



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

March 7, 2018

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
Oyster Creek Generating Station  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION - ISSUANCE OF  
AMENDMENT RE: CHANGES TO THE EMERGENCY PLAN FOR  
PERMANENTLY DEFUELED CONDITION (CAC NO. MF9352;  
EPID L-2017-LLA-0177)

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 293 to Renewed Facility Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station, in response to your application dated February 28, 2017, as supplemented by letters dated September 20 and November 10, 2017.

The amendment changes the site emergency plan to revise the on-shift staffing and the Emergency Response Organization staffing for the permanently defueled condition.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, appearing to read "John G. Lamb".

John G. Lamb, Senior Project Manager  
Special Projects and Process Branch  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosures:

1. Amendment No. 293 to Renewed DPR-16
2. Safety Evaluation

cc: Listserv



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 293  
Renewed License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Exelon Generation Company, LLC (the licensee), dated February 28, 2017, as supplemented by letters dated September 20 and November 10, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 293, Renewed Facility Operating License No. DPR-16 is hereby amended to authorize the revision to the Oyster Creek Nuclear Generating Station Site Emergency Plan as set forth in the licensee's application dated February 28, 2017, as supplemented by letters dated September 20 and November 10, 2017, and as evaluated in the NRC staff's safety evaluation issued with this amendment.
3. This license amendment is effective following the docketing of the certifications required by 10 CFR 50.82(a)(1) that Oyster Creek has been permanently defueled and shall be implemented within 60 days, as noted, but will not exceed March 29, 2020.

FOR THE NUCLEAR REGULATORY COMMISSION



Brian E. Holian, Acting Director  
Office of Nuclear Reactor Regulation

Date of Issuance: March 7, 2018



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 293

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-16

EXELON GENERATION COMPANY, LLC

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated January 7, 2011 (Reference 1), Exelon Generation Company, LLC (Exelon or the licensee), informed the U.S. Nuclear Regulatory Commission (NRC) that the Oyster Creek Nuclear Generating Station (Oyster Creek) would permanently cease operations no later than December 31, 2019. By letter dated February 14, 2018 (Reference 2), Exelon informed the NRC that the revised date that Oyster Creek would permanently cease operations would be no later than October 31, 2018. Upon docketing of the certifications for permanent cessation of power operations (paragraph 82(a)(1)(i) to Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the *Code of Federal Regulations* (10 CFR)) and permanent removal of fuel from the reactor vessel (10 CFR 50.82(a)(1)(ii)), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for Oyster Creek will no longer authorize operation of the reactor, or emplacement or retention of fuel into the reactor vessel. The irradiated fuel will be stored in the spent fuel pool (SFP) and in dry cask storage at the onsite independent spent fuel storage installation (ISFSI) until it is shipped offsite.

By application dated February 28, 2017 (Reference 3), and as supplemented by letters dated September 20 and November 10, 2017 (References 4 and 5, respectively), Exelon requested approval by the NRC of the proposed changes to the Oyster Creek Radiological Emergency Plan (hereafter referred to as the Oyster Creek Site Emergency Plan (SEP)) as required under 10 CFR 50.54(q)(4), prior to implementation by the licensee, to support the planned permanent cessation of operations and permanent defueling of the Oyster Creek reactor. The proposed changes would revise the Oyster Creek SEP emergency response organization (ERO) on-shift and augmented staffing commensurate with the reduced spectrum of credible accidents for a permanently shutdown and defueled power reactor facility. As a result of the transition from an operating facility to a permanently defueled facility, the proposed changes will properly reflect the conditions of the facility, while continuing to maintain effectiveness of the Oyster Creek SEP.

The proposed changes would revise the Oyster Creek SEP to eliminate the following on-shift ERO positions from current staffing levels:

- Two Reactor Operators (ROs),
- One Shift Technical Advisor (STA)/Incident Advisor (IA), and
- One Chemistry Technician.

Also, the following ERO augmented positions are proposed to be eliminated:

Technical Support Center (TSC)

- One Radiation Controls Coordinator,
- One Radiation Controls Engineer,
- One TSC Operations Communicator,
- One Control Room (CR) Operations Communicator,
- One CR Damage Control Communicator,
- One TSC Damage Control Communicator,
- One TSC Technical Communicator,
- One Health Physics Network (HPN) Communicator,
- One Logistics Coordinator, and
- One Computer Specialist.

Operations Support Center (OSC)

- One Assistant OSC Director,
- One Chemistry Lead,
- One Mechanical Lead,
- One Electrical/Instrument & Controls (I&C) Lead,
- One Radiation Protection (RP) Lead,
- One Operations Lead,
- Maintenance, RP, and Operations Pooled Positions, and
- One OSC Damage Control Communicator.

Emergency Operations Facility (EOF)

- One Regulatory Liaison,
- One Dose Assessor,
- One Emergency Notification System (ENS) Communicator,
- One Events Recorder,
- One Operations Advisor,
- One Technical Advisor, and
- One Administrative Coordinator.

Joint Information Center (JIC)

- One Public Information Director,
- One Events Recorder,
- One Access Controller,
- One JIC Coordinator, and
- One Administrative Coordinator.

The supplemental letters dated September 20 and November 10, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on April 25, 2017 (82 FR 19103).

## 2.0 REGULATORY EVALUATION

An operating power reactor licensee's emergency plan is developed for a level of effectiveness commensurate with the potential consequences to public health and safety for a wide spectrum of accident scenarios. With the permanent cessation of operations and the permanent removal of the fuel from the reactor vessel at Oyster Creek, most of the accident scenarios postulated for an operating power reactor will no longer be possible. The irradiated fuel will be stored in the SFP and in the onsite ISFSI until it can be moved offsite for long-term storage or disposal. The reactor, reactor coolant system, and reactor support systems are no longer in operation, and have no function related to the storage of the irradiated fuel. Therefore, postulated accidents involving a failure or malfunction of the reactor, reactor coolant system, or reactor support systems are no longer applicable. Chapter 15, "Accident Analysis," of the Oyster Creek Updated Final Safety Analysis Report describes the abnormal operational transients and design-basis accident (DBA) scenarios that are applicable during plant operations. The postulated DBA that will remain applicable to Oyster Creek in its permanently shutdown and defueled condition is the fuel handling accident in the containment, where the SFP is located. Chapter 15 of the Updated Final Safety Analysis Report will be revised to eliminate the DBAs that will not be applicable in the permanently defueled condition. During reactor decommissioning, the principal public safety concerns involve the radiological risks associated with the storage of spent fuel onsite.

The regulatory requirements and guidance on which the NRC staff based its review of the license amendment request are addressed below.

### 2.1 Regulatory Requirements

Section 10 CFR 50.47(b)(1) states, in part, that "each principal response organization has staff to respond and to augment its initial response on a continuous basis."

Section 10 CFR 50.47(b)(2) states, in part, that "adequate staffing to provide initial facility accident response in key functional areas is maintained at all times," and that "timely augmentation of response capabilities is available...."

Section 10 CFR 50.54(q)(4) states, in part, that "[t]he changes to a licensee's emergency plan that reduce the effectiveness of the plan...may not be implemented without prior approval by the NRC. A licensee desiring to make such a change...shall submit an application for an amendment to its license."

Section 10 CFR 50.72(a)(3) states that "[t]he licensee shall notify the NRC immediately after notification of the appropriate State or local agencies and not later than one hour after the time the licensee declares one of the Emergency Classes."

Section IV.A, "Organization," of Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, states, in part, that "[t]he organization

for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization...."

Section IV.D.3, "Notification Procedures," of Appendix E to 10 CFR Part 50, states, in part, that "[a] licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency."

## 2.2 Guidance

Regulatory Guide (RG) 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," October 1981 (Reference 6), provides guidance on methods acceptable to the NRC staff for implementing the planning standards of 10 CFR 50.47(b)(1) and (2), and the requirements of Sections IV.A and IV.D of Appendix E to 10 CFR Part 50. Revision 2 of RG 1.101 endorses Revision 1 to NUREG-0654/FEMA-REP-1 [Federal Emergency Management Agency – Radiological Emergency Preparedness], "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980 (referred to hereafter as NUREG-0654) (Reference 7), which provides specific acceptance criteria for complying with the planning standards set forth in 10 CFR 50.47. These criteria provide a basis for NRC licensees, and State and local governments to develop acceptable radiological emergency plans.

