurance, Section 6.0, Rev. 1, Emergency Planning
20. NRC RIS 2006-12, "Endorsement of Nuclear Energy Institute Guidance Enhancement to Emergency Preparedness Programs for Hostile Action."
21. NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events"
22. NRC Information Notice 2009-01, "National Response Framework"
- 22-23. NRC NSIR/DPR-ISG-01, "Interim Staff Guidance - Emergency Planning for Nuclear Power Plants," Revision 0, November 2011 (ADAMS Accession No. ML113010523)

**Attachment 3**

**Clean Copy - Permanently Defueled Emergency Plan (PDEP)**

**EXELON NUCLEAR  
OYSTER CREEK  
PERMANENTLY DEFUELED  
EMERGENCY PLAN (PDEP)**



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## 1.0 INTRODUCTION

The Permanently Defueled Emergency Plan (PDEP) describes the facility's plan for responding to emergencies that may arise at the Oyster Creek Nuclear Generating Station (OCNGS) while in a permanently shutdown and defueled configuration. Once OCNGS has certified to the Nuclear Regulatory Commission (NRC) that the facility has permanently ceased operations and that all fuel has been permanently removed from the reactor vessel, as required by 10 CFR 50.82(a)(1)(i) and (ii), all irradiated fuel will be stored in the Independent Spent Fuel Storage Installation (ISFSI) and in the Spent Fuel Pool (SFP). In this condition, no reactor operations can take place and the station is prohibited from emplacement or retention of fuel in the reactor vessel. An analysis of the possible design basis events and consequences is presented in the evaluation of the Defueled Safety Analysis Report (DSAR) accident assessment. This PDEP adequately addresses the risks associated with OCNGS's current conditions.

The analysis of the potential radiological impacts of postulated design basis accident in a permanently defueled condition indicates that any releases beyond the Site Boundary would be below the Environmental Protection Agency (EPA) Protective Action Guide (PAG) exposure levels. Additionally, postulated beyond design basis accidents have been analyzed showing that due to their slow progression there is sufficient time available to initiate appropriate mitigating actions to protect the health and safety of the public. Therefore, the PDEP adequately addresses the risk associated with OCNGS's permanently defueled condition and continues to provide adequate protection for facility personnel and the public. Exposure levels, which warrant pre-planned response measures, are limited to onsite areas. For this reason, the OCNGS's PDEP is focused on onsite actions.

### 1.1. Purpose

The purpose of the PDEP is to assure an adequate level of preparedness by which to cope with a spectrum of emergencies that could be postulated to occur, including the means to minimize radiation exposure to facility personnel. This plan integrates the necessary elements to provide effective emergency response considering cooperation and coordination of off-site organizations expected to respond to potential emergencies.

### 1.2. Scope

The PDEP has been developed to respond to potential radiological emergencies at OCNGS considering the permanently shut down and defueled status. Because there are no postulated accidents that would result in dose consequences that are large enough to require offsite emergency planning, the overall scope of this plan delineates the actions necessary to safeguard onsite personnel and minimize damage to property. If determined appropriate by government officials, protective actions may be implemented to protect the public using an all hazards approach to emergency planning.

The concepts presented in this plan address the applicable regulations stipulated in 10 CFR 50.47, "Emergency Plans" and 10 CFR Part 50, Appendix E, "Emergency Planning

and Preparedness for Production and Utilization Facilities," as exempted. Exemptions to selected portions of 10 CFR 50.47(b), 10 CFR 50.47(c)(2) and 10 CFR Part 50, Appendix E were previously approved by the NRC. The plan is consistent with the remaining applicable guidelines established in NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Facilities" (NUREG-0654). Appendix 3 contains a cross-reference to the applicable guidance in NUREG-0654.

Abbreviations and acronyms used in this plan are included in Appendix 5.

## **2.0 SUMMARY OF EMERGENCY PLAN**

### **2.1. Overview of Permanently Defueled Emergency Plan**

In the event of an emergency at OCNGS, actions are required to identify and assess the nature of the emergency and to bring it under control in a manner that protects the health and safety of the public and facility personnel.

This plan describes the organization and responsibilities for implementing emergency measures. It describes interfaces with Federal, State of New Jersey, and local organizations that may be notified in the event of an emergency, and may provide assistance.

Emergency services are provided by local public and private entities. Fire support services are provided by the Forked River or Lanoka Harbor Fire Departments, law enforcement support services are provided by local, state, and federal law enforcement authorities, as appropriate. Ambulance service is provided by Lacey Township, Lanoka Harbor, and Waretown First Aid Squads.

Because there are no postulated accidents that would result in off-site dose consequences that are large enough to require off-site emergency planning, emergencies are divided into two classifications: 1) Notification of Unusual Event (Unusual Event) and 2) Alert. The classification scheme, developed in accordance with NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors", Revision 6, November 2012, has been discussed and agreed upon with responsible offsite organizations and is compatible with their respective emergency plans (CEMP). If determined appropriate by government officials, protective actions may be implemented to protect the public using the existing all hazards emergency planning.

OCNGS is responsible for planning and implementing emergency measures within the site boundary. This plan is provided to meet this responsibility. To carry out specific emergency measures discussed in this plan, detailed emergency plan implementing procedures (EPIP) are established and maintained. A list of EPIPs is included in Appendix 2.

In addition to the description of activities and steps that can be implemented during an emergency, this plan also provides a general description of the steps taken to recover from an emergency situation. It also describes the training, drills, planning, and coordination appropriate to maintain an adequate level of emergency preparedness.

### **2.2. Objectives**

The basic objectives of this plan are:

- 1) To establish a system for identification and classification of the emergency condition and initiation of response actions;
- 2) To establish an organization for the direction of activity within the facility to limit the consequences of the incident;
- 3) To establish an organization for control of surveillance activities to assess the extent and significance of any uncontrolled release of radioactive material;

- 4) To identify facilities, equipment and supplies available for emergency use;
- 5) To establish an engineering support organization to aid the facility personnel in limiting the consequences of and recovery from an event;
- 6) To establish the basic elements of an emergency recovery program;
- 7) To specify a system for coordination with federal, state, and local authorities and agencies for offsite support;
- 8) To develop a communications network between the facility and offsite authorities to provide notification of emergency situations;
- 9) To develop a training and Emergency Plan exercise program to assure constant effectiveness of the plan.

### **2.3. Actions in an Emergency**

This plan is activated by the Shift Manager upon identification of an emergency situation based upon Emergency Action Level (EAL) criteria. The emergency measures described in the subsequent sections and emergency plan implementing procedures are implemented in accordance with the classification and nature of the emergency at the direction of the Shift Manager. Regulatory authorities and offsite support organizations are notified in accordance with this plan. The Shift Manager has authority and responsibility for control and mitigation of the emergency, including emergency response resources, coordination of radiological assessment activities, and recovery implementation.

If an emergency condition develops, the Shift Manager assumes the role of Emergency Director, including responsibilities for initiating emergency actions to limit the consequences of the incident and to bring the facility into a stable condition. The individual must:

- 1) Recognize the emergency condition by observation of EALs;
- 2) Classify the accident in accordance with the emergency classification system;
- 3) Initiate emergency procedure(s) applicable to the event;
- 4) Activate the facility emergency alarm system;
- 5) Notify state authorities of emergency conditions;
- 6) Notify the NRC using the Emergency Notification System (ENS);
- 7) Use the notification plan to notify appropriate personnel as set forth in Figure 8.1; and
- 8) Direct and coordinate all emergency response efforts until overall responsibility is assumed by another individual qualified as an Emergency Director.

### **2.4. Emergency Response Facilities**

The emergency response facilities, which are utilized by the Emergency Response Organization (ERO), are described in Section 5.0. Key site personnel are dispatched to perform accident assessments, implement corrective actions, and analyze accident data.

## 2.5. Mobilization

The mobilization scheme is based on the emergency notification plan and is shown in Figure 8.1. The notification system utilizes the facility public address system, commercial telephone lines, and the ERO notification system to notify and mobilize facility personnel. The mobilization scheme ensures that specific technical disciplines can be augmented within appropriate time frames. On-site staff are informed of an emergency condition through the use of the plant public address system, office telephone and/or wireless devices capable of receiving telephone calls and text messages. In the event that personnel required to staff emergency positions are not on-site at the time an emergency is declared, they may be contacted by commercial telephone including land lines and/or wireless devices capable of receiving telephone calls and text messages. Mobilization of the ERO will be conducted under the direction of the Emergency Director, according to personnel assignments and telephone numbers maintained in various telephone directories. Section 7.2, Figure 7.1 and Table 7.1 outline the minimum staffing requirements for the ERO at OCNCS.

## 2.6. State and Local Government Notification and Response

Notification to the responsible State and County authorities is required within 60 minutes after the availability of indications to operators that an EAL threshold has been reached. The commercial telephone network serves as the primary means to provide emergency notification to State and County agencies. It is used to provide initial and updated notifications and for general information flow between these agencies.

In the event the commercial telephone system is unavailable, wireless communications can be used to make emergency notifications. In addition, electronic means may be used to transmit the notification message.

As part of the State's CEMP, a cooperative arrangement exists among the New Jersey State authorities and OCNCS concerning radiological emergency preparedness. OCNCS's emergency classification system and notification messages are reviewed with the State of New Jersey on an annual basis.

## 2.7. Federal Government Notification and Response

Notification to the NRC is made using the ENS as soon as possible after State notifications and within 60 minutes of event classification or change in classification. Once notified of an emergency, the NRC evaluates the situation and determines the appropriate NRC response. Depending on the severity of the accident and the emergency classification declared, the NRC activates its incident response operations in accordance with the NRC Incident Response Plan. If the emergency warrants, the NRC notifies the Federal Emergency Management Agency (FEMA) and other appropriate federal agencies to activate the federal emergency response organization in accordance with the National Response Framework (NRF). The NRF makes available the resources and capabilities of federal agencies to support facility, state and local governments, as necessary to respond to the specific nature of the emergency. Principal participants are the NRC, FEMA, Department of Energy (DOE), and Environmental Protection Agency (EPA).

## **2.8. Technical Support**

In the event of an emergency that requires personnel and other support resources beyond those available within the OCNGS organization, augmentation is available from other Exelon facilities and can be requested from various contractors. Additional technical and manpower support are provided to OCNGS through support plans listed in Appendix 2, List of Emergency Plan Implementing Procedures.

## **2.9. Mitigation of Consequences of Beyond Design Basis Events**

Strategies to mitigate a loss of SFP inventory and prevent a zirconium fire are contained within Abnormal Operating Procedure, ABN-16 Loss of Fuel Pool Cooling, EDMG-01, Extensive Damage Mitigation Guidelines, and FSG-00, Extended Loss of AC Power FLEX Strategy. These mitigative strategies were developed as a result of NRC Order on Mitigative Strategies (EA-02-026) and implement the requirements of License Condition 2.C.8, "Mitigation Strategy License Condition."

### 3.0 SITE DESCRIPTION

#### 3.1. Facility Description

OCNGS is operated by Exelon Generation. OCNGS ceased power operations in December 2019, and certified that fuel had been permanently removed from the reactor vessel. The 10 CFR Part 50 license for OCNGS will no longer authorize operation of the reactor, emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2). OCNGS consists of a permanently shutdown boiling water reactor. An ISFSI is located on the facility site. The arrangement of the major OCNGS facilities is shown in Figure 3.1: OCNGS Site Arrangement.

The OCNGS site is located near the Atlantic Ocean within the State of New Jersey. The facility site, approximately 152 acres, is in Lacey and Ocean Townships, Ocean County. OCNGS is about two miles inland from the shore of Barnegat Bay and seven miles west northwest of Barnegat Light on the Atlantic shorefront. The site is approximately nine miles south of Toms River, New Jersey, about fifty miles east of Philadelphia, Pennsylvania, and sixty miles south of Newark, New Jersey.

The major transportation routes include the Garden State Parkway and U.S. Highway 9, running north and south; U.S. Highway 72, State Highways 37 and 70, New Jersey Routes 532, 530, 554 and Lacey Road running east and west, which serve primarily as feeder routes to the Garden State Parkway and U.S. Route 9. U.S. Highway 9 provides the eastern most site boundary. Exelon owns approximately 708 acres of property to the east of Route 9 extending to the Barnegat Bay. U.S. Highway 9 provides the only access routes to the site by land. Water access to the site is provided by the Intercostal Waterway, which runs through Barnegat Bay. A general area map showing the relative location of the OCNGS site is shown as Figure 3.2: OCNGS Site Relative Location.

#### 3.2. Area Characteristics and Land Use

##### Owner Controlled Area, Exclusion Area and Low Population Zone

The Owner Controlled Area (OCA) for the OCNGS includes all areas within the site perimeter security fence. At Oyster Creek, the minimum distance from the centerline of the OCNGS Reactor Building to the eastern OCA fence is approximately 800 feet.

The Exclusion Area for the OCNGS is a 1358 ft. radius as measured from the centerline of the Reactor Building. The licensee retains complete authority to determine and maintain sufficient control of all activities including the authority to exclude or remove personnel and property from land areas within the exclusion area.

##### Population and Population Distribution

The nearest population center is Toms River in Dover Township, 9.5 miles north of the site.

An appreciable variance in population density occurs during June, July and August due to seasonal transient vacationers. The Oyster Creek area, particularly the bay and seashores, is

a summer vacation area for the mid-Atlantic states. This seasonal population fluctuation occurs primarily in the eastern sectors.

Local Industry and Military Facilities

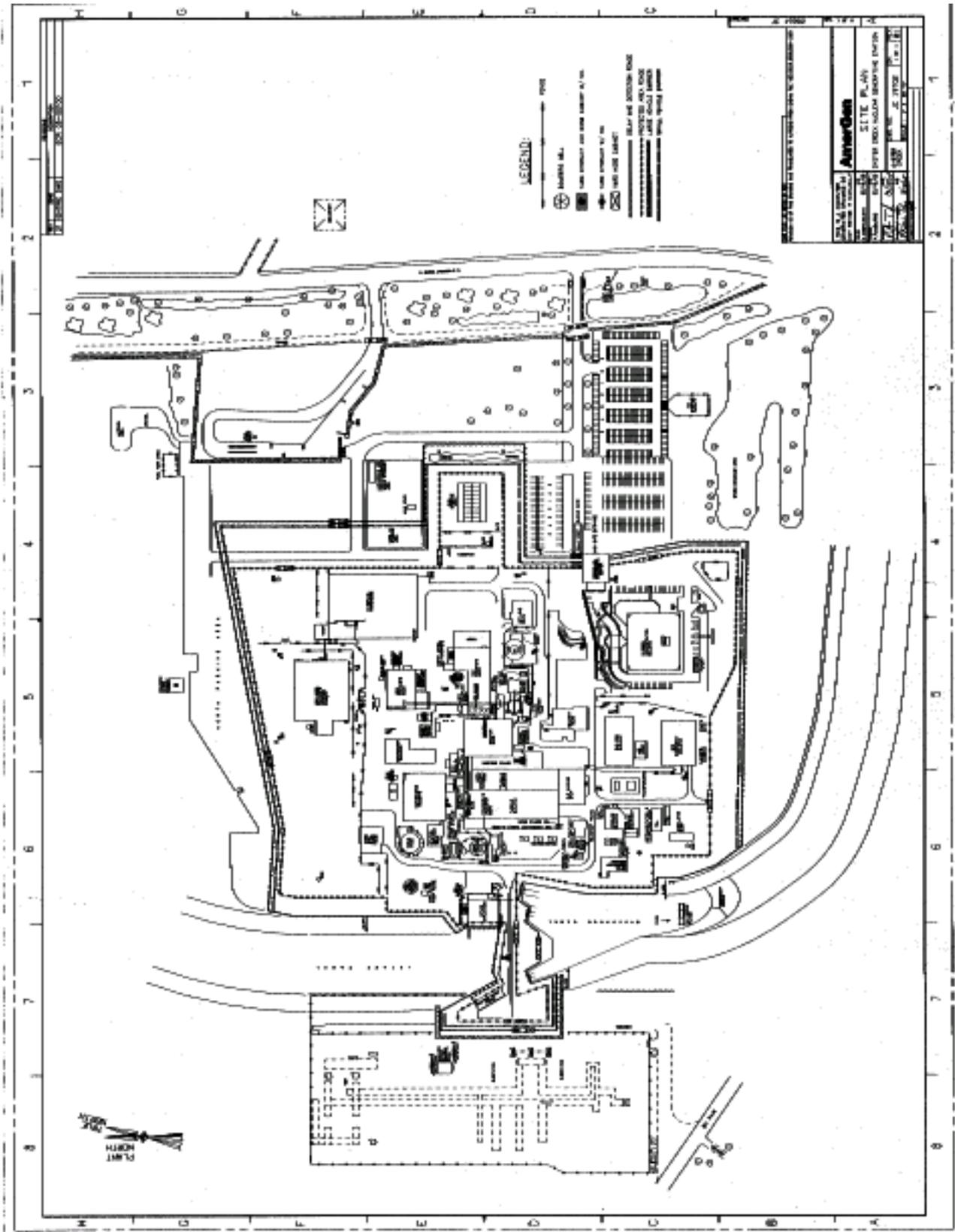
Typical industries within 10 miles of the OCNGS site are found in the Oyster Creek UFSAR.

The area within 40 miles of the site is comprised primarily of forest, vacant land, or farmland. Only about 25 percent of the land is developed. No major industry exists within a 10-mile radius of the site, although several small industrial concerns exist in the Toms River area.

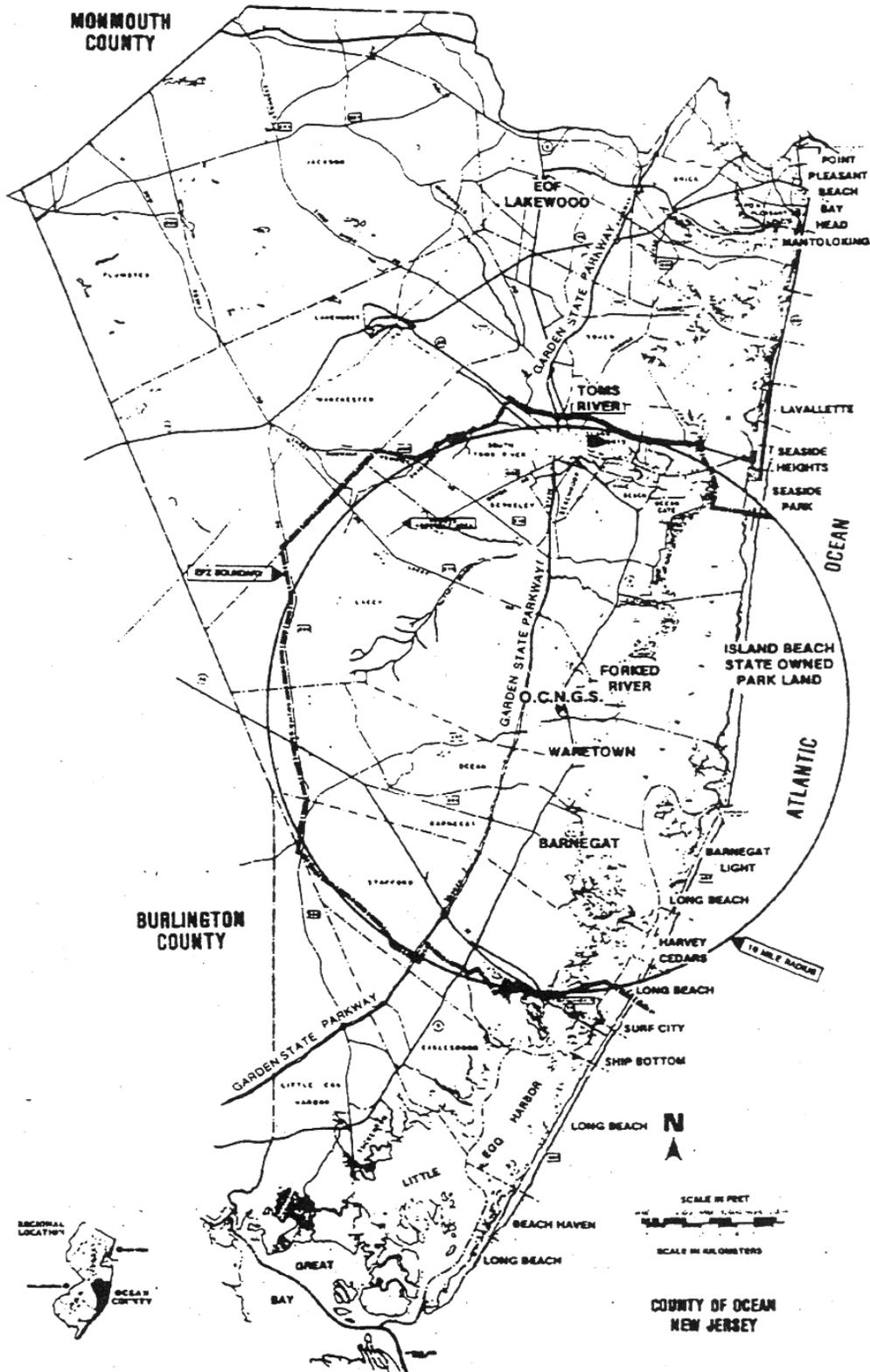
The nearest military installations are Fort Dix, New Jersey (approximately 35 miles northwest), McGuire Air Force Base (on the Fort Dix Military Reserve), and Lakehurst Naval Air Station (14 miles north). There is also a military reserve approximately 12 miles west along U.S. Route 72, utilized as a practice bombing range.

There is one general aviation airport, Robert J. Miller Airpark County Airport, approximately 9 miles northwest.

Figure 3.1: OCNGS Site Arrangement



**Figure 3.2: OCNGS Site Relative Location**



## 4.0 EMERGENCY CLASSIFICATION SYSTEM

The emergency classification system covers an entire spectrum of possible radiological and non-radiological emergencies at the OCNCS. The emergency classification system categorizes accidents and emergency situations, according to severity, into two emergency classification levels: Unusual Event and Alert.

The incidents leading to each of the emergency classifications are further identified by certain measurable and observable indicators of facility conditions or EALs. EALs addressed in Addendum 1 aid the operator in recognizing the potential of an incident immediately and assure that the first step in the emergency response is carried out. The classification of the event may change as the conditions change. OCNCS maintains the capability to assess, classify and declare an emergency condition in accordance with site procedures.

Emergency classifications are to be made as soon as conditions are present and recognizable for the classification in accordance with the applicable EALs; but within 30 minutes in all cases after the availability of indications to plant operators that an EAL threshold has been reached.

Incidents may be classified in a lower emergency classification level first, and then upgraded to the higher level if the situation deteriorates. An event will be terminated as described in Section 8.3, "Emergency Termination Criteria."

EALs and EAL bases were derived from NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors" Rev. 6, for classifying emergencies. Specifically, Appendix C of NEI 99-01, Rev. 6 contains a set of Initiating Conditions/ EALs for permanently defueled nuclear power plants that had previously operated under a 10 CFR Part 50 license and have permanently ceased operations. The classification system referenced in NEI 99-01, Rev. 6 has been endorsed by the NRC and provides a standard method for classifying emergencies.

### 4.1. Unusual Event

**EVENTS ARE IN PROGRESS OR HAVE OCCURRED WHICH INDICATE A POTENTIAL DEGRADATION OF THE LEVEL OF SAFETY OF THE FACILITY OR INDICATE A SECURITY THREAT TO FACILITY PROTECTION HAS BEEN INITIATED. NO RELEASES OF RADIOACTIVE MATERIAL REQUIRING OFFSITE RESPONSE OR MONITORING ARE EXPECTED UNLESS FURTHER DEGRADATION OF SAFETY SYSTEMS OCCURS.**

Unusual Event conditions do not cause serious damage to the facility. The purpose of the Unusual Event declaration is to:

- 1) provide for an increased awareness of abnormal conditions;
- 2) ensure that the first step in any response later found to be necessary has been carried out;
- 3) bring the ERO to a state of readiness;
- 4) provide for systematic handling of information and decision-making, and

5) augment on-shift personnel, if deemed necessary by the Emergency Director.

See Addendum 1 for a complete list of EALs corresponding to an Unusual Event.

#### 4.2. Alert

**EVENTS ARE IN PROGRESS OR HAVE OCCURRED WHICH INVOLVE AN ACTUAL OR POTENTIAL SUBSTANTIAL DEGRADATION OF THE LEVEL OF SAFETY OF THE FACILITY OR A SECURITY EVENT THAT INVOLVES PROBABLE LIFE THREATENING RISK TO SITE PERSONNEL OR DAMAGE TO SITE EQUIPMENT BECAUSE OF HOSTILE ACTION. ANY RELEASES ARE EXPECTED TO BE LIMITED TO SMALL FRACTIONS OF THE EPA PAG EXPOSURE LEVELS.**

The purpose of the Alert declaration is to:

- 1) activate the Emergency Response Organization to perform event mitigation and radiation monitoring, if required,
- 2) provide the State of New Jersey and the NRC with current information on facility status, and
- 3) ensure that all necessary resources are being applied to accident mitigation.