In NUREG-0654, Section II, "Planning Standards and Evaluation Criterion," Evaluation Criteria II.B.1 and II.B.5 address the 10 CFR 50.47(b)(2) planning standard. Evaluation Criterion II.B.1 specifies the onsite emergency organization of plant staff personnel for all shifts, and its relation to the responsibilities and duties of the normal shift complement. In addition, Evaluation Criterion II.B.5, states, in part, that:

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. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1.

The NRC's Office of Nuclear Security and Incident Response (NSIR)/Division of Preparedness and Response (DPR) Interim Staff Guidance (ISG) document - NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants," November 2011 (Reference 8), provides updated guidance information to address emergency planning requirements for nuclear power plants. Specifically, NSIR/DPR-ISG-01 was developed to address the assignment of tasks or responsibilities to on-shift ERO personnel that would potentially overburden them and prevent the timely performance of their emergency plan functions. The ISG also endorsed the Nuclear Energy Institute (NEI) document NEI 10-05, Revision 0, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," June 2011 (Reference 9), which was developed to establish a standard methodology for licensees to perform analyses of the ability of on-shift staff to perform all required functions and tasks necessary to respond to a declared emergency for an operating power reactor. Licensees are able to use this methodology as an acceptable method to meet the requirement of Section IV.A.9 to Appendix E of 10 CFR Part 50 for all accident scenarios that are applicable in a permanently defueled condition. However, the

licensee must also evaluate the continued on-shift staffing required to promptly implement the SFP implementation strategies required in accordance with License Condition C.8 of the Oyster Creek Renewed Facility Operating License based on the continued storage of spent fuel in the SFP.

### 3.0 TECHNICAL EVALUATION

The NRC staff reviewed the licensee's regulatory and technical analyses in support of its proposed emergency plan changes, as described in the licensee's letter dated February 28, 2017, and as supplemented by letters dated September 20 and November 10, 2017. The NRC staff reviewed the request using the evaluation criteria in Table B-1 of NUREG-0654, as well as the licensee's ability to promptly implement the SFP mitigation strategies, if required. The NRC staff's technical evaluation for each major functional area of Table B-1 to NUREG-0654 is detailed in Sections 3.1 through 3.7 of this safety evaluation.

In Section 2.1 of Attachment 1, "Evaluation of Proposed Changes," of the letter dated February 28, 2017, the licensee stated, in part, that:

To support reduced staffing following permanent cessation of operations and permanent removal of fuel from the reactor vessel, the staffing levels have been evaluated, in part, using the methodology in NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," ...which evaluates the postulated accidents that will be applicable in the permanently defueled condition.

Specifically, the licensee stated that the following accident scenarios were evaluated in the analysis of proposed post-shutdown on-shift staff:

- Design basis threat,
- Fuel handling accident,
- Aircraft potential threat,
- Fire requiring evacuation of the CR and control of service water pumps from a remote location,
- General Emergency with radioactive release and protective action recommendation (PAR), and
- Station blackout.

The spectrum of credible accidents and operational events for a permanently shutdown and defueled reactor, and the number and complexity of activities required for the safe storage of spent nuclear fuel is reduced, as compared to an operating plant. As such, the licensee identified that the primary events of concern in the immediate post-shutdown and defueled condition will be a fuel handling accident and a loss of SFP cooling and/or water inventory.

In Section 5.1 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

During fuel handling activities there will ordinarily be extra [Certified Fuel Handler (CFH)] and Radiation Protection personnel on site that will, were a fuel handling accident to occur, be able to respond to the event.... Events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of



normal and emergency SFP inventory makeup strategies and mitigating strategies required under license condition C.8, "Mitigation Strategy License Condition" and 10 CFR 50.54(hh)(2).

3.1 Major Functional Area: Plant Operations and Assessment of Operational Aspects

The guidance for licensee minimum staffing for nuclear power plants licensed by the NRC is documented in Table B-1 of NUREG-0654. Plant operations shift staffing, as implemented in the current Oyster Creek SEP, was based on a philosophy that provided defense-in-depth for an operating nuclear power plant.

The Oyster Creek SEP currently identifies the following Operations on-shift staffing:

- One Shift Manager,
- One Control Room Supervisor,
- One Shift Technical Advisor/Incident Assessor,
- Two Reactor Operators,
- One Equipment Operator, and
- One Shift Communicator.

The licensee's post-shutdown On-Shift Staffing Analysis (OSA) concluded that in a permanently shutdown and defueled condition, with the postulated accidents that would be applicable to that condition, the following on-shift complement would be able to perform all required Oyster Creek SEP actions in a timely manner and that there are no identified collateral duties that would prevent the timely performance of emergency plan functions:

- One Shift Manager (CFH),
- One Operations Supervisor (CFH),
- Two Non-Certified Operators (NCOs), and
- One Shift communicator.

In Section 5.2.1 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

Plant operations shift staffing, as implemented previously, was based on a philosophy that provided defense-in-depth for an operating nuclear power plant. Because of the reduced number of possible events requiring mitigating actions and the limited number of actions to be performed by the Control Room positions for a permanently shutdown and defueled condition, no RO or Shift Technical Advisor/Incident Assessor (STA/IA) job tasks are required for any of the events analyzed in the post-shutdown OSA. The post-shutdown OSA forms the basis for the proposed changes to the on-shift staffing.

In Section 5.3.1 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

The on-shift technical support function for the remaining accident scenarios associated with the storage of spent fuel will be assumed by the Control Room personnel. [Oyster Creek's] post-shutdown OSA assessed the on-shift Shift

Manager/CFH and Operations Supervisor/CFH tasks and showed they are available to perform any required technical analysis associated with the storage of spent fuel until augmented by the TSC Technical Support Manager in a timely manner and that there are no collateral duties that would prevent the timely performance of this task.

The licensee concluded that the proposed on-shift staffing changes do not impact the capabilities of the on-shift staff to respond to an emergency and continue to comply with the Oyster Creek SEP, site commitments, and applicable regulations.

Based on this, the proposed level of onsite operations staffing will continue to provide for the direction and performance of actions to mitigate the remaining DBA and the prompt implementation of mitigating actions in response to an SFP accident.

The NRC reviewed the licensee's analysis of proposed post-shutdown on-shift staffing and determined that due to the permanently shutdown and defueled condition, with the postulated accidents that would be applicable to that condition, the proposed level of onsite operations staffing will continue to provide for the direction and performance of actions to mitigate the remaining DBA and the prompt implementation of mitigating actions in response to an SFP accident.

Based on the NRC staff's review of the information in this section, the NRC staff finds that the proposed level of staffing continues to meet the planning standards of 10 CFR 50.47(b)(2) to have adequate staffing to provide initial facility response, and the requirements of Section IV.A of Appendix E to 10 CFR Part 50 to describe the organization for coping with radiological emergencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition of the Oyster Creek facility. As such, the proposed changes in on-shift staffing for the positions listed above for this functional area are acceptable and do not impact the ability of the on-shift staffing to perform the required plant operations and assessment of operational aspects functions.

### 3.2 Major Functional Area: Notification/Communication

The Oyster Creek SEP currently identifies an on-shift staffing position as the Shift Communicator for performing the function of notification/communication. The on-shift notification will typically be performed by an NCO or Operations Supervisor at Oyster Creek. The licensee proposes to maintain the present communication protocol (i.e., the function would remain within the CR until the augmented staff relieves the on-shift communicator).

The regulations in Section IV.D.3 of Appendix E to 10 CFR Part 50 require that "[a] licensee shall have the capability to notify responsible State and local government agencies within 15 minutes after declaration of an emergency classification." The licensee stated that Oyster Creek will notify the State and local communities within 15 minutes after declaration of an emergency, and will notify the NRC immediately after notification of the appropriate State or local agencies and no later than 60 minutes after the time Oyster Creek declares one of the emergency classes.