The Alert status shall be maintained until termination of the event occurs. Offsite authorities will be informed of the change in the emergency status and the necessary documentation shall be completed as specified in the EIPs.

Facility responses associated with this event classification assure that sufficient emergency response personnel are mobilized and respond to event conditions. Actual releases of radioactivity which exceed Technical Specification limits may be involved, thus radiation monitoring and dose projection may be required.

See Addendum 1 for a complete list of EALs corresponding to an Alert.

#### 4.3. Emergency Classification System Review by State Authorities

The emergency classification system specified above and the EALs presented in Addendum 1, are reviewed with the state authorities of New Jersey annually.

## **5.0 EMERGENCY RESPONSE FACILITIES AND EQUIPMENT**

Following the declaration of an emergency, the activities of the emergency response organization are coordinated in the Control Room. Descriptions of OCNCS facilities and assessment capabilities are presented below.

### **5.1. Control Room**

The Control Room is where facility systems and equipment parameters are monitored and is continuously occupied as per Technical Specifications. Control Room personnel assess facility conditions, evaluate the magnitude and potential consequences of abnormal conditions, initiate preventative, mitigating and corrective actions and perform notifications. The Control Room is the onsite center for emergency command and control.

The Control Room staff coordinates all phases of emergency response and corrective action required to restore the facility to a safe condition. Classification and subsequent declaration of the appropriate emergency condition by the Shift Manager may result in activation of the ERO. The Control Room staff's attention focuses on mitigating the emergency as the ERO reports to their designated locations and is delegated emergency functions.

When activated, the ERO reports to the Emergency Director to assist the on-shift staff in the assessment, mitigation and response to an emergency and to support the dispatch of emergency teams. The composition of the ERO is addressed in Section 7.2.

ERO activation may be modified or suspended if the safety of personnel may be jeopardized by a security event or other event hazardous to personnel.

The Control Room contains communications equipment, emergency radiation monitoring equipment, and emergency respiratory devices. Adjacent rooms store radiation protection clothing and other emergency supplies. The ERO has access to up-to-date technical documentation, including drawings, system information and procedures to enable mitigation planning and support of Control Room staff.

A general assembly area for emergency mitigation and radiation protection personnel is maintained.

### **5.2. Assessment Capability**

The activation of the Emergency Plan and the continued assessment of accident conditions require monitoring and assessment capabilities. OCNCS maintains and operates on-site monitoring systems needed to provide data that is essential for initiating emergency measures and performing accident assessment, including dose assessment and assessing the magnitude of a release. This includes monitoring systems for plant processes, radiological conditions, meteorological conditions, and fire hazards. The essential monitoring systems needed are incorporated in the EALs specified in Addendum 1. This section briefly describes monitoring systems as well as other assessment capabilities.

### 5.2.1. Process Monitors

Annunciator and computer alarms are provided for a variety of parameters including the SFP cooling system to indicate SFP level, temperature, and pump status.

The manner in which process monitors are used for accident recognition and classification is given in the detailed EAL listings in Addendum 1.

### 5.2.2. Radiological Monitors

A number of radiation monitors and monitoring systems are provided on process and effluent liquid and gaseous lines that serve directly or indirectly as discharge route for radioactive materials. These monitors, which include Control Room readout and alarm functions, exist in order that appropriate action can be initiated to limit fuel damage and/or contain radioactive material.

The onsite Radiation Monitoring System (RMS) contributes to personnel protection, equipment monitoring, data gathering, and accident assessment by measuring and recording radiation levels and concentrations of radioactive material at selected locations within the facility. The RMS alarms and initiates required emergency actions when radiation levels or radionuclide concentrations exceed predetermined levels. Area, liquid, and atmospheric monitoring subsystems are required to perform these functions.

Specific details on these monitoring systems such as location, type, etc., are contained in the DSAR.

The data from these subsystems are displayed by readout in the Control Room. Recorders and/or the facility process computer located in the Control Room.

#### 5.2.2.1. Area Radiation Monitors

Various reactor building areas are provided with area Geiger-Muller type radiation monitors. Each in-facility monitor has a remote indicator, an alarm and is recorded on one of two multi-channel recorders in the Control Room.

The monitors are provided with an upscale alarm that is set using past facility operating experience and warns of an abnormally high radiation level and each monitor is provided with a downscale alarm which warns of instrument channel failure.

#### 5.2.2.2. Process Liquid Monitoring Subsystem

The Process Liquid Monitoring Subsystem provides the continuous monitoring of two process liquid streams: the reactor building closed cooling water system and the reactor service water discharge. The reactor building closed cooling water probe is located at the discharge header of the cooling water pumps. The service water monitor is located in the service water discharge of the closed cooling water heat exchanger.

For liquid releases, the radionuclide concentration at any downstream location is determined by taking liquid effluent concentrations and applying the effluent flow rate and volumetric flow rate of the receiving water. Downstream users will be notified to curtail intake if the projected concentration is above the level specified in the procedures.

### 5.2.2.3. Atmospheric Radiation Monitoring

Atmospheric Radiation Monitoring is provided by Main Stack RAGEMS (Radioactive Gas Effluent Monitoring System) and Reactor Building Ventilation Monitoring.

RAGEMS has been installed to comply with NUREG-0737. This system will provide for a continuous monitoring of noble gas releases and continuous particulate samplers. The system is designed to detect noble gas. Particulate samples must be manually analyzed to provide isotopic concentrations of halogens and particulates. RAGEMS data is accessible from recorders in the control room and/or by accessing the RAGEMS system computers, or the facility computer system.

The Reactor Building Ventilation Monitoring Subsystem provides continuous monitoring of the gaseous discharges from the Reactor Building Ventilation systems through the use of two Geiger-Mueller detectors located upstream of the ventilation outlet isolation valves. The downscale alarm indicates instrument failure, while the upscale trip is set at an acceptable radiation concentration.

### 5.2.3. **Meteorological and Seismic**

The National Weather Service (NWS) Mt. Holly, NJ office provides meteorological information (e.g., wind speed, temperature, and wind direction) from several locations in the vicinity of OCNGS. This information is available by telephone or the internet.

Seismic information can be obtained from the U.S. Geological Surveys (USGS) National Earthquake Center by telephone or internet.

### 5.2.4. **Fire Detection and Suppression Equipment**

The fire protection system has been designed to detect and extinguish potential fires. The system is designed in accordance with the standards of the National Fire Protection Association (NFPA) and recommendations of the Nuclear Electric Insurance Limited (NEIL). Fire detectors are located throughout the facility with alarms and indicators in the Control Room. The fire protection system is described in the Oyster Creek Fire Protection Program.

### 5.2.5. **Assessment Facilities and Equipment**

Offsite fire departments of Forked River and Lanoka Harbor notify the facility of any fire which might have an impact on the facility. Local Law Enforcement Agencies notify Facility Security of any situation in the area which might have an impact on the facility.

OCNGS has access to outside analytical assistance and laboratory facilities from other non-affected Exelon nuclear sites, State and Federal agencies and other utilities. These laboratories can act as backup facilities in the event that the affected facility's radiochemistry counting room and laboratory become unusable or the offsite radiological monitoring and environmental sampling operation exceeds the capacity or capability of the facility laboratory during an emergency. It is estimated that these laboratories will be able to respond within several hours from initial notification.

The above facilities have the capability to perform laboratory analyses of various environmental samples (e.g., terrestrial, marine and air). It is also estimated that the analytical

assistance and laboratory support will be able to respond within four (4) to eight (8) hours from initial notification.

## 6.0 COMMUNICATIONS

Various modes of communication are available to facility staff to transmit information within OCNGS and to various locations offsite during normal and emergency conditions.

This section describes the provisions utilized for prompt communications among principal emergency response organizations, communications with the ERO and communications with the general public. Figure 6-1 depicts the notification paths and the organizational titles from the Exelon Nuclear Emergency Response Facility (ERF) to federal, state and local emergency response organizations, and industry support agencies.

Exelon Nuclear has extensive and reliable communication systems installed at OCNGS. Examples of the communications network include systems such as telephone lines, fiber-optic voice channels, cell phones, satellite phones, mobile radio units, handi-talkies and computer peripherals. This network provides:

1) Local Commercial Telephone System:

The commercial telephone system (see Section 2.6) is the primary emergency notification system between OCNGS, State, and county agencies and is used to provide initial and follow-up notifications and for general information flow between these agencies.

In addition, facility communication links exist to ensure appropriate information transfer capabilities during an emergency. The facility may also utilize its Public Address System, facility radios and notification devices to augment its emergency communications.

2) ERO Notification:

In the event that personnel required to staff ERO positions are not on-site at the time an emergency is declared, they may be contacted by commercial telephone including land lines and/or wireless devices capable of receiving telephone calls and text messages. Mobilization of the ERO will be conducted under the direction of the Emergency Director, according to personnel assignments and telephone numbers maintained in various telephone directories.

3) NRC Communications (ENS)

Communications with the NRC Operations Center will be performed via the NRC ENS circuit or commercial telephone line. Information is normally communicated from an approved NRC Event Notification Worksheet prior to establishing an open ENS line. Installation and use of these NRC telephones is under the direction of the NRC.

Emergency Notification System (ENS):

Dedicated telephone equipment is in place between the Control Room and the NRC. This line is used for NRC event notifications and status updates.

4) Radio Communications

Radio communication equipment used during normal facility operations will be used in an emergency to communicate with mobile units and to provide backup to the telephone system.

OCNGS, base stations are located in the Control Room. The Control Room has the capability of transmitting and receiving on the State Emergency Radio (EMRAD) Network that provides a communication path with the State of New Jersey and Ocean County Emergency Management Centers.

5) Facility Warning System

In addition, facility communication links exist to ensure appropriate information transfer capabilities during an emergency. The facility may also utilize its Facility Warning System, facility radios and pagers to augment its emergency communications. The Facility Warning System consists of the following:

1) Alarms: Audible alarms are a quick and effective means of communicating emergency warnings on the site. Alarms currently installed at Oyster Creek include:

- Facility Emergency Alarm
- Fire Alarm
- Reactor Building Evacuation Alarm

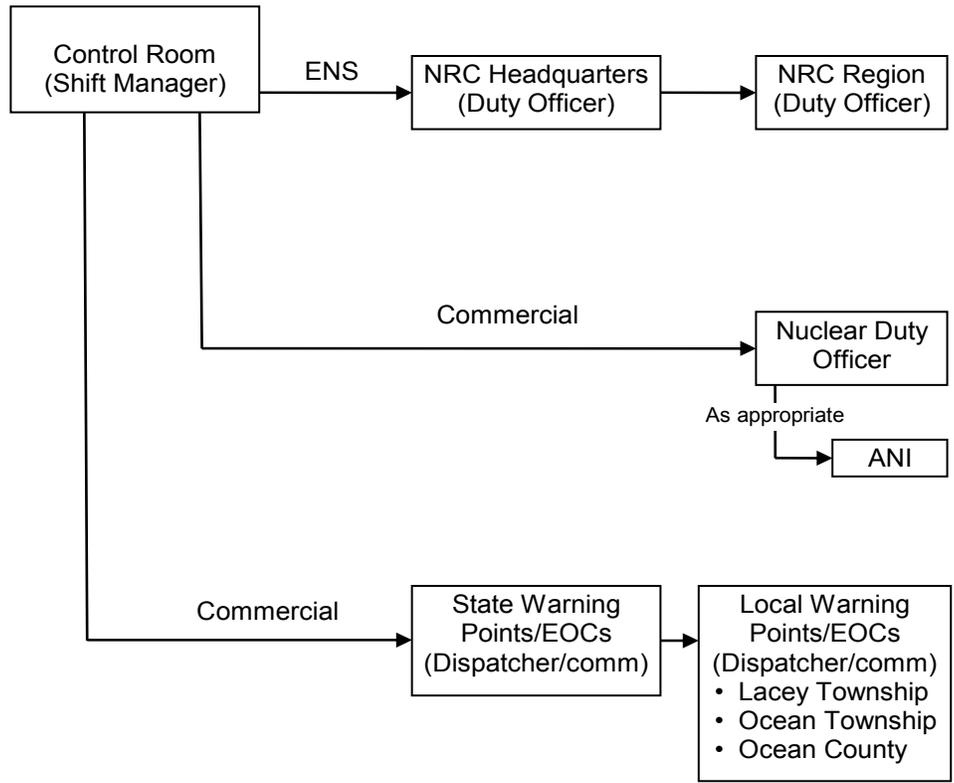
Each alarm provides a distinctive sound that all site personnel and contractors are trained to recognize and respond to. The Facility Emergency Alarm will be followed by an announcement that provides emergency information such as class of emergency declared, accountability directions, radiological precautions, etc. The reactor building evacuation alarm is supplemented with flashing lights at specific locations in the reactor building to provide both audible and visual warnings.