Oyster Creek uses the Nuclear Accident Reporting System, located in the CR, TSC, and the EOF, to support the offsite notification function. The Nuclear Accident Reporting System is a system of dedicated phone circuits independent of the normal landline phone system that utilizes an auto-ring feature. It is used to transmit information to the New Jersey State Police

(NJSP)/Office of Emergency Management for events classified as a Notification of Unusual Event, Alert, and Site Area Emergency. For a General Emergency, the Nuclear Accident Reporting System's dedicated line features a group call such that the NJSP/Office of Emergency Management and local agencies (Ocean County, Lacey Township, and Ocean Township) will receive the notification simultaneously. This system is available on a 24-hour basis and incorporates all of the principal emergency response centers into a single, dedicated network.

The regulation in 10 CFR 50.72(a)(3) requires that the licensee notify the NRC immediately after notification of the appropriate State or local agencies and not later than 60 minutes after the time the licensee declares one of the emergency classes. Oyster Creek uses the dedicated ENS network to support the notification function to NRC. For purposes of the OSA, the NRC notifications were treated as a continuous action in accordance with 10 CFR 50.72(c)(3), meaning that once the initial NRC communications are established, it was assumed that the NRC will request an open line to be continuously maintained with the NRC Operations Center using the dedicated ENS network. The use of dedicated phone circuits and wireless headsets facilitates the ability of the same on-shift communicator to perform both the notifications to State and local, and the NRC.

In the post-shutdown condition, the task of notifying and communicating with offsite authorities will typically be performed by an NCO or Operations Supervisor at Oyster Creek. The NRC staff reviewed the licensee's analysis of proposed post-shutdown on-shift staffing and determined that in a permanently defueled condition, the designated on-shift staffing could perform this required Oyster Creek SEP action in a timely manner. In addition, there were no collateral duties identified that would prevent the timely performance of this emergency plan function. Additionally, the licensee continues to maintain the same level of communications equipment capabilities to perform timely communications with the required offsite agencies.

Based on the NRC staff's review of the information in this section, the NRC staff finds that the proposed level of staffing continues to meet the planning standards of 10 CFR 50.47(b)(2) to have adequate staffing to provide initial facility response, and the requirements of Appendix E to 10 CFR Part 50 Section IV.A to describe the organization for coping with radiological emergencies and Section IV.D for having the capability to notify responsible State and local governmental agencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition of the Oyster Creek facility. As such, the proposed changes in on-shift staffing for the positions listed above for this functional area are acceptable and do not impact the ability of the on-shift staffing to perform the required notification/communication functions.

### 3.3 Major Functional Area: Radiological Accident Assessment and Support of Operational Accident Assessment

The purpose of conducting accident assessment is to review radiological conditions using data from available instrumentation, assessing the impact of changing radiological conditions on emergency classification, assisting in accident assessments based upon those changing radiological conditions, and recommending appropriate offsite protective measures.

The Oyster Creek SEP currently identifies the following on-shift staffing:

- Two RP Technicians,
- One RP Personnel (Offsite Dose Assessment), and
- One Chemistry Technician.

The licensee proposes to eliminate the Chemistry Technician and change the designation of "RP Personnel" performing dose assessment to "Plant Personnel."

In Section 5.3.1.e of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

Currently, the Chemistry Technician is an on-shift position per the Emergency Plan EP-OC-1000 ["Oyster Creek Radiological Emergency Plan"], Table B-1 ["Minimum Staffing Requirements"] so that a technician is always available to immediately collect and analyze a liquid sample if the applicable radiation monitor is not available during a release, or as directed by the [Shift Manager (SM)].

[Oyster Creek] will either qualify an existing on-shift person to perform sampling and analysis at various locations throughout the plant or maintain a Chemistry Technician on shift. If a Chemistry Technician is placed on shift, the Chemistry Technician may be assigned other collateral duties (e.g., Fire Brigade).

In Section 5.3.1.e of Attachment 1 of the letter dated February 28, 2017, the licensee further stated, in part, that:

For gaseous releases, the only credible scenario for releasing gas would be to mechanically damage spent fuel during handling or by impact of a heavy object. Activities that could cause mechanical damage will require that a Chemistry Technician be on-site or the radiation monitor listed in gaseous effluent [emergency action levels (EALs)] is in service, thereby alleviating any reliance on a potentially delayed sample analysis to determine EAL applicability.

In Attachment 1 of its letter dated November 10, 2017, the licensee stated, in part, that:

..."Offsite Dose Assessment" (Item 4, Table B-1) will be performed by plant personnel. This permits an Operations person to perform this function if the third RP technician is performing other RP-related functions. The RP technicians and Operations Supervisors/Certified Fuel Handlers who will perform the Dose Assessment function, will be trained and qualified to perform Dose Assessment, commensurate with the current level of training received by the RP individual(s). This function is augmented by Emergency Operations Facility (EOF) personnel within 60 minutes of notification who will assume the Offsite Dose Assessment function once the EOF is activated.

The NRC staff reviewed the licensee's analysis of proposed post-shutdown on-shift staffing which provided that there were not any chemistry job tasks required within the first 90 minutes of any of the analyzed events. There is a commitment to revise applicable fuel handling procedures to require that a Chemistry Technician be on site, or the radiation monitor listed in

the Abnormal Rad Levels/Radiological Effluents EALs is in service, as a prerequisite to handling or moving spent fuel. Based on this, the removal of the Chemistry Technician is acceptable.

The change in designation for personnel performing dose assessment is an administrative change and is acceptable.

Based on the NRC staff's review of the information in this section, the NRC staff finds that the proposed level of the staffing continues to meet the planning standards of 10 CFR 50.47(b)(2) that adequate staffing to provide initial facility accident response is maintained, and the requirements of Section IV.A of Appendix E to 10 CFR Part 50 to describe the organization for coping with radiological emergencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition of the Oyster Creek facility. As such, the proposed changes in on-shift staffing for the positions listed above for this functional area are acceptable and do not impact the ability of the on-shift staffing to perform the required radiological accident assessment and support of operational accident assessment functions.

### 3.4 Major Functional Area: Plant System Engineering

The licensee proposes to eliminate the STA/IA position from the SEP, since the permanent cessation of power operations and removal of fuel from the reactor vessel no longer makes the position necessary for technical and analytical assistance for plant operational concerns during abnormal and emergency situations, analysis of events and their effects, or the on-shift core/thermal hydraulics function of the emergency plan.

In Section 5.2.4 of Attachment 1 of its letter dated February 28, 2017, the licensee stated, in part, that:

The emergency planning function of the STA/IA is to perform assessments of plant operating concerns, technical support, appropriate corrective actions, analysis of events and their effects, effectiveness of response(s) to emergent conditions, classifications of emergencies, protection of the public, and any other actions related to critical safety functions and plant safety during abnormal and emergency situations. The STA/IA also contributes to operations during normal plant conditions. By routine monitoring of equipment and plant operations, the STA/IA can focus on preventative actions in order to mitigate the consequences of an accident. Additionally, the STA/IA provides the core/thermal hydraulics function of the emergency plan for the confirmation of adequacy of core cooling, maintenance of coolable core geometry, and to verify that actual plant response to the event is as expected, until relieved by the TSC Core Thermal Engineer within 60 minutes of notification.

In Section 5.2.4.a of Attachment 1 of its letter dated February 28, 2017, the licensee stated, in part, that:

The Engineering function will continue to be maintained by the Augmented Staff through TSC Technical Manager who is an [Oyster Creek] staff engineer. Support for this position is also maintained by the EOF Technical Support Manager, which has been designated as a Minimum Staff position per this License Amendment Request and is also an [Oyster Creek] staff engineer.

In Attachment 1 of the letter dated September 20, 2017, the licensee stated, in part, that:

[T]he TSC Technical Manager will be qualified to provide engineering support in response to a fuel handling accident or an event resulting in damage to the SFP integrity or loss of SFP cooling or inventory. Qualifications for the TSC Technical Manager ERO position selection criteria will align with the current position requirements.

The NRC staff reviewed the analysis of proposed post-shutdown on-shift staffing and because of the permanent cessation of power operations and removal of fuel from the reactor vessel, the STA/IA position is no longer necessary for technical and analytical assistance. The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently defueled condition is also greatly reduced, which reduces the assessment and mitigation activities in the CR. The analysis of proposed post-shutdown on-shift staffing concluded that the Shift Manager/CFH and Operations Supervisor/CFH can perform any required technical analysis associated with the storage of spent fuel in a timely matter, until augmented by the TSC Technical Manager, and there are no collateral duties that would prevent the timely performance of this task.

Based on the NRC staff's review of the information in this section, the NRC staff finds that the proposed level of the staffing continues to meet the planning standards of 10 CFR 50.47(b)(1) to have the staff to respond to and augment its initial response, and 10 CFR 50.47(b)(2) to have adequate staffing to provide initial facility response, and the requirements of Section IV.A of Appendix E to 10 CFR Part 50 to describe the organization for coping with radiological emergencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition of the Oyster Creek facility. As such, the proposed changes in on-shift staffing for the positions discussed above for this functional area are acceptable and do not impact the ability of the on-shift staffing to perform the required plant system engineering functions.

### 3.5 Major Functional Area: Repair and Corrective Actions

The current Table B-1 of NUREG-0654, provides that repair and corrective action tasks may be performed by qualified shift personnel assigned to other emergency response functions/tasks (i.e., collateral duties). In addition, repair and corrective action is an acceptable collateral duty in accordance with the guidance in NEI 10-05, Revision 1.

In Section 5.2.4.b of Attachment 1, of the letter dated February 28, 2017, the licensee stated, in part, that:

The Mechanical Maintenance [and Electrical /I&C Maintenance] function[s] provide for minor or limited scope damage repair and corrective actions, such as component repositioning, surveillance necessary for accident mitigation and/or hands off troubleshooting.

In Attachment 1, "Response to NRC's Request for Additional Information," to the letter dated November 10, 2017, the licensee stated, in part, that:

The Maintenance personnel who will be designated to perform the "Repair and Corrective Actions" functions will be dedicated Maintenance personnel who will

be qualified to perform both the Electrical Maintenance and Mechanical Maintenance functions of the augmented Maintenance responders addressed in the guidance in NUREG-0654, Table B-1, "Repair and Corrective Actions."

As there are no staffing changes proposed for this functional area, the NRC staff concludes that the change will not impact the timing or performance of existing emergency response duties and will continue to provide initial facility accident response in this functional area.

### 3.6 Major Functional Area: Protective Actions (In-Plant)

The function of these resources is to provide radiation protection oversight of the on-shift complement of personnel for damage repair, corrective actions, search and rescue, first aid, firefighting, and personnel monitoring.

The Oyster Creek SEP currently identifies the on-shift RP staffing as two RP Technicians for "In-plant Surveys," one RP Personnel for "Dose Assessment," which are also assigned "In-Plant Protective Actions" as a collateral function. The licensee originally proposed to reduce the number of RP Technicians from three to one in the proposed Oyster Creek SEP.

However, in Attachment 1 to the letter, dated November 10, 2017, the licensee stated, in part, that:

[Oyster Creek] is proposing to return the RP personnel levels for "In-Plant and Onsite Surveys" (Item 4, Table B-1) and "In-Plant Protective Actions" (Item 6, Table B-1) to the level in the current operating SEP. Their activities will be coordinated through the Operational Support Center (OSC) Director. Additional RP technicians may be called in as reflected by Note (d).

For a permanently shutdown and defueled condition, the evaluated Design Basis Accidents are limited to the Spent Fuel Pool (SFP) area where a single Radiation Protection technician(s) can provide adequate response and access control. [Oyster Creek] will normally staff three RP technicians on site to support the "Radiological Accident Assessment" and "In-Plant Protective Actions" functions. Additionally, worker access control is automated because RP work processes are computerized. Radiation Work Permit (RWP) access control and electronic dosimeter computer systems work together to provide a fully integrated system, allowing workers to sign-in on their RWP and to self-issue electronic dosimeters. The electronic dosimeter provides the worker with a continuous status of dose received and work area dose rates, and will alarm at preset dose and dose rate alarms. An annual RWP dedicated for SEP response will be written and available on the first day of each year, which will preauthorize access for Emergency Response Organization (ERO) personnel in accordance with SEP implementing procedures. These functions have been successfully demonstrated during ERO drills that go beyond DBAs for the operating plant with the same level of RP technicians.

As there are no staffing changes proposed for this functional area, the NRC staff concludes that the change will not impact the timing or performance of existing emergency response duties and will continue to provide initial facility accident response in this functional area.

### 3.7 Major Functional Areas: Fire Fighting/Rescue Operations and First Aid

The Oyster Creek Fire Brigade complement currently consists of five persons trained in accordance with Exelon's Nuclear Fire Protection Program.

In Section 5.3.1 of Attachment 1 of the February 28, 2017, letter, the licensee stated, in part, that:

This Post-Shutdown On-Shift Staffing Assessment (Attachment 4 of this LAR [license amendment request]) assumes a Fire Brigade consisting of five (5) persons. Per the assessment, two (2) additional plant personnel are needed to form the fire brigade in conjunction with three (3) Plant staff on shift (who are assigned to the Fire Brigade as a collateral duty). Upon a successful evaluation and approval of an incipient Fire Brigade in accordance with 10 CFR 50.48(f), the Fire Brigade compliment will be reduced to three (3). This is anticipated to occur sometime following shutdown. Until the 50.48(f) Fire Brigade evaluation is completed, the Fire Brigade will consist of five (5) persons.

Section L.2, "Onsite First Aid Capability," of the proposed Oyster Creek SEP states, in part, that:

Station personnel are also trained and qualified to administer first aid. At least two of these individuals are available on shift at all times.

As there are no staffing changes proposed for this functional area, the NRC staff concludes that the change will not impact the timing or performance of existing emergency response duties and will continue to provide initial facility accident response in this functional area.

### 3.8 Licensee Augmented ERO Changes

The proposed changes to the Oyster Creek SEP will eliminate certain ERO positions currently identified in Section B, "Emergency Response Organization," of the proposed Oyster Creek SEP and emergency plan implementing procedures (EIPs) for the augmentation of the control room staff, and the activation and operation of the TSC, EOF, OSC, and JIC. Several of these positions are described in Table B-1 of the Oyster Creek SEP and EIPs as positions required to meet the minimum positions needed to declare the respective emergency response facility (ERF) operational. The proposed changes to the Oyster Creek SEP will also eliminate non-minimum ERO positions (i.e., not required for augmentation or facility activation), which are currently identified in EIPs as support personnel.

The ERFs at Oyster Creek are considered activated when minimum staffing and basic setup requirements have been attained to allow the facility to provide minimum support to the operating staff and other facilities. The ERFs at Oyster Creek are considered augmented when all minimum and augmenting staffing positions are filled. Selected support staff, which assists the minimum and augmenting staff, is shown on Table B-1 of the Oyster Creek SEP. The support staff is intended to supplement and enhance operation of their respective facilities. Additional personnel may respond.



The proposed changes to the Oyster Creek SEP will eliminate the following minimum staffing ERO positions for activation of ERFs currently identified in the Oyster Creek SEP:

- TSC Director,
- TSC Core Thermal Engineer,
- TSC Mechanical Engineer,
- TSC Electrical Engineer,
- EOF Director, and
- JIC News Writer.

In Section 4.3 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

In the permanently shutdown and defueled condition, [Oyster Creek] will maintain ERO teams, with one complete team being on duty. When the Shift Manager directs the activation of the ERO call out system, all ERO members are notified to facilitate adequate coverage of ERO positions at their designated emergency response facilities (ERF). [Oyster Creek] requires members to act promptly in reporting to their assigned ERF, even when not on duty. Excess personnel that respond may be assigned support responsibilities or be designated as a relief shift.