The Control Room alarm systems consist of overhead annunciators, panel annunciators and computer alarms. The overhead and panel annunciators consist of flashing translucent tiles and audible indicators (i.e., buzzer or horn). The computer alarms use annunciators and also provide specific data using the alarm printer.

2) Facility Paging System: The Facility Paging System provides facility-wide paging from the Control Room and all remote stations plus private communications during normal operating conditions.

The facility paging system provides immediate warning and instructions to onsite personnel in the event of an emergency. Phone stations and speakers of this subsystem are located in key locations within the facility.

**Figure 6.1: Exelon Notification Scheme**



## 7.0 ORGANIZATION

This section describes how the normal facility and support organizations transform into an emergency response organization to effectively deal with any incident at OCNGS.

### 7.1. Normal Facility Organization

The personnel and resources of OCNGS's normal facility and management organization consist of the onsite facility organization supported by the engineering and management organizations located offsite. The relationship and content of these onsite and offsite organizations are specified in the facility Technical Specifications, and the OCNGS Defueled Quality Assurance Manual.

The minimum staff required to conduct routine and immediate emergency mitigation is maintained at the facility. During normal conditions, the minimum staff on duty at the facility during all shifts consists of one (1) Shift Manager, one (1) Non-Certified Operator, one (1) Radiation Protection Technician and security personnel as indicated in Figure 7.1 and Table 7.1. Security and Fire Brigade personnel are staffed in accordance with the Site Security Plan and Fire Protection Plan. The responsibility for monitoring the status of the facility and approving all onsite activities is assigned to the Shift Manager. When an emergency situation becomes apparent, the Shift Manager shall assume the position of Emergency Director once the emergency classification has been made. Additional personnel are available on an on-call basis to respond to facility emergencies.

#### 7.1.1. Shift Manager/Emergency Director

The Shift Manager position is staffed at the facility 24 hours a day and is the senior management position at the facility during off-hours. This position is responsible for monitoring facility conditions and approving onsite activities. The position has the authority, management ability, and technical knowledge to classify and declare a facility emergency and assume the Emergency Director role.

The Emergency Director shall assume command and control upon declaration of an event. The Emergency Director is responsible for the direction of the total emergency response and has the company authority to accomplish the following responsibilities, which cannot be delegated:

1. Classification of event
2. Approval of emergency notification (Task of making notifications may be delegated)
3. Authorization of emergency exposure controls in excess of 5 Rem TEDE and the issuance of potassium iodide (KI), for Exelon Nuclear emergency workers per EPA-400 (radiation exposures in excess of 10 CFR Part 20 limits).

Other responsibilities assumed by the Emergency Director include:

1. Notification of the emergency classification to the NRC and State of New Jersey
2. Management of available facility resources
3. Initiation of mitigating actions
4. Initiation of corrective actions
5. Initiation of onsite protective actions
6. Decision to call for offsite assistance (police, fire or ambulance)
7. Augment the ERO staff as deemed necessary
8. Coordinate Security activities
9. Terminate the emergency condition when appropriate
10. Performance of initial Dose Assessment
11. Maintain a record of event activities

#### **7.1.2. Non-Certified Operator**

The Non-Certified Operator, on-shift 24 hours a day, performs system and component manipulations. The organizational relationship to the Shift Manager/Emergency Director is the same during normal and abnormal situations.

#### **7.1.3. Radiation Protection Technician**

The Radiation Protection Technician, on-shift 24 hours a day, is available to monitor personnel exposure, determine if radiological conditions preclude access to areas necessary to maintain SFP cooling, and to provide timely field survey results, if necessary.

#### **7.1.4. Security**

Security staffing is maintained in accordance with the Security Plan. The Security Force will report to the Emergency Director when implementing the PDEP.

## 7.2. Emergency Response Organization

The OCNCS ERO is activated at an Alert classification. However, it can be activated in part or in whole at the discretion of the Emergency Director for an Unusual Event.

Plans and procedures are in place to ensure the timely activation of the ERO. The goal of the ERO is to augment the on-shift staff within 2 hours of an Alert classification. The designated on-shift and augmented OCNCS ERO staff are capable of continuous (24-hour) operations for a protracted period.

The minimum augmented staff consists of a Technical Coordinator and a Radiation Protection Coordinator. Augmented staff provides the technical expertise required to assist the Emergency Director. The on-shift staff is augmented by additional personnel that report as directed after receiving notification of an emergency requiring augmented staff.

Designated members of the on-shift staff fulfill roles within the ERO appropriate with their training and experience. For example, Radiation Protection personnel would be expected to undertake radiation protection activities, Security personnel would undertake security activities, engineering personnel would focus on facility assessment, provide technical support, and assist in recovery operations as designated by the Technical Coordinator, Operations personnel would focus on facility operations.

The OCNCS ERO is illustrated in Figure 7.1. Table 7.1 provides a representation of the functional responsibilities of the on-shift and ERO positions that fulfill the emergency staffing requirements.

### 7.2.1. Technical Coordinator

The Technical Coordinator reports to the Emergency Director. During an emergency, the responsibilities of the Technical Coordinator include:

1. Evaluate technical data pertinent to facility conditions
2. Augment the emergency staff as deemed necessary
3. Designate engineering support, as necessary, to evaluate facility conditions and provide technical support,
4. Recommend mitigating and corrective actions
5. Direct search and rescue operations
6. Coordinate maintenance and equipment restoration
7. Establish and maintain communications as desired by the Emergency Director
8. Maintain a record of event activities

### 7.2.2. Radiation Protection Coordinator

The Radiation Protection Coordinator reports to the Emergency Director. During an emergency, the responsibilities of the Radiation Protection Coordinator include:

1. Monitor personnel accumulated dose

2. Advise the Emergency Director concerning Radiological EALs
3. Augment the emergency staff as deemed necessary
4. Direct radiological monitoring and analysis
5. Perform Dose Assessment
6. Coordinate decontamination activities
7. Establish and maintain communications as desired by the Emergency Director
8. Maintain a record of event activities

### **7.2.3. Extensions of the Oyster Creek Emergency Response Organization**

#### **7.2.3.1. Local Services**

Arrangements have been made for the extension of the ERO's capability to address emergencies. The following arrangements are in place through letters of agreement for ambulance services, treatment of contaminated and injured patients, fire support services, and law enforcement response as requested by the facility:

1. Transportation of injured personnel using an ambulance service (Lacey Township, Lanoka Harbor, and Waretown First Aid Squads);
2. Treatment of radioactively contaminated and injured personnel at a local support hospital (Community Medical Center and Southern Ocean Medical Center, NJ) as specified in the local support hospital plans; and
3. Fire support services by the Lanoka Harbor Fire Department, Forked River Volunteer Fire Company, and Bayville Fire Department.
4. Law enforcement support services provided by local (Lacey Township Police Department), state (New Jersey State Police), and federal law enforcement authorities as appropriate and response capabilities are documented in the letters of agreement maintained by Security.

Evidence of agreements with participating local services is listed in Appendix 4.

#### **7.2.3.2. Federal Government Support**

Resources of federal agencies appropriate to an emergency condition are made available in accordance with the National Response Framework. This plan and the resources behind it are activated through the facility notification of the NRC.

#### **7.2.3.3. Additional Support**

Dependent upon the emergency condition and response needs, the OCNCS ERO can be augmented by personnel and equipment support from the remainder of the Exelon Nuclear organization. This support capability is outlined in the Emergency Plan Implementing Procedures referenced in Appendix 2.

#### **7.2.4. Recovery Organization**

The emergency measures presented in this plan are actions designated to mitigate the consequences of the accident in a manner that affords the maximum protection to facility personnel. Planning for recovery involves the development of general principles and an organizational capability that can be adapted to any emergency situation. Upon termination of an emergency, the Emergency Director assembles the recovery organization, as necessary, to address the specific emergency circumstances of the terminated event.

The Emergency Director directs the recovery organization and is responsible for:

- Ensuring the facility is maintained in a safe condition;
- Managing onsite recovery activities during the initial recovery phase; and
- Keeping corporate support apprised of recovery activities and requirements.

The remainder of the recovery organization consists of the normal plant and emergency organizations described in Section 7.1 and 7.2, as necessary, to provide the radiological and technical expertise required to assist the Emergency Director restore the plant to normal conditions.

The following is a brief summary of the recovery organization's responsibilities:

1. Maintain comprehensive radiological surveillance of the facility to assure continuous control and recognition of problems;
2. Control access to the area and exposure to workers;
3. Decontaminate affected areas and/or equipment;
4. Conduct clean-up and restoration activities;
5. Isolate and repair damaged systems;
6. Document all proceedings of the accident and review the effectiveness of the emergency organization in reducing public hazard and/or facility damage.

The organization relies on facility staff and/or resources to restore the facility to normal conditions. The expertise provided through the support plans is available to aid with the necessary corrective actions required to control and/or restore normal facility status.

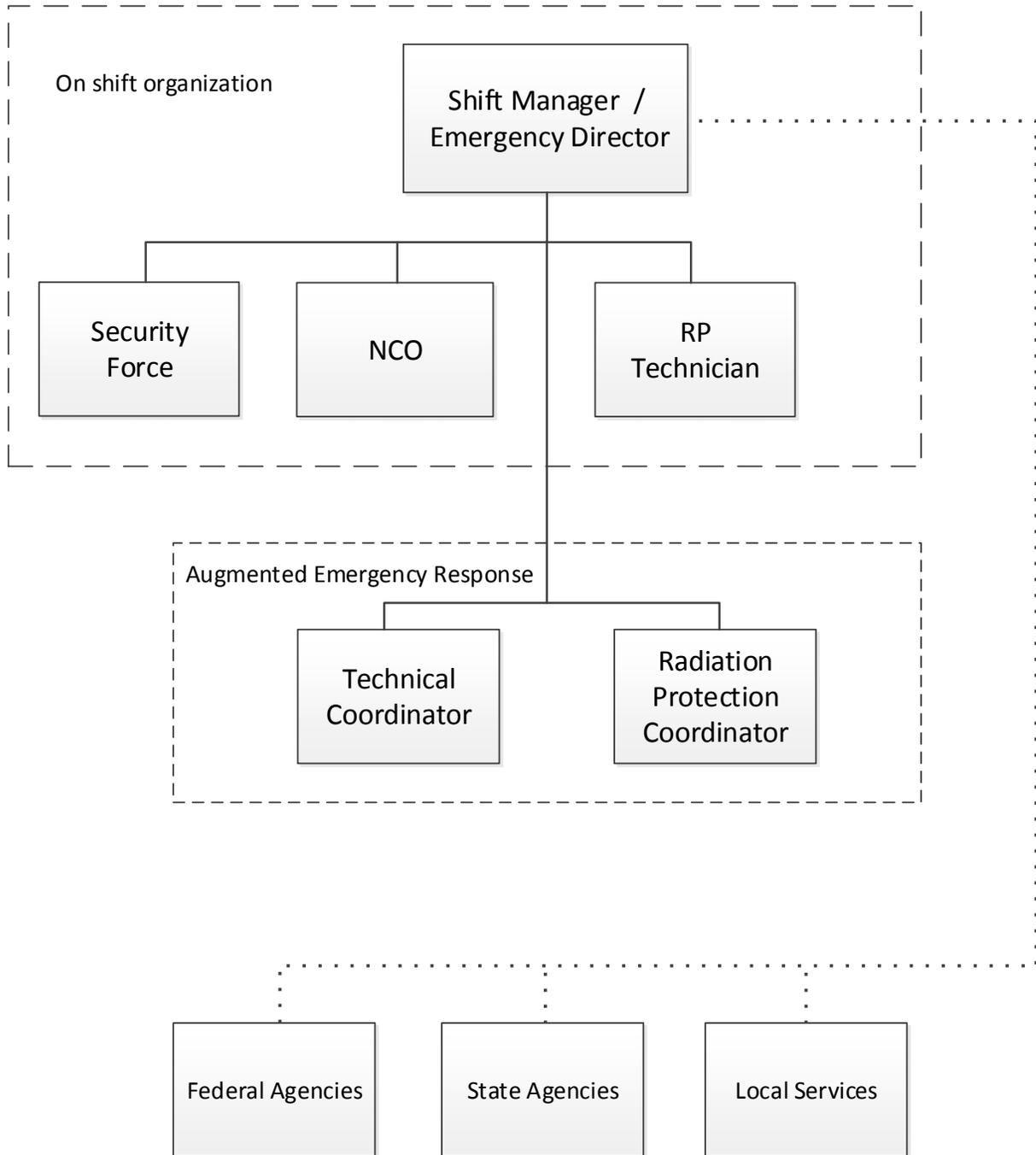
When facility conditions allow a transition from the emergency phase to the recovery phase, the Emergency Director conducts a facility emergency management meeting to discuss the recovery organization. The actions taken by this organization concerning termination of the emergency proceeds in accordance with a recovery plan developed specifically for the accident conditions.