EP-OC-1000 ["Oyster Creek Radiological Emergency Plan"], Table OCGS B-1 ["Minimum Staffing Requirements,"] identifies the personnel required to staff and activate the TSC, OSC, EOF, and the JIC. Depending upon the emergency classification, different levels of mobilization are implemented. The mobilization scheme ensures that specific technical disciplines identified by Table B-1 of NUREG-0654 can be augmented within appropriate time frames.

In Section 5.3.3 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

Additionally, [Oyster Creek] will perform a drill to conduct the ability of the post-shutdown ERO [to] perform the necessary functions of each emergency response facility and to utilize the post-shutdown procedures being developed depicting the revised assignment of duties. The drill will involve a spent fuel pool event that tests the major elements of the licensee's emergency plan and communications/coordination with offsite response organizations, including the Joint Information Center. State and local response organizations will be offered the opportunity to participate, and the NRC and FEMA will be provided advance notice and the opportunity to observe drill activities. The drill will demonstrate and validate the ability to accomplish the stated mission of each ERF, and to ensure that the planning standard functions are preserved with no degradation in time-sensitive activities or in the ability to communicate with off-site response organizations. The drill will also validate that the post-shutdown ERO continues to address the risks to public health and safety [in the permanently defueled condition] and will comply with the [Oyster Creek] Emergency Plan [as proposed], site commitments and applicable regulation.

In addition, other training drills will be conducted to train post-shutdown station ERO members. These drills may not involve all Exelon ERFs or State/local participation; however, all ERO members will participate in at least one training drill. The post shutdown [emergency preparedness] procedures which support the defueled condition will be available in draft form to support the drills. Final implementation of the procedures will occur concurrent with implementation of the post shutdown emergency plan.

The elimination of the minimum staffing positions TSC Director, TSC Core Thermal Engineer, TSC Mechanical Engineer, TSC Electrical Engineer, EOF Director, and JIC News Writer is evaluated below, in addition to other requested changes to the Oyster Creek ERO.

3.8.1 Operations Support Center

The OSC has been designed to meet the intent of the guidance in NUREG-0696, "Functional Criteria for Emergency Response Facilities," February 1981 (Reference 10), and NUREG-0737, Supplement No. 1, "Clarification of [Three Mile Island (TMI)] Action Plan Requirements," January 1983 (Reference 11), as applicable. The OSC is an onsite assembly area, separate from the CR and the TSC, where licensee operations support personnel shall muster in an emergency. Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the OSC will continue to be located in the TSC Building. The proposed changes to the Oyster Creek SEP do not involve any physical modifications to, or layout configuration changes in the OSC.

The proposed staffing changes do not eliminate any ERO positions in the OSC described in the Oyster Creek SEP as minimum staff positions. The licensee proposes to maintain the OSC Director minimum staff position and add Field Monitoring Teams as minimum staff. All ERO positions in the OSC described in Section B of the Oyster Creek SEP as augmented staff positions are eliminated or assigned to minimum staff.

The following tables illustrate the proposed changes to the OSC staffing in the post-shutdown emergency plan:

<b>Oyster Creek OSC Minimum Staff Positions</b>	
<b>Current Minimum Positions</b>	<b>Proposed Minimum Staff Positions</b>
OSC Director	OSC Director
	<b>Field Monitoring Teams (4 persons) (added as Minimum Staff)</b>

<b>Oyster Creek OSC Augmented Staff Position Disposition</b>		
<b>Position</b>	<b>Response</b>	<b>Position</b>
Field Monitoring Team Member (4)	60 Min Augmentation	<b>Assigned to Minimum Staff</b>
OSC Damage Control Communicator	60 Min Augmentation	<b>Position Eliminated</b>
Assistant OSC Director	Full Augmentation	<b>Position Eliminated</b>
Chemistry Lead	Full Augmentation	<b>Position Eliminated</b>
Mechanical Lead	Full Augmentation	<b>Position Eliminated</b>

<b>Oyster Creek OSC Augmented Staff Position Disposition</b>		
<b>Position</b>	<b>Response</b>	<b>Position</b>
Electrical/I&C Lead	Full Augmentation	<b>Position Eliminated</b>
RP Lead	Full Augmentation	<b>Position Eliminated</b>
Operations Lead	Full Augmentation	<b>Position Eliminated</b>
Maintenance, RP and Ops Pooled Positions	Full Augmentation	<b>Position Eliminated</b>

In Section 5.3.3 of Attachment 1 of the letter dated February 28, 2017, the licensee provided, in part, that:

[Oyster Creek] proposes to only maintain the OSC Director minimum staff position, and if at any time the OSC Director determines that additional support is necessary to accomplish the mission of the OSC, the OSC Director will contact the Logistics Manager in the EOF to arrange for support by additional personnel.

[Oyster Creek] ERO staffing, as required by the [Oyster Creek] Emergency Plan, is intended to address the risks to public health and safety inherent in an operating reactor. The risk in the permanently shutdown and defueled condition is significantly reduced. Many of the potential initiating conditions that would lead to an emergency declaration will no longer be credible. The set of plant equipment required in the permanently shutdown and defueled condition is also greatly reduced, which reduces the assessments and mitigation activities that the OSC must perform. The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for safe storage of spent fuel is reduced, as compared to an operating power reactor. Restoration of equipment supporting spent fuel cooling and inventory will be the primary focus of emergency mitigation actions for the TSC/OSC in a permanently shutdown and defueled condition. In addition, the elimination of credible accidents involving an operating power reactor provides additional time to plan and execute assessment and mitigation actions.

The primary events of concern in the immediate post-shutdown and defueled condition will be a fuel handling accident and a loss of SFP cooling and/or water inventory. During fuel handling activities, station procedures require additional personnel (i.e., RP Techs) on-site that will, in the event that a fuel handling accident were to occur, be able to respond to the event. Events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of the SFP inventory makeup strategies, as required under License Condition C.8, "Mitigation Strategy License Condition" and 10 CFR 50.54(hh)(2). OSC staff is not relied upon to implement SFP inventory makeup. As such, elimination of the Assistant OSC Director, OSC Damage Control Communicator, Chemistry Lead, Maintenance Lead, Electrical/I&C Lead, Operations Lead, RP Lead and the Pool positions does not impact the ability of the ERO to perform the required function based on the permanent shutdown and defueled condition of the facility.

Additionally, [Oyster Creek] will perform a drill to conduct the ability of the post-shutdown ERO to perform the necessary functions of each emergency response facility and utilize the post-shutdown procedures being developed

depicting the revised assignment of duties. The drill will involve a spent fuel pool event that tests the major elements of the licensee's emergency plan and communications/coordination with offsite response organizations, including the Joint Information Center. State and local response organizations will be offered the opportunity to participate, and the NRC and FEMA will be provided advance notice and the opportunity to observe drill activities. The drill will demonstrate and validate the ability to accomplish the stated mission of each ERF, and to ensure that the planning standard functions are preserved with no degradation in time-sensitive activities or in the ability to communicate with off-site response organizations. The drill will also validate that the post-shutdown ERO continues to address the risks to public health and safety and will comply with the [Oyster Creek] Emergency Plan, site commitments and applicable regulation.

In addition, other training drills will be conducted to train post-shutdown station ERO members. These drills may not involve all Exelon ERFs or State/local participation; however, all ERO members will participate in at least one training drill. The post shutdown EP procedures which support the defueled condition will be available in draft form to support the drills. Final implementation of the procedures will occur concurrent with implementation of the post shutdown emergency plan.

The NRC staff reviewed the licensee's analysis of proposed post-shutdown on-shift staffing and determined that due to the permanently shutdown and defueled condition, with the postulated accidents that would be applicable to that condition, the proposed level of OSC staffing remaining after elimination of the Assistant OSC Director, OSC Damage Control Communicator, Chemistry Lead, Maintenance Lead, Electrical/I&C Lead, Operations Lead, RP Lead and the Pool positions will continue to provide the level of support required for the remaining DBA and for mitigative actions in response to an SFP accident.

Based on the NRC staff's review of the information in this section, the NRC staff finds that the proposed level of staffing for the OSC, as described above, continues to meet the planning standards of 10 CFR 50.47(b)(1) to have the staff to respond to and augment its initial response and 10 CFR 50.47(b)(2) to have adequate staffing to provide initial facility response, and the requirements of Section IV.A of Appendix E to 10 CFR Part 50 to describe the organization for coping with emergencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition of the Oyster Creek facility. As such, the proposed changes in OSC staffing for the positions listed above for this functional area are acceptable and do not impact the ability of the ERO to perform the required functions.

### 3.8.2 Technical Support Center

The TSC has been designed to meet the intent of the guidance in NUREG-0696 and the clarification in NUREG-0737, Supplement No. 1, as applicable. The TSC is an onsite facility located close to the control room that shall provide plant management and technical support to the reactor operating personnel located in the control room during emergency conditions. The proposed changes to the Oyster Creek SEP do not involve any physical modifications to, or layout/configuration changes in the TSC.

The following tables illustrate the proposed changes to the TSC staffing in the post-shutdown emergency plan:

<b>Oyster Creek TSC Minimum Staff Positions</b>	
<b>Current Minimum Staff Positions</b>	<b>Proposed Minimum Staff Positions</b>
Station Emergency Director	Station Emergency Director
Rad [Radiation] Protection Manager	Rad Protection Manager
Maintenance Manager	Maintenance Manager
Operations Manager	Operations Manager
Technical Manager	Technical Manager
ENS Communicator	ENS Communicator
TSC Director	<b>Position Eliminated</b>
Core Thermal Engineer	<b>Position Eliminated</b>
Mechanical Engineer	<b>Position Eliminated</b>
Electrical Engineer	<b>Position Eliminated</b>
<b>(added as Minimum Staff)</b>	<b>Security Coordinator</b>

<b>Oyster Creek TSC Augmented Staff Position Disposition</b>		
<b>Position</b>	<b>Response Time</b>	<b>Disposition</b>
Security Coordinator	60 Min Augmentation	<b>Assigned to Minimum Staff</b>
Rad Controls Coordinator	60 Min Augmentation	<b>Position Eliminated</b>
Rad Controls Engineer	60 Min Augmentation	<b>Position Eliminated</b>
TSC Operations Communicator	60 Min Augmentation	<b>Position Eliminated</b>
CR [Control Room] Operations Communicator	60 Min Augmentation	<b>Position Eliminated</b>
CR Damage Control Communicator	60 Min Augmentation	<b>Position Eliminated</b>
Logistics Coordinator	Full Augmentation	<b>Position Eliminated</b>
Computer Specialist	Full Augmentation	<b>Position Eliminated</b>
TSC Technical Communicator	Full Augmentation	<b>Position Eliminated</b>
TSC Damage Control Communicator	Full Augmentation	<b>Position Eliminated</b>
HPN Communicator	Full Augmentation	<b>Position Eliminated</b>

The current Oyster Creek SEP and ERO staffing is intended to address the risks to public health and safety inherent in an operating reactor. The risk in the permanently defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible.

The licensee stated that the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently defueled condition is also greatly reduced, which reduces the assessment and

mitigation activities the TSC must perform. As a result, the licensee concluded that the following proposed positions can be eliminated without placing an undue burden on the remaining positions in the TSC and without increasing the risk to public health and safety:

- One TSC Director,
- One Core Thermal Engineer,
- One Mechanical Engineer,
- One Electrical Engineer,
- One Radiation Controls Coordinator,
- One Radiation Controls Engineer,
- One TSC Operations Communicator,
- One CR Operations Communicator,
- One CR Damage Control Communicator,
- One Logistics Coordinator,
- One Computer Specialist,
- One TSC Technical Communicator,
- One TSC Damage Control Communicator, and
- HPN Communicator.

In Section 5.3.2 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

The proposed staffing changes revise the following minimum staff ERO positions:

- a. TSC Core Thermal Engineer – This position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary in a permanently shutdown and defueled condition. Remaining ERO positions will inherit applicable post shutdown duties from eliminated positions, but not to the extent of jeopardizing the ERF mission.

Elimination of the TSC Core Thermal Engineer position will have no effect on emergency response in a permanently defueled condition because the position does not assess the condition of fuel in the SFP during an emergency. The current TSC Reactor Engineer position satisfies the technical support Core Thermal Hydraulics position included in Table B-1 of NUREG-0654. TSC Core Thermal Hydraulic Engineers have expertise in the area of core damage assessment and core parameter monitoring. The Core Damage Assessment Tool used by the TSC Core Thermal Hydraulic Engineers does not address assessments of SFP fuel damage. However, the Dose Assessment Program utilized by the Dose Assessment Coordinator/Dose Assessor does include in its assessment, spent fuel damage in the SPF. The Core Thermal Engineer supports this assessment by providing needed information; however, the information is not specific to the Core Thermal Engineer qualification and can be provided by the Technical Manager. The information includes information such as

age of fuel, location, or whether the fuel is exposed or covered by water.

Attachment 5 ["Emergency Response Organization Task Analysis"] of this submittal contains the results of the task analysis for the ERO positions.

- b. TSC Director – The TSC Director position supports the Station [Emergency Director (ED)] and oversees activities within the TSC. Responsibilities include supervision of TSC ERO positions and functions.

With the permanent cessation of operations and the permanent removal of the fuel from the reactor vessel at [Oyster Creek], most of the accident scenarios postulated for an operating power reactor are no longer possible. As such, the number and complexity of activities required for the safe storage of spent nuclear fuel is reduced, as compared to an operating plant. The set of plant equipment involved in this permanently defueled condition is also greatly reduced, which also reduces the spectrum of mitigation activities for an emergency.

Although ERO activation/response time requirements will be unchanged, the elimination of credible accidents involving an operating power reactor provides additional time to plan and execute assessment and mitigation actions. [Oyster Creek] procedures direct responding ERO, upon arrival, to assess conditions and obtain additional support as necessary.

The assessment and disposition of specific responsibilities and tasks for the TSC Director is addressed in Attachment 5 of this submittal. It is concluded that all the TSC Director's responsibilities and tasks can either be eliminated or re-assigned to other ERO positions. As such, the TSC Director position can be eliminated without impacting [Oyster Creek's] ability to respond to the spectrum of credible accidents and operational events for a permanently shutdown and defueled reactor.

- c. TSC Mechanical and Electrical Engineers – The TSC Engineers' responsibilities include providing engineering support in response to an accident condition. At [Oyster Creek], the engineers are also qualified to perform the function of the State/local communicator.

The Engineering function will continue to be maintained by the TSC Technical Manager. Support for this position is also maintained by the EOF Technical Support Manager, which has been designated as a Minimum Staff position per this License Amendment Request. [Oyster Creek] staff engineers would be available to provide technical insight for specific issues as needed. ERO members who are engineers and who respond to the ERO

Notification in excess of the required fill count for facility activation can be retained to support identified technical issues as necessary. Additionally, [Oyster Creek's] work management process ensures engineering support is available 24 hours a day/7 days a week to support emergent conditions. Exelon's corporate staff is also available to support emergency engineering issues at the station 24 hours a day/7 days a week.

The assessment and disposition of specific responsibilities and tasks for the TSC Engineers is addressed in Attachment 5 of this submittal. It is concluded that all of the TSC Engineers' responsibilities and tasks can either be eliminated or re-assigned to other ERO positions. As such, the TSC Electrical and Mechanical Engineer position can be eliminated without impacting [Oyster Creek's] ability to respond to the spectrum of credible accidents and operational events for a permanently shutdown and defueled reactor. If additional Engineering support is identified as needed at any time during the response to the Emergency condition, engineering support can be obtained through a request to the Logistics Manager.

In Section 5.3.3 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

The risk in the permanently shutdown and defueled condition is significantly reduced. Remaining ERO positions will inherit duties from eliminated positions (see Attachment 5 of this submittal), but this does not impact the ability of the TSC, as a whole, to perform its designated mission for the scope of remaining applicable accidents. As such, elimination of the non-minimum staff positions of Rad Controls Coordinator, Rad Controls Engineer, TSC Operations Communicator, CR Operations Communicator, CR Damage Control Communicator, Logistics Coordinator, Computer Specialist, TSC Technical Communicator, TSC Damage Control Communicator, State/local Communicator (collateral duty), and HPN Communicator positions do not impact the ability of the ERO to perform the required function based on the permanent shutdown and defueled condition of the facility. Note that the State/local and HPN communicators are redundant to minimum staff State/local and HPN communicator positions in the EOF.