#### **7.3. Coordination with State Government Authorities**

Section 6.0 describes the communications network between OCNGS and the State of New Jersey as a means of promptly notifying appropriate authorities under accident conditions.

The Shift Manager initiates notification of New Jersey authorities, providing them with applicable information utilizing an established message format that describes the accident status. The Emergency Director, or designee, issues periodic reports to State of New Jersey authorities.

**Figure 7.1: Normal On-Shift and Emergency Response Organization**



**Note:** Fire Brigade is staffed in accordance with the Fire Protection Program.

**Table 7.1: Minimum On-Shift and ERO Staffing Requirements**

MAJOR FUNCTIONAL AREA	MAJOR TASKS	LOCATION	OCNGS EMERGENCY POSITION, TITLE, OR EXPERTISE	# ON-SHIFT	OCNGS AUGMENTED STAFF CAPABILITY FOR RESPONSE IN 2 HOURS
Facility Operations and assessment of Operational Aspects / Fire Brigade	Facility Equipment	Control Room	Non-Certified Operator*	1	-
Emergency Direction and Control	Emergency Director	Control Room	Shift Manager*	1	-
Notification/Communication	Notify Licensee, State local and Federal personnel and maintain communications	Control Room			-
Radiological Accident Assessment and Support of Operational Accident Assessment  Protective Actions (In-Facility)	Onsite Dose Assessment and Monitoring	As Directed by the Emergency Director	Radiation Protection Coordinator	-	1 (may augment the ERO with Radiation Monitoring Personnel as deemed necessary)
	In-Facility Surveys Radiation Protection a. Access Control b. HP Coverage for Repair, Corrective Actions, Search and Rescue, First Aid, and Firefighting c. Personnel Monitoring d. Dosimetry	On-Scene	Radiation Protection Technician*	1	-
Facility Condition Evaluation, Repair, and Corrective Action	Technical Support	As Directed by the Emergency Director	Technical Coordinator	-	1 (may augment the ERO with technical support and emergency repair personnel as deemed necessary)
	Repair, Mitigation, and Corrective Action				
	Develop strategies for search and rescue and fire fighting				
Firefighting	Firefighting	On-Scene	Fire Brigade	Per the Fire Protection Plan	-
Fire Team Leader Rescue Operations/ First Aid	Fire Fighting Rescue and First Aid	On- Scene	Fire Brigade	Per the Fire Protection Plan	-
Site Access Control and Accountability	Security, Firefighting, Communications, and Personnel Accountability	Per the Physical Security Plan	Security Personnel	Per the Physical Security Plan	-

\* On-Shift personnel required to direct or perform site-specific mitigation strategies required for a catastrophic loss of SFP inventory

## **8.0 EMERGENCY RESPONSE**

### **8.1. Emergency Condition Recognition and Classification**

OCNGS maintains the capability to assess, classify, and declare an emergency condition in accordance with facility procedures. The expectation is that emergency classifications are to be made as soon as conditions are present and recognizable for the classification in accordance with the applicable EALs; but within 30 minutes in all cases after the availability of indications to operators that an EAL threshold has been reached.

Section 4.0 presents the emergency classification system used for categorizing the spectrum of possible emergency conditions into one of two emergency classes. The process of condition recognition, immediate response to correct the condition, event classification, and initiation of the appropriate emergency implementing procedures are critical responsibilities of the Shift Manager and the on-shift crew.

Site procedures contain the listing of conditions that represents each of the two emergency categories and the detailed EALs that allow the Shift Manager to determine the emergency classification. Once the emergency is classified, the applicable emergency implementing procedure is initiated, the ERO is activated and the notification of offsite authorities is initiated. The activation of the ERO brings to the assistance of the on-shift personnel the various support elements described in this plan. Specific support elements are implemented as detailed in the emergency implementing procedures. See Appendix 2 for a listing of these procedures.

### **8.2. Activation of the Emergency Response Organization**

Classification of an accident condition requires that the facility staff recognize that pre-established EALs associated with an emergency condition, as defined in Addendum 1, have been reached or exceeded. Depending upon the specific action levels attained, the Shift Manager declares one of the following: Unusual Event or Alert. The Shift Manager activates the ERO if facility conditions reach predetermined EALs. The ERO shall be activated at the Alert classification.

#### **8.2.1. Unusual Event Response**

Addendum 1 defines the conditions that require the declaration of an Unusual Event. An Unusual Event does not activate the ERO, but may require augmentation of on-shift resources to address the event. However, the ERO may be activated, in part or in whole, at any time at the discretion of the Shift Manager/Emergency Director. Offsite emergency organizations are notified for informational purposes, and aid from offsite fire, medical, and security organizations may be required depending on the nature of the event.

The response required as a result of this declaration of a Unusual Event varies according to the specified event, but a general summary of actions taken is described below:

1. The emergency condition is recognized and classified by the Shift Manager who instructs Control Room personnel to announce the emergency classification over the facility page system;
2. The on-duty and selected facility personnel respond as directed by the Shift Manager and assume assigned functions;
3. Control Room personnel notify the New Jersey State authorities;
4. The NRC is notified via ENS;
5. Other support is requested as necessary;
6. The Emergency Call-in Method is implemented as shown in the notification plan (Figure 8.1);
7. Additional personnel report to the facility as requested by the Shift Manager;
8. The Shift Manager/Emergency Director directs the activities of emergency response personnel;
9. If necessary, appropriate emergency medical, fire department, or law enforcement agencies are notified and requested to respond;
10. The public information representative is notified and handles public information associated with the event; and
11. The Shift Manager/Emergency Director terminates the Unusual Event status and closes out the event with a verbal summary to offsite authorities or escalates to higher level emergency classification.

The Unusual Event status will be maintained until an escalation in emergency class occurs or the event is terminated. Offsite authorities will be informed of the change in the emergency status and the necessary documentation will be completed as specified in site procedures.

### **8.2.2. Alert Response**

An Alert requires actions to assure that sufficient emergency response personnel are mobilized to respond to the accident conditions at the site. Notification is made to State officials and follow-up information is provided as needed to offsite emergency organizations. In an Alert, the steps listed in the Unusual Event Response section and the following are performed:

1. ERO report to the Emergency Director;
2. The Shift Manager/ Emergency Director directs the evacuation of all visitors and unnecessary contractors from the facility;
3. If sufficient personnel are not available onsite, off-duty personnel are called in as specified in the emergency implementing procedures;
4. The Emergency Director assumes total responsibility for overall emergency response actions and recovery;
5. The Emergency Director reaches agreement with offsite authorities concerning

termination of the event, and closes out the event by verbal summary to offsite authorities. If an event is a reportable occurrence, a written summary is issued to these authorities in an appropriate time frame through distribution by the Emergency Director.

The Alert status shall be maintained until termination of the event occurs. Off-site authorities will be informed of the change in the emergency status and the necessary documentation shall be completed as specified in site procedures.

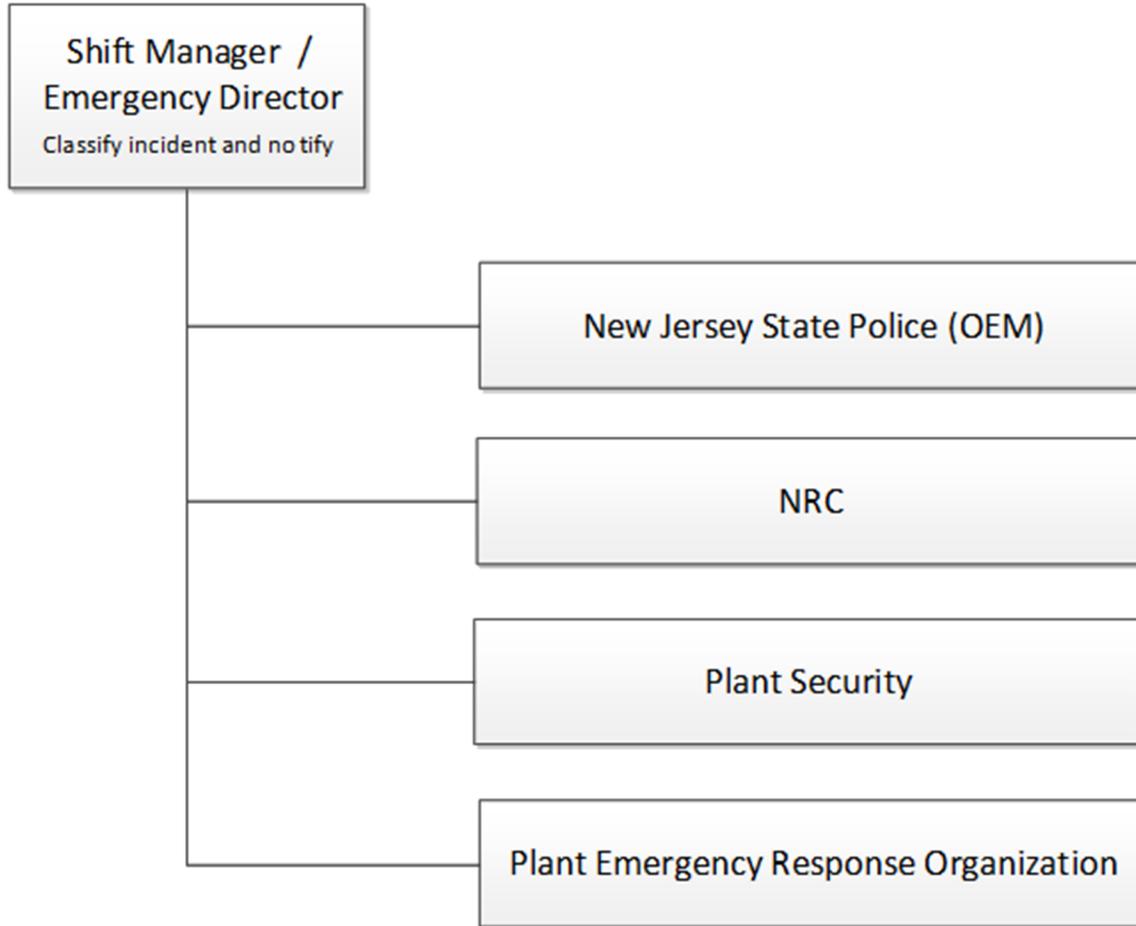
### **8.3. Emergency Termination Criteria**

An extensive review of facility parameters including SFP parameters and process and radiation monitoring systems, in conjunction with the pre-established EALs is required to terminate an emergency.

Termination of an emergency status is the responsibility of the Emergency Director. The decision will be based on the following considerations:

1. Conditions no longer meet an EAL and it appears unlikely that conditions will deteriorate;
2. Facility releases of radioactive materials to the environment are under control (within Technical Specifications);
3. In-Facility radiation levels are stable or decreasing, and are acceptable given facility conditions;
4. Operability and integrity of power supplies, electrical equipment and facility instrumentation including radiation monitoring equipment is acceptable;
5. All required notifications have been made;
6. Radiological and facility conditions permit resumption of normal occupational exposure limits to continue mitigation/repair activities.

**Figure 8.1: Notification Plan**



## **9.0 RADIOLOGICAL ASSESSMENT AND PROTECTIVE MEASURES**

### **9.1. Radiological Assessment**

#### **9.1.1. Initial Radiological Dose Projection**

OCNGS has developed a method to quickly determine the projected radiological conditions at the Site boundary. During the initial stages of an emergency, the Shift Manager or designated individual is responsible to perform the initial evaluation of radiological conditions. The initial evaluation is accomplished in accordance with site procedures.

### **9.2. Radiological Exposure Control**

During a facility emergency, abnormally high levels of radiation and/or radioactivity may be encountered by facility personnel. All reasonable measures shall be taken to control the radiation exposure to emergency response personnel providing rescue, first aid, decontamination, emergency transportation, medical treatment services, or corrective or assessment actions within applicable limits specified in 10 CFR Part 20.