Additionally, Attachment 5, "Oyster Creek Nuclear Generating Station Emergency Response Organization Task Analysis," to the licensee's letter dated February 28, 2017, contains an analysis of all ERO positions being eliminated and evaluates the transfer of tasks to remaining positions following permanent cessation of power operations.

Because these proposed changes are the reassignment of functional and administrative responsibilities, and with the limited activities required for post-shutdown condition, the NRC staff concludes that the proposed level of TSC staffing remaining after elimination of TSC Core Thermal Engineer, TSC Director, TSC Mechanical and Electrical Engineers, and administrative positions, will continue to provide plant management and technical support to the operating personnel located in the control room for the level of support required for the remaining DBAs and for mitigative actions in response to an SFP accident.



Based on the NRC staff's review of the information in this section, the NRC staff finds that the proposed level of augmented TSC staffing, as described above, continues to meet the planning standards of 10 CFR 50.47(b)(1) to have the staff to respond to and augment its initial response, and the requirements of Section IV.A of Appendix E to 10 CFR Part 50 to describe the organization for coping with radiological emergencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition of the Oyster Creek facility. As such, the proposed changes in TSC staffing for the positions listed above for this functional area are acceptable and do not impact the ability of the ERO to perform the required functions.

**3.8.3 Emergency Operations Facility (EOF)**

The EOF has been designed to meet the intent of the guidance in NUREG-0696 and the clarification in NUREG-0737, Supplement No. 1, as applicable. The EOF for Oyster Creek is co-located with the JIC at 1268 Route 37 West, Toms River, New Jersey. The EOF is a near-site support facility for the management of overall licensee emergency response (including coordination with Federal, State, and local officials), coordination of radiological and environmental assessments, and determination of recommended public protective actions. The proposed changes to the Oyster Creek SEP do not involve any physical modifications to, or layout/configuration changes in, the EOF.

The Oyster Creek SEP identifies the Corporate ED, Logistics Manager, State/Local Communicator, Radiation Protection Manager, Dose Assessment Coordinator, HPN Communicator, Tech Support Manager, Field Team Communicator, EOF Director, and Field Monitoring Teams as required minimum staff positions.

The following tables illustrate the proposed changes to the EOF staffing in the post-shutdown emergency plan:

<b>Oyster Creek EOF Minimum Staff Positions</b>	
<b>Current Minimum Staff Positions</b>	<b>Proposed Minimum Staff Positions</b>
Corporate Emergency Director	Corporate Emergency Director
Logistics Manager	Logistics Manager
State/Local Communicator	State/Local Communicator
Radiation Protection Manager	Radiation Protection Manager
Dose Assessment Coordinator	Dose Assessment Coordinator
HPN Communicator	HPN Communicator
EOF Director	<b>Position Eliminated</b>
<b>(added as Minimum Staff)</b>	<b>Tech Support Manager</b>
<b>(added as Minimum Staff)</b>	<b>Field Team Communicator</b>
<b>(added as Minimum Staff)</b>	<b>Field Monitoring Teams (4 persons)</b>

<b>Oyster Creek EOF Augmented Staff Position Disposition</b>		
<b>Position</b>	<b>Response Time</b>	<b>Disposition</b>
Technical Support Manager	60 Min Augmentation	Assigned to Minimum Staff
Field Team Communicator	Full Augmentation	Assigned to Minimum Staff
Regulatory Liaison	60 Min Augmentation	<b>Position Eliminated</b>
Dose Assessor	60 Min Augmentation	<b>Position Eliminated</b>
ENS Communicator	Full Augmentation	<b>Position Eliminated</b>
Events Recorder	Full Augmentation	<b>Position Eliminated</b>
Operations Advisor	Full Augmentation	<b>Position Eliminated</b>
Technical Advisor	Full Augmentation	<b>Position Eliminated</b>
Administrative Coordinator	Full Augmentation	<b>Position Eliminated</b>

In Section 5.3.2 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

With the permanent cessation of operations and the permanent removal of the fuel from the reactor vessel at [Oyster Creek], most of the accident scenarios postulated for an operating power reactor are no longer possible. As such, the number and complexity of activities required for the safe storage of spent nuclear fuel is reduced, as compared to an operating plant. The set of plant equipment involved in this permanently defueled condition is also greatly reduced, which also reduces the spectrum of mitigation activities for an emergency.

Although ERO activation/response time requirements will be unchanged, the elimination of credible accidents involving an operating power reactor provides additional time to plan and execute assessment and mitigation actions. Oyster Creek procedures direct responding ERO, upon arrival, to assess conditions and obtain additional support as necessary.

The assessment and disposition of specific responsibilities and tasks for the EOF Director is addressed in Attachment 5 of this submittal. It is concluded that all the EOF Director's responsibilities and tasks can either be eliminated or re-assigned to other ERO positions. As such, the EOF Director position can be eliminated without impacting [Oyster Creek's] ability to respond to the spectrum of credible accidents and operational events for a permanently shutdown and defueled reactor.

In Section 5.3.3 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

Additionally, [Oyster Creek] will perform a drill to confirm the ability of the post-shutdown ERO [to] perform the necessary functions of each emergency response facility and to utilize the post-shutdown procedures being developed depicting the revised assignment of duties. The drill will involve a spent fuel pool event that tests the major elements of the licensee's emergency plan and communications/coordination with offsite response organizations, including the Joint Information Center. State and local response organizations will be offered the opportunity to participate, and the NRC and FEMA will be provided advance

notice and the opportunity to observe drill activities. The drill will demonstrate and validate the ability to accomplish the stated mission of each ERF, and to ensure that the planning standard functions are preserved with no degradation in time-sensitive activities or in the ability to communicate with off-site response organizations. The drill will also validate that the post-shutdown ERO continues to address the risks to the public health and safety in the [permanently defueled condition] and will comply with the [Oyster Creek] Emergency Plan, [as proposed,] site commitments and applicable regulation.

Because these proposed changes are the reassignment of functional and administrative responsibilities, and with the limited activities required for post-shutdown condition, the NRC staff concludes that the proposed level of EOF staffing will continue to provide management of overall licensee emergency response (including coordination with Federal, State, and local officials), coordination of radiological and environmental assessments, and determination of recommended public protective actions for the level of support required for the remaining DBA and for mitigative actions in response to an SFP accident.

Based on the NRC staff's review of the information in this section, the NRC staff finds that the proposed level of on-shift and augmented EOF staffing, as described above, continues to meet the planning standards of 10 CFR 50.47(b)(1) to have the staff to respond to and augment its initial response and the requirements of Section IV.A of Appendix E to 10 CFR Part 50 to describe the organization for coping with radiological emergencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition of the Oyster Creek facility. As such, the proposed changes in EOF staffing for the positions listed above for this functional area are acceptable and do not impact the ability of the ERO to perform the required functions.

#### 3.8.4 Joint Information Center (JIC)

Oyster Creek has a designated JIC, which is collocated with the EOF at 1268 Route 37 West, Toms River, New Jersey. The Oyster Creek JIC meets the intent of the guidance in Planning Standard G in Section II of NUREG-0654. The proposed changes to the Oyster Creek SEP do not involve any physical modifications to, or layout/configuration changes in, the JIC.