Table 9.1 specifies the guidelines on emergency dose limits for personnel providing emergency response duties consistent with Table 2-2, "Guidance on Dose Limits for Workers Performing Emergency Services," provided in the EPA PAG Manual (Reference 12). The Shift Manager/Emergency Director has the responsibility to authorize emergency dose commitments in excess of 10 CFR Part 20 limits. This authorization is coordinated with the assistance of the Radiation Protection Coordinator. Exposure to individuals providing emergency functions will be consistent with the limits specified in Table 9.1 with every attempt made to keep exposures As Low As Reasonably Achievable (ALARA).

The Radiation Protection Coordinator is responsible for developing emergency radiological protection programs for ERO and augmented personnel. Emergency kits are provided with self-reading dosimeters. Each member reporting to the site will be provided a Dosimeter of Legal Record (DLR). Dose records will be maintained based upon the results of the self-reading dosimeters. This information is cross-referenced with the DLR data. The capability exists for the emergency processing of DLRs on a 24-hour per day basis. Emergency workers are instructed to read self-reading dosimeters frequently, and DLRs may be processed with increased periodicity.

### **9.3. Protective Measures**

#### **9.3.1. Site Personnel Accountability**

Accountability should be considered and used as a protective action whenever a site-wide risk to health and safety exists and prudence dictates. If personnel accountability is required, at the direction of the Emergency Director, all individuals at the site (including non-essential employees, visitors, and contractor personnel) shall be notified by sounding the facility alarm and making announcements over the Public Address System. Following announcement of an emergency declaration, and when accountability has been requested, facility personnel are responsible for reporting to designated areas and aiding Security in the accountability process.

Accountability of all personnel on the site should be accomplished within 60 minutes of the accountability announcement. If personnel are unaccounted for, teams shall be dispatched to locate the missing personnel. Accountability may be modified or suspended if the safety of personnel may be jeopardized by a Security event or other event hazardous to personnel.

### **9.3.2. Site Egress Control Methods**

All visitors and unnecessary contractors are evacuated from the facility at the discretion of the Emergency Director. In the event of a suspected radiological release, personnel are monitored for radioactive contamination prior to leaving the Protected Area. Portable radiation survey meters are available to monitor for potential contamination.

### **9.3.3. Contamination Control and Decontamination Capability**

During emergency conditions, OCNGS maintains normal plant decontamination and contamination control measures as closely as possible. However, these measures may be modified by the Emergency Director should conditions warrant.

OCNGS maintains contamination control measures to address area access control, drinking water and food supplies, and the return of areas and items to normal use.

- a. Contaminated areas are isolated as restricted areas with appropriate radiological protection and access control. Personnel leaving contaminated areas are monitored to ensure both themselves and their clothing are not contaminated. Supplies, instruments, and equipment that are in contaminated areas or have been brought into contaminated areas will be monitored prior to removal. Items found to be contaminated, will be decontaminated using normal plant decontamination techniques and facilities or may be disposed of as radioactive waste.
- b. Should the potential exist for contamination of on-site food or drinking water supplies that renders these supplies non-consumable, OCNGS will make arrangements for transport of non-contaminated off-site supplies.
- c. OCNGS permits areas and items to be returned to normal use following conduct of appropriate surveys and verification that contamination levels have returned to acceptable levels.

OCNGS maintains an in-plant decontamination facility. Waste generated through the use of this system is collected and processed by the plant liquid radwaste system. Survey instrumentation for personnel "frisking" and sensitive body burden monitoring equipment are available. Decontamination is performed under the direction of the Radiation Protection Coordinator.

### **9.3.4. Use of Onsite Protective Equipment and Supplies**

The facility supplies of personnel radiation protection equipment and gear are utilized to support the emergency response effort. Equipment such as respiratory protection gear and protective clothing is assigned to emergency response organization members and facility response personnel in accordance with established facility radiation protection criteria.

### **9.3.5. Fire Fighting**

Strategies have been developed for firefighting and fire protection in specific critical areas of the facility. The Fire Protection Program describes the fire protection organization and individual responsibilities.

## **9.4. Aid to Affected Personnel**

This section describes the arrangements for medical services for contaminated injured individuals sent from the facility.

### **9.4.1. Offsite Hospital and Medical Services**

Hospital personnel have been trained and hospitals are equipped to handle contaminated or radiation injured individuals. Specifically, training of medical support personnel at the agreement hospitals will include basic training on the nature of radiological emergencies, diagnosis and treatment, and follow-up medical care. Facility personnel are available to assist medical personnel with decontamination radiation exposure and contamination control. Arrangements, by letter of agreement or contract, are maintained by the facility with a qualified hospital located in the vicinity of each nuclear generating station for receiving and treating contaminated or exposed persons with injuries requiring immediate hospital care. Exelon Nuclear shall provide medical consultants to aid in any special care necessary at these facilities.

Arrangements are also maintained with a qualified medical facility well equipped and staffed for dealing with persons having radiation injuries and whenever necessary, such persons will be transferred to this hospital facility for extended specialized treatment. Exelon Nuclear will have available to the staff of this hospital, medical consultants who will provide the direction of the special care necessary for the treatment of persons having radiation injuries.

These agreements are verified annually. Refer to Appendix 4 for details.

### **9.4.2. Onsite First Aid Capability**

Oyster Creek maintains onsite first aid supplies and equipment necessary for the treatment of contaminated or injured persons. In general, physicians or nurses are not staffed at Oyster Creek, and as such, medical treatment given to injured persons is of a "first aid" nature. Additionally, the Radiation Protection Technicians at Oyster Creek are experienced in control of radioactive contamination and decontamination work. Facility personnel are also trained and qualified to administer first aid. At least two of these individuals are available on shift at all times. The functions of facility personnel in handling onsite injured people are:

1. Afford rescue;
2. Administer first aid including such resuscitative measures as are deemed necessary;
3. Begin decontamination procedures; and
4. Arrange for suitable transportation to a hospital when required.

Primary attention shall be directed to the actual factors involved in the treatment of casualties, such as: control of bleeding, resuscitation including heart and lung, control of bleeding after resuscitation, protection of wounds from bacterial or radioactive contamination and the immobilization of fractures.

Facility personnel provide an initial estimate of the magnitude of surface contamination of the injured and preliminary estimates of total body dose to the injured. Primary rapid and simple decontamination of the surface of the body (when possible and advisable) before transportation to a designated hospital may be carry out as directed or performed by Radiation Protection personnel. When more professional care is needed, injured persons are transported to a local clinic or hospital. Contaminated and injured persons are transported to a dedicated specified facility.

#### **9.4.3. Medical Service Facilities**

Because of the specialized nature of the diagnosis and treatment of radiation injuries, Corporate Emergency Preparedness maintains an agreement with Radiation Emergency Assistance Center/Training Site (REAC/TS). REAC/TS is a radiological emergency response team of physicians, nurses, health physicists and necessary support personnel on 24-hour call to provide consultative or direct medical or radiological assistance at the REAC/TS facility or at the accident site. Specifically, the team has expertise in and is equipped to conduct: medical and radiological triage; decontamination procedures and therapies for external contamination and internally deposited radionuclides, including chelation therapy; diagnostic and prognostic assessments or radiation-induced injuries; and radiation dose estimates by methods that include cytogenetic analysis, bioassay, and in vivo counting.

In addition to REAC/TS, the Facility Annex may identify additional medical consultants, based on agreements with local hospitals, to support personnel training and medical response.

#### **9.4.4. Medical Transportation**

Arrangements are made for prompt ambulance transport of persons with injuries involving radioactivity to designated hospitals. Such service is available on a 24-hour per day basis and is confirmed by letter of agreement. Radiation monitoring services shall be provided by Oyster Creek whenever it becomes necessary to use the ambulance service for the transportation of contaminated persons. The local ambulance/first aid organizations as listed in Section 7.2.3.1 can be contacted directly through commercial phone lines from the OCNCS control room or as dispatched by the State EOC.

A qualified Radiation Protection person shall accompany the ambulance to the hospital. Additional Radiation Protection personnel may be contacted and dispatched to local hospitals to assist in the monitoring and decontamination of the injured victim and hospital and ambulance facilities and personnel.

### **9.5. Protective Actions for Onsite Personnel**

This section of the plan describes the means for controlling emergency worker radiological exposures during an emergency, as well as the measures that are used by Exelon to provide

necessary assistance to persons injured or exposed to radiation and/or radioactive materials. Exposure guidelines in this section are consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides described in EPA 400-R-92-001 (EPA-400) (Reference 12).

**9.5.1. Emergency Exposure Guidelines**

Being licensed by the NRC, all Exelon Nuclear generating stations maintain personnel exposure control programs in accordance with 10 CFR 20 under normal operating conditions. The Facility Emergency Director is assigned the non-delegable responsibility for authorizing personnel exposure levels under emergency conditions per EPA-400. In emergency situations, workers may receive exposure under a variety of circumstances in order to assure safety and protection of others and of valuable property. These exposures will be justified if the maximum risks or costs to others that are avoided by their actions outweigh the risks to which the workers are subjected. The Emergency Worker Dose Limits are as follows:

**Table 9.1: Emergency Dose Limits**

Dose Limit (Rem TEDE)	Activity	Condition
0-5 Rem	All	Personnel should be kept within normal 10 CFR 20 limits during bona fide emergencies, except as authorized for activities as indicated below.
5-10 Rem	Protecting valuable property	Lower dose not practicable.
10-25 Rem	Lifesaving or protection of large populations	Lower dose not practicable.
>25 Rem	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved.

Limit dose to the lens of the eye to 3 times the above values and doses to any other organ (including skin and body extremities) to 10 times the above values.

Whenever possible, the concurrence of the facility's Radiation Protection (Department) Manager should be secured before exposing individuals to dose equivalents beyond the EPA-PAG Manual lower limit.

**9.5.2. Emergency Radiation Protection Program**

The Radiation Protection Manager is the individual responsible for the implementation of the radiation protection actions during an emergency. Radiation protection guidelines include the following:

- Volunteers over forty-five years of age are considered first for any emergency response action requiring exposure greater than normal limits. Routine dose limits shall not be extended to emergency dose limits for declared pregnant individuals. As in the case of normal occupational exposure, doses received under emergency conditions should be maintained as low as reasonably achievable.
- Persons undertaking any emergency operation in which the dose will exceed 25 Rem TEDE should do so only on a voluntary basis and with full awareness of the risks involved including the numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.
- In the context of the emergency limits, exposure of workers that is incurred for the protection of large populations may be considered justified for situations in which the collective dose avoided by the emergency operation is significantly larger than that incurred by the workers involved.
- Exposure accountability is maintained and proper personnel radiological monitoring equipment is provided for all personnel during emergency conditions.
- Access to high radiation areas is only permitted with prior approval of the applicable Radiation Protection Manager. Personnel are not allowed to enter known or potential high radiation areas unless their exposure has been properly evaluated.
- Periodic habitability surveys of emergency facilities are performed during an emergency. If the facility is determined to be uninhabitable, the facility is evacuated in order to prevent or minimize exposure to radiation and radioactive materials. Alternate assembly areas are established, as necessary, to relocate and monitor evacuated personnel.

#### **9.5.3. Personnel Monitoring**

- a. Emergency workers will receive DLR badges and personal self-reading dosimeters capable of measuring expected exposures on a real time basis. The capability exists for the emergency processing of DLRs on a 24-hour per day basis, if necessary.
- b. Emergency worker dose records are maintained by the Radiation Protection Managers (as appropriate) in accordance with the emergency and radiological protection procedures. Emergency workers are instructed to read their dosimeters frequently. DLRs may be processed with increased periodicity.

#### **9.5.4. Non-Exelon Personnel Exposure Authorization**

The responsibility for authorizing non-Exelon emergency workers (i.e. state and local agency emergency workers) to receive exposures in excess of the EPA General Public Protective Action Guides rests with the state and county organizations, except when such emergency workers are onsite. Authorization of exposures in excess of EPA General Public Protective Action Guides, in this latter instance, rests with the Facility Emergency Director.

### 9.5.5. Contamination and Decontamination

During an emergency, the Facility Emergency Director is responsible for preventing or minimizing personnel exposure to radioactive materials deposited on the ground or other surfaces.

- a. During emergency conditions, normal facility contamination control criteria will be adhered to as much as possible. However, these limits may be modified by the Emergency Director per existing Radiation Protection procedures, should conditions warrant.
- b. Personnel found to be contaminated will normally be attended to at decontamination areas located onsite. Temporary decontamination areas can also be set up inside at various locations. Decontamination showers and supplies are provided onsite with additional personnel decontamination equipment and capabilities. Shower and sink drains in the controlled area is processed and monitored prior to discharge. Potentially contaminated emergency vehicles will be surveyed before they are allowed to leave the facility or offsite assembly area. If the survey area is not suitable for monitoring and decontamination due to radiological or other concerns, vehicles will be surveyed at an alternate location.

### 9.5.6. Contamination Control Measures

Controls are established 24 hours per day to contain the spread of loose surface radioactive contamination.

- a. Contaminated areas are isolated as restricted areas with appropriate radiological protection and access control. Personnel leaving contaminated areas are monitored to ensure they and their clothing are not contaminated. If contamination above acceptable levels is found, they will be decontaminated in accordance with facility procedures. If normal decontamination procedures do not reduce personnel contamination to acceptable levels, the case will be referred to a competent medical authority. Supplies, instruments, and equipment that are in contaminated areas or have been brought into contaminated areas will be monitored prior to removal. If found to be contaminated, they will be decontaminated using normal facility decontamination techniques and facilities or may be disposed of as radwaste. Contaminated vehicles will be decontaminated before being released.
- b. Measures will be taken to control onsite access to potentially contaminated potable water and food supplies. Under emergency conditions when uncontrolled releases of activity have occurred, eating, drinking, smoking, and chewing are prohibited in all facility emergency response facilities until such time as habitability surveys indicate that such activities are permissible.
- c. Restricted areas and contaminated items will be returned to normal use when contamination levels have been returned to acceptable levels. Contamination control criteria for returning areas and items to normal use are contained in the facility procedures.

## **10.0 EMERGENCY NOTIFICATION AND PUBLIC INFORMATION**

### **10.1. Emergency Notification**

The Shift Manager is responsible for the notification of an emergency declaration to the State of New Jersey. Notification is made within 60 minutes after the availability of indications to operators that an EAL threshold has been reached.

The format and contents of the initial message between the facility and State authorities are specified in notification procedures and have been established with the review and agreement of responsible state authorities.

The NJ Office of Emergency Management may request the following information from OCNGS:

1. Date and time of the incident;
2. Emergency classification;
3. Status of the facility;
4. Whether a release has occurred, is occurring, or is anticipated to occur;
5. Actual or projected dose rates at the Site boundary;
6. Whether or not Offsite assistance is needed.

Follow-up reports are provided as additional information describing the emergency situation becomes available and on an as-needed basis until such time that the emergency condition has been terminated.

### **10.2. Public Information**

Any emergency generates a continuous and intensive demand for up-to-date information. The spokesperson function would typically be performed by Communications personnel. Communication personnel will be notified of an emergency declaration and would serve as a spokesperson. However, the function could also be performed by plant or corporate management. Upon receiving notification of an emergency declaration, the spokesperson contacts the Control Room and receives a brief description of the event.

The spokesperson monitors media activity and coordinates with senior management to address rumors and disseminate information to the public. The spokesperson will participate in news conferences as appropriate with Federal, State and local emergency response organizations conducted from the site or at other locations, as necessary. The spokesperson is available for media inquiries and the positional duties include maintaining liaison with local media and coordinating with Federal, State and local emergency response organizations to disseminate appropriate information regarding an emergency at OCNGS. Federal, State and local emergency response organizations maintain the capability to disseminate appropriate information regarding an emergency at OCNGS.

As part of its normal corporate structure, Exelon maintains a corporate communications office that can be called to provide additional resources, as necessary.

## **11.0 MAINTAINING EMERGENCY PREPAREDNESS**

### **11.1. Drills and Exercises**

An exercise tests the execution of the overall facility emergency preparedness and the integration of this preparedness. A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular response function.

Emergency exercises and drills are conducted to test and evaluate the adequacy of emergency facilities, equipment, procedures, communication channels, actions of emergency response personnel, and coordination between offsite organizations and the facility.

A summary of exercises and drills and associated elements is outlined below.

#### **11.1.1. Radiation Emergency Exercises and Drills**

Biennial exercises shall be conducted to test the timing and content of implementing procedures and methods; to test emergency equipment and communication networks; and to ensure that emergency personnel are familiar with their duties. OCNGS offers the following organizations the opportunity to participate to the extent assistance would be expected during an emergency declaration; however, participation is not required:

1. State of New Jersey
2. Local Hospitals
3. Local Fire Departments
4. Law Enforcement
5. Rescue, Inc. Ambulance Service

At least one drill involving a combination of some of the principal functional areas of emergency response shall be conducted in the interval between biennial exercises.

Communication checks with offsite agencies, fire drills, medical drills, radiological monitoring drills and health physics drills are performed as indicated in the following sections.

#### **11.1.2. Communication Tests**

To ensure that emergency communications systems described in Section 6.0 of this plan are operable, communications tests are conducted as outlined below.

1. Communication channels with the state government of New Jersey, is tested monthly. These communications tests will include the aspect of understanding the content of messages.
2. The ENS is tested monthly.
3. The following communication systems, as detailed in Section 6.0 of this plan, are used on a frequent basis, therefore periodic testing of these systems is not necessary:
  - Mobile UHF Radio System

- Facility Intercom System
- Commercial Telephone System

### **11.1.3. Augmentation Drills**

Semi-annual, off hours, unannounced, communications drill, utilizing commercial telephone, to estimate emergency personnel response times. No actual travel is required. Participants provide an estimation of the time it would take to report to their designated ERO position. This drill shall serve to demonstrate the capability to augment the on-shift staff after declaration of an emergency.

### **11.1.4. Fire Drills**

To test and evaluate the response and training of the facility's fire brigade, fire drills are conducted in accordance with the OCNCS Fire Protection Program.

### **11.1.5. Medical Drills**

To evaluate the training of the facility's medical response and offsite medical response (ambulance and hospital), a medical drill is conducted annually with a simulated contaminated injured individual. This drill can be performed as part of an Emergency Plan drill or exercise.

### **11.1.6. Radiological Monitoring Drills**

Facility environs and radiological monitoring drills are conducted annually. These drills include monitoring of accessible areas within the facility and include collection and analysis of airborne sample media, communications, and record keeping performed by members of the emergency team. This drill can be performed as part of an Emergency Plan drill or exercise.

### **11.1.7. Health Physics Drills**

Health Physics drills are conducted semi-annually involving response to, and analysis of, simulated elevated in-facility airborne and liquid samples and direct radiation measurements in the environment. A drill can be performed as part of an Emergency Plan drill or exercise.

### **11.1.8. Security Drills**

The purpose of the security drill is to maintain key skills, specifically the site-specific team skills necessary to mitigate security-based events. Security drills are conducted in accordance with the OCNCS Physical Security Plan.

### **11.1.9. Scenarios**

The EP Specialist is responsible for an Emergency Plan drill or exercise. The EP Specialist's responsibilities include developing the exercise/drill scenario, the accident time sequence, and the selection and training of the Controllers required to evaluate the effectiveness of the OCNCS Emergency Preparedness Program. In accordance with applicable portion to Section IV.G to NSIR/DPR-ISG-01, the drill or exercise scenarios will vary from year to year.

A scenario is prepared by the scenario development team (if needed) for each exercise/drill to be conducted. The contents of the scenario include, but are not limited to, the following:

1. Basic objective(s);
2. Date, time period, place and participating organizations;
3. Simulation lists;
4. Time schedule of real and simulated initiating events;
5. A narrative summary describing the conduct of the drill or exercise to include such items as simulated casualties, search and rescue of personnel, deployment of radiological monitoring teams, and public information affairs; and
6. List of Controllers and participants.

The scenarios are designed to allow free play in exercising the decision-making process associated with such emergency response actions as exposure control, emergency classification, and the ERO and additional staff augmentation process.

Security based scenarios to test and evaluate security response capabilities will be conducted in accordance with security drills and exercise procedures and may be conducted during Emergency Plan drills or exercises.

Starting times and pre-notification for exercises are coordinated with and agreed upon by all participating organizations.

#### **11.1.10. Evaluation of Exercises**

To evaluate the performance of participating facility personnel and the adequacy of emergency facilities, equipment and procedures during an exercise, the Exercise Coordinator obtains qualified controllers which includes resources outside the facility to evaluate and critique the exercise.

When feasible, personnel designated as controllers are assigned to an Emergency Plan area germane to their area of expertise. Controllers are provided general instruction concerning their specific observation function. Each controller is requested to observe the implementation of the emergency plan element assigned to him or her, and then to record and report observed inadequacies.

A critique is conducted at the conclusion of the exercise with facility personnel. After the critique, the controllers submit a written evaluation to the Exercise Coordinator in which the exercise performance is evaluated against the objectives. All comments and/or recommendations are documented.

Weaknesses and/or deficiencies identified in an exercise critique are processed in accordance with the site corrective actions program.

### **11.1.11. Emergency Plan Audit**

The OCNGS Emergency Plan is independently audited. The audit is conducted as part of the Quality Assurance Program in accordance with 10 CFR 50.54(t). All aspects of emergency preparedness, including exercise documentation, capabilities, procedures, and interfaces with state and local governments are audited.

## **11.2. Training**

Radiological emergency response training is provided to those who may be called on to assist in an emergency. OCNGS Management is responsible to ensure all members of the Emergency Response Organization receive the required initial training and continuing training.

### **11.2.1. Emergency Response Training**

The training program for ERO personnel is based on applicable requirements of Appendix E to 10 CFR Part 50 and position-specific responsibilities as defined in the PDEP. Emergency response personnel in the following categories receive initial training and annual retraining.

### **11.2.2. Emergency Response Organization Training**

Shift Managers/Emergency Directors, Technical Coordinators, and Radiation Protection Coordinators shall have training conducted such that proficiency is maintained on topics listed below. These topics should be covered as a minimum on an annual basis.

- Emergency Action Level Classification
- Dose Assessment
- Federal, State, and local notification procedures
- ERO Augmentation
- Emergency Exposure Control
- Mitigating strategies for a catastrophic loss of spent fuel pool inventory

OCNGS personnel available during emergencies to perform emergency response activities as an extension of their normal duties receive duty specific training. This includes facility on-shift personnel, maintenance, radiation protection, and security personnel. Personnel assigned to liaison with offsite fire departments are trained in accordance with the Fire Protection Program, including mitigating strategies required for a catastrophic loss of SFP inventory. Personnel assigned the responsibility of first aid response will be trained with courses equivalent to Red Cross First Aid, CPR, or AED for Lay Responders or equivalent.

### **11.2.3. General Employee Training**

An overview of the Emergency Plan is given to all personnel allowed unescorted access into the Protected Area at OCNGS. Personnel receive this information during initial and requalification training. This training includes identification of the emergency alarm, the fire alarm and the steps to follow for a facility and site evacuation.

#### **11.2.4. Local Support Services Personnel Training**

Training is offered annually to offsite organizations which may provide specialized services during an emergency at OCNGS (fire-fighting, medical services, transport of contaminated and/or injured personnel, etc.). The training shall be structured to meet the needs of that organization with respect to the nature of their support. Topics of event notification, site access, basic radiation protection and interface activities are included in the training.

#### **11.2.5. Documentation of Training**

OCNGS procedures outline the process to document training of the OCNGS Emergency Response Organization. An Emergency Planning procedure is used to verify training provided to offsite organizations.

#### **11.3. Review and Updating of Plan and Procedures**

The Emergency Plan is reviewed at least annually. All recommendations for changes to the Emergency Plan or associated implementing procedures are reviewed in accordance with 10 CFR 50.54(q). The Emergency Plan is submitted to OCNGS's On-Site Safety Review Committee for approval.

Written agreements with outside support organizations and government agencies are evaluated annually to determine if these agreements are still valid. If agreements are not valid, then they are renewed and updated.

Revisions to the Emergency Plan are made in accordance with current regulations and guidelines. Changes to the Emergency Plan are forwarded to organizations and individuals with a responsibility for implementation of the Plan.

Telephone number listings associated with the emergency notification process are verified quarterly.

#### **11.4. Maintenance and Inventory of Emergency Equipment and Supplies**

Periodic inventory, testing, and calibration of emergency equipment and supplies are conducted in accordance with approved facility procedures. This equipment includes, but is not limited to:

- Portable radiation monitoring equipment
- Emergency medical response equipment
- Dosimeters
- Portable radios

Emergency equipment and instrumentation shall be inventoried, inspected and operationally checked periodically as indicated by the procedure and after each use. Sufficient reserves of equipment and instrumentation are stocked to replace emergency equipment and instrumentation removed from service for calibration and/or repair.

### **11.5. Responsibility for the Planning Effort**

The facility Plant Manager has overall responsibility for implementation of the Emergency Plan at OCNCS. The overall Emergency Plan is maintained by Corporate Emergency Preparedness. The Emergency Preparedness Specialist is assisted by Corporate Emergency Preparedness. The specific duties include, but are not limited to, the following:

1. Revise and update the Emergency Plan;
2. Maintain the Emergency Plan implementing procedures so that they are updated and current with the Emergency Plan;
3. Represent the facility in offsite Emergency Plan interfaces;
4. Represent the facility in NRC emergency planning appraisals and audits; and
5. Maintain drill and exercise documentation and coordinate implementation of corrective actions deemed necessary following drills and exercises.

The Emergency Preparedness Specialist is responsible for maintaining an adequate knowledge of regulations, planning techniques and the latest applications of emergency equipment and supplies.

**APPENDIX 1: REFERENCES**

References consulted in the writing of this E-Plan are listed in this section. With exception of regulatory requirements, inclusion of material on this list does not imply adherence to all criteria or guidance stated in each individual reference.

1. 10 CFR 50.47, "Emergency plans"
2. 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors"
3. 10 CFR 50 Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities"
4. 10 CFR 20, "Standards for Protection Against Radiation"
5. 10 CFR 70, 73, and 100
6. 10 CFR 72.32, "Emergency plan"
7. NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, dated November 1980
8. NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73"
9. NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees"
10. NUREG-1567, "Spent Fuel Dry Storage Facilities"
11. NEI 99-01, Revision 6, "Development of Emergency Action Levels for Nuclear Power Plants," dated November 2012
12. EPA 400-R-92-001 "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," dated October 1991 (reprinted May 1992)
13. Exelon Nuclear Defueled Quality Assurance Program (DQAP), NO-DC-10
14. "Federal Bureau of Investigation and Nuclear Regulatory Commission Memorandum of Understanding for Cooperation Regarding Threat, Theft, or Sabotage in U.S. Nuclear Industry," Federal Register, Vol. 44, p. 75535, dated December 20, 1979
15. "Voluntary Assistance Agreement By and Among Electric Utilities involved in Transportation of Nuclear Materials," dated November 1, 1980
16. Comprehensive Environmental Response, Compensation and Liability Act of 1980.
17. American Nuclear Insurers Bulletin #5B (1981), "Accident Notification Procedures for Liability Insureds"
18. Letter from William J. Dircks, Executive Director for Operations, NRC, to Dr. Donald F. Knuth, President KMC, Inc. dated October 26, 1981

**APPENDIX 1: REFERENCES**

19. ANI/MAELU Engineering Inspection Criteria for Nuclear Liability Insurance, Section 6.0, Rev. 1, Emergency Planning
20. NRC RIS 2006-12, "Endorsement of Nuclear Energy Institute Guidance Enhancement to Emergency Preparedness Programs for Hostile Action."
21. NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events"
22. NRC Information Notice 2009-01, "National Response Framework"
23. NRC NSIR/DPR-ISG-01, "Interim Staff Guidance - Emergency Planning for Nuclear Power Plants," Revision 0, November 2011 (ADAMS Accession No. ML113010523)

**APPENDIX 2: INDEX OF EMERGENCY PLAN IMPLEMENTING PROCEDURES**

<b>Document</b>	<b>Document Title</b>
EP-OC-1001 Addendum 1	PERMANENTLY DEFUELED EMERGENCY ACTION LEVELS AND TECHNICAL BASES
EP-OC-110	ASSESSMENT OF EMERGENCIES
EP-OC-111	EMERGENCY CLASSIFICATION
EP-OC-112	EMERGENCY RESPONSE ORGANIZATION ACTIVATION AND OPERATION
EP-OC-113	PERSONNEL PROTECTIVE ACTIONS
EP-OC-114	NOTIFICATIONS
EP-OC-115	TERMINATION
EP-OC-120	EMERGENCY PLAN ADMINISTRATION
EP-OC -121	EMERGENCY RESPONSE FACILITIES AND EQUIPMENT READINESS
EP-OC -122	DRILLS AND EXERCISE PROGRAM
EP-OC -123	COMPUTER PROGRAMS
EP-OC -124	INVENTORIES AND SURVEILLANCES
TQ-OC -113	ERO TRAINING AND QUALIFICATION

## APPENDIX 3: PROCEDURE CROSS-REFERENCE TO NUREG-0654

NUREG-0654 Criteria	Planning Standard (10 CFR 50.47)	Planning Requirement (Appendix E. IV)	OCNGS PDEP Section
II.A	(b)(1)* Assignment of Responsibility (Organization Control)	A.1*, 2, 4*, 7*	6.0 7.0 Appendix 4
II.B	(b)(2) Onsite Emergency Organization	A.1*,2,4*,9*; C.1*	7.0 9.0
II.C	(b)(3)* Emergency Response Support and Resources	A.6, 7*	7.0 Appendix 4
II.D	(b)(4)* Emergency Classification System	B.1,2; C.1*, 2*	4.0 Addendum 1
II.E	(b)(5)* Notification Methods and Procedures	A.6, 7*; C.1*, 2*; D.1*, 3*; E*	7.0 8.0 10.0 Appendix 3
II.F	(b)(6)* Public Education and Information	C.1*; D.1*, 3*; E*	6.0 8.0 11.0
II.G	(b)(7)* Public Education and Information	A.7*; D.2*	10.0
II.H	(b)(8) Emergency Facilities and Equipment	E*; G	5.0 7.0 8.0 11.0
II.I	(b)(9)* Accident Assessment	A.4*; B.1*; C.2*; E*	5.0 9.0 Addendum 1
II.J	(b)(10)* Protective Response	C.1*; E*; I	9.0
II.K	(b)(11) Radiological Exposure Control	E*	9.0
II.L	(b)(12) Medical and Public Health Support	A.6, 7*; E*	7.0 9.0
II.M	(b)(13) Recovery and Reentry Planning and Post-Accident Operations	H	7.0
II.N	(b)(14) Exercises and Drills	E.9*; F*	11.0
II.O	(b)(15) Radiological Emergency Response Training	F*	7.0 9.0 11.0
II.P	(b)(16) Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans	G	11.0

\* As exempted.

**APPENDIX 4: LIST OF LETTERS OF AGREEMENT****Letters with Corporate Exelon:**Organization/Agreement Type

Department of Energy (DOE) Radiation Emergency Assistance Center/Training Site, REAC/TS (Letter on File)

Medical Consultant

Environmental, Inc. (P.O.)  
Radiological Environmental Monitoring

GE Hitachi Nuclear Energy, BWRs (Letter on File)  
BWR Emergency Support

Landauer, Inc. (P.O.)  
Emergency Dosimetry

Murray & Trettel, Inc. (P.O.)  
Meteorological Support

Teledyne Brown Engineering (P.O.)  
Bioassay Analysis/Radiochemical Analysis

Teledyne Brown Engineering (P.O.)  
Bioassay Analysis/Radiochemical Analysis

National Foam, Inc.  
Fire Foam Supply

State of New Jersey Department of Environmental Protection/Office of Emergency Management (Letter on File)

**Oyster Creek-Specific Letters of Agreement**

The following is a listing of letters of agreement and contracts specific to emergency response activities in support of Oyster Creek Generating Station.

NOTE: While this list reflects letters of agreement currently in effect, it is possible that the list may change for a number of reasons. The EP Specialist will consider the impact that a loss of an agency will have on the emergency response process.

**1. Medical Support Organizations and Personnel**

- Community Medical Center
- Southern Ocean Medical Center

**APPENDIX 4: LIST OF LETTERS OF AGREEMENT**

- Lacey Township First Aid Squad
- Lanoka Harbor First Aid Squad
- Waretown First Aid Squad

**2. Firefighting Organizations**

NOTE: These are supplemented by Mutual Aid agreements with other firefighting as organizations.

- Lanoka Harbor Fire Department
- Forked River Volunteer Fire Company
- Bayville Fire Department

**3. Law Enforcement Agencies**

- New Jersey State Police
- Lacey Township Police Department

**APPENDIX 5: GLOSSARY OF TERMS AND ACRONYMS****Glossary of Terms**

Accident Assessment	Accident assessment consists of a variety of actions taken to determine the nature, effects and severity of an accident and includes evaluation of spent fuel cooling and integrity, meteorological observations, seismic observations, fire reports, radiological dose projections, and radiological and environmental monitoring.
Alert Classification	See definition in Section 4.2.
Annual	Frequency of occurrence equal to once per calendar year, January 1 to December 31.
Assessment Actions	Those actions taken during or after an emergency to obtain and process information that is necessary to make decisions to implement specific emergency measures.
Classification	The classification of emergencies is divided into TWO (2) categories or conditions, covering the postulated spectrum of emergency situations. The two (2) emergency classifications (Unusual Event and Alert) are characterized by Emergency Action Levels (EALs) or event initiating conditions and address emergencies of increasing severity.
Corrective Action	Those emergency measures taken to lessen or terminate an emergency situation at or near the source of the problem in order to reduce the magnitude of a radiological release.
Dose Projection	The calculated estimate of a radiation dose to individuals at a given location (normally off-site), determined from the source term/quantity of radioactive material (Q) released, and the appropriate meteorological dispersion parameters (X/Q).
Emergency Action Levels (EALs)	A pre-determined, site-specific, observable threshold for a facility Initiating Condition that places the facility in a given emergency class.
Emergency Preparedness	A state of readiness that provides reasonable assurance that adequate protective measures can and will be taken upon implementation of the E-Plan in the event of a radiological emergency.

**APPENDIX 5: GLOSSARY OF TERMS AND ACRONYMS**

Exercise	An event that tests the integrated capability of a major portion of the basic elements existing within emergency preparedness plans and organizations.
Hostile Action	See Section 6.2 of Addendum 1.
Initiating Condition	See Section 6.2 of Addendum 1.
ISFSI	See Section 6.2 of Addendum 1.
Monthly	Frequency of occurrence equal to once per calendar month.
Off-Site	The area around a nuclear facility that lies outside the station's "site boundary".
Offsite Dose Calculation Manual (ODCM)	The ODCM presents a discussion of the following: <ol style="list-style-type: none"><li>1. The ways in which nuclear power stations can affect their environment radiologically</li><li>2. The regulations which limit radiological effluents from the nuclear power stations; and</li><li>3. The methodology used by the nuclear power stations to assess radiological impact on the environment and compliance with regulations.</li></ol>
On-Site	The area around a nuclear facility that lies within the station's "site boundary".
Plant Operator	Any member of the plant staff who, by virtue of training and experience, is qualified to assess the indications or reports for validity and to compare the same to the EALs in the licensee's emergency classification scheme. A "plant operator" does not encompass plant personnel such as chemists, radiation protection technicians, craft personnel, security personnel, and others whose positions require they report, rather than assess, abnormal conditions to the control room.
Projected Dose	That calculated dose that some individuals in the population group may receive if no protective actions are implemented. Projected doses are calculated to establish an upper limit boundary.
Protected Area	See Section 6.2 of Addendum 1.

**APPENDIX 5: GLOSSARY OF TERMS AND ACRONYMS**

Protective Action	Measures taken to effectively mitigate the consequences of an accident by minimizing the radiological exposure that would likely occur if such actions were not taken.
Release	A ' <i>Release in Progress</i> ' is defined as <u>ANY</u> radioactive release that is a result of, or caused by, the emergency event.
Site Boundary	Oyster Creek's Site Boundary is described in detail in the ODCM.
Site Evacuation	The evacuation of non-essential personnel from the facility site.
Source Term	Radioisotope inventory or amount of radioisotope released to the environment, often as a function of time.
Unusual Event Classification	See definition in Section 4.1.

**APPENDIX 5: GLOSSARY OF TERMS AND ACRONYMS****ACRONYMS**

Any abbreviation followed by a lower case 's' denotes the plural form of the term.

ARM	Area Radiation Monitor
BNE	Bureau of Nuclear Engineering (New Jersey)
CFR	Code of Federal Regulations
CR	Control Room
DEP	Department of Environmental Protection (New Jersey)
DLR	Dosimeter of Legal Record
DOE	U. S. Department of Energy
DOT	U. S. Department of Transportation
DSAR	Defueled Safety Analysis Report
EAL	Emergency Action Level
ENS	Emergency Notification System (NRC)
EPA	U. S. Environmental Protection Agency
GET	General Employee Training
NJ-OEM	New Jersey-Office of Emergency Management
NRC	U. S. Nuclear Regulatory Commission
NRF	National Response Framework
NWS	National Weather Service
OEM	Office of Emergency Management (NJ State Police)
PAG	Protective Action Guide
PDEP	Permanently Defueled Emergency Plan
RMS	Radiation Monitoring System