The following tables illustrate the proposed changes to the JIC staffing in the post-shutdown emergency plan:

<b>Oyster Creek JIC Minimum Staff Positions</b>	
<b>Current Minimum Staff Positions</b>	<b>Proposed Minimum Staff Positions</b>
JIC Director	JIC Director
News Writer	<b>Position Eliminated</b>
<b>(added as Minimum Staff)</b>	<b>Technical Spokesperson</b>
<b>(added as Minimum Staff)</b>	<b>Corporate Spokesperson</b>

<b>Oyster Creek JIC Augmented Staff Position Disposition</b>		
<b>Position</b>	<b>Response Time</b>	<b>Disposition</b>
Corporate Spokesperson	Full Augmentation	<b>Assigned to Minimum Staff</b>
Technical Spokesperson	Full Augmentation	<b>Assigned to Minimum Staff</b>
Public Information Director	Full Augmentation	<b>Position Eliminated</b>
Events Recorder	Full Augmentation	<b>Position Eliminated</b>
Access Controller	Full Augmentation	<b>Position Eliminated</b>
JIC Coordinator	Full Augmentation	<b>Position Eliminated</b>
Administrative Coordinator	Full Augmentation	<b>Position Eliminated</b>

The Technical Spokesperson and Corporate Spokesperson are being added to the Minimum Staff. These ERO positions will inherit duties from eliminated positions, but do not impact the ability of the ERF to perform its designated mission for the scope of remaining applicable accidents.

In Section 5.3.3 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

As discussed previously in Section 5.3.3.a, the present ERO staffing required by the implementing procedures is intended to address the risks to public health and safety inherent in an operating power reactor. The risk in the permanently shutdown and defueled condition is significantly reduced. Remaining ERO positions will inherit duties from eliminated positions, but do not impact the ability of the ERF, as a whole, to perform its designated mission for the scope of remaining applicable accidents. As such, elimination of the minimum staff News Writer position and the non-minimum staff positions of Public Information Director, Access Controller, JIC Coordinator, Administrative Coordinator, and Events Recorder positions do not impact the ability of the ERO to perform the required function based on the permanent shutdown and defueled condition of the facility.

As described in Section G, "Public Education and Information," of the proposed Oyster Creek SEP, the JIC is the facility in which media personnel gather to receive information related to the emergency event. The JIC is the location where approved news releases will be provided to the media for dissemination to the public. News releases are coordinated between the EOF and JIC personnel and State and/or Federal representatives in the JIC. Exelon public information personnel operate from the EOF and the JIC, which is under the direction of the Corporate Spokesperson and functions as the point contact to interface with Federal, State, and local authorities who are responsible for disseminating information to the public.

Because these proposed changes are the reassignment of functional and administrative responsibilities, and with the limited activities required for post-shutdown condition, the NRC staff concludes that the proposed level of staffing at the JIC will continue to disseminate information to the public for the level of support required for the remaining DBAs and for mitigative actions in response to an SFP accident.

Based on its review of the information in this section, the NRC staff finds that the proposed level of augmented JIC staffing, as described above, continues to meet the planning standards of

10 CFR 50.47(b)(1) to have the staff to respond to and augment its initial response and the requirements of Section IV.A of Appendix E to 10 CFR Part 50 to describe the organization for coping with radiological emergencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition of the Oyster Creek facility. As such, the proposed changes in JIC staffing for the positions listed above for this functional area are acceptable and do not impact the ability of the JIC to perform the required functions.

### 3.9 Potential Impact of Staff Changes on Off-site Emergency Response Organizational Interfaces

In Section 5.3.4 of Attachment 1 of the letter dated February 28, 2017, the licensee stated, in part, that:

The proposed changes to the [Oyster Creek] Emergency Plan were evaluated for impacts on the ability of State and local response organizations to effectively implement their FEMA-approved REP [Radiological Emergency Preparedness] plans.

As evaluated in Attachment 5, the ERO functions and tasks that support or involve direct interface with State and local officials have been retained or transferred to another ERO position.

[Oyster Creek] has addressed the elimination of these ERO positions that interface with off-site representatives by transferring such necessary tasks to remaining positions as evaluated in Attachment 5 of this submittal and summarized below.

- EOF Tech [Technical] Advisor – This position supports the State and local officials by supporting requests for information and clarification from the Technical Spokesperson or Federal/State representatives in the EOF. This activity is reassigned to the EOF Technical Support Manager.
- EOF Dose Assessor – This position supports the State and local officials by transmitting (fax, etc.) copies of dose assessment, PAR and designated State reports to the [New Jersey (NJ)] Emergency Operations Center, as applicable each dose projection run. This activity is reassigned to EOF Dose Assessment Coordinator. The Dose Assessment Coordinator is qualified to perform Dose Assessments and is currently a minimum staff position at Oyster Creek.
- EOF Regulatory Liaison – This position supports the State and local officials by ensuring that designated rooms and equipment for State Representatives are unlocked and accessible and notifies Facility Security (Access Controller) of their pending arrival. This activity is reassigned to the EOF Logistics Manager.
- EOF [Operations (Ops)] Advisor – This position supports the State and local officials by providing information to state emergency centers thru [Emergency News Center (ENC)]/JIC and regulator representatives in EOF. This task will be performed by EOF Corporate ED and the JIC Director.

- JIC Public Information Director – This position supports the State and local officials by: providing the draft press release only to the State Public Information Official (PIO) for final approval for the state if a “State of Emergency” has been declared in NJ, and coordinating with Federal, State and local agencies to maintain factual consistency of information to be conveyed to the news media/public. These tasks will be performed by the JIC Director.

In Section 5.3.4 of Attachment 1 of the letter dated February 28, 2017, the licensee further stated, in part, that:

The following list of additional actions involve support or direct interface with the State of New Jersey, are not revised and will continue to be performed by ERO positions as currently assigned and shown in Attachment 5 [“Oyster Creek Nuclear Generating Station Emergency Response Organization Task Analysis”]:

- Corporate Emergency Director – Following assumption of Command and Control, Ensure that Federal, state and local authorities and industry support agencies remain cognizant of the status of the emergency situation. If requested, dispatch informed individuals to offsite governmental Emergency Operation Centers (EOCs).
- EOF [Technical (Tech)] Support Manager – Assist the EOF Director with specific briefings for NRC, Federal Emergency Management Agency (FEMA) and State representatives present in the EOF; and periodic updates to Exelon Nuclear Liaisons dispatched to State and/or County EOCs.
- EOF Radiation Protection Manager – Ensure State authorities are provided information pertaining to Exelon Field Monitoring Team activities and sample results.
- EOF Dose Assessment Coordinator – Coordinate activities and information flow between the EOF Protective Measures Group and the affected state(s) environmental authorities, including periodic updates on meteorological conditions, Field Monitoring Team activities and survey/sample results.
- Dose Assessment Coordinator – Coordinate with the [Bureau of Nuclear Engineering (BNE)] to integrate activities and data collected between the State and Exelon Nuclear Field Monitoring Teams[.]
- Dose Assessment Coordinator – Assist EOF Radiation Protection Manager in interfacing with Health Physics and Environmental Assessment personnel from the NRC, State and other offsite agencies as needed[.]
- Logistics Manager – In support of the TSC Security Coordinator, Assist as a liaison for local, state and federal law enforcement agencies during security related events.

- JIC Corporate Spokesperson – Coordinate with Federal, state and local agencies, as well as with other organizations involved in the emergency response, to maintain factual consistency of information to be conveyed to the news media/public.
- JIC Director – Coordinate with Federal, state and local agencies, as well as with other organizations involved in the emergency response, to maintain factual consistency of information to be conveyed to the news media/public.
- JIC Director – Coordinate with the Corporate Spokesperson, Public Information Director, Federal, State and Local agencies, regarding the content, format and timing of press releases and news briefings.
- TSC Tech Manager – Act as the TSC liaison with State and appropriate NRC Site Team representatives.

The proposed ERO staffing changes do not impact the capabilities of the on-shift staffing or augmented response. The ERFs will continue to be activated at an Alert or higher declaration (or an Unusual Event for some Security Events). The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the Emergency Plan, site commitments and regulation.

Meetings were held with the NJSP Office of Emergency Management and the NJ Department of Environmental Protection (DEP) Bureau of Nuclear Engineering (BNE) to discuss the proposed changes to the [Oyster Creek] emergency plan. The meetings were held on June 13, 2016 and August 22, 2016, at the DEP BNE Office in Ewing, NJ. Specifically, the reviews were to identify any potential impact on the State's Radiological Emergency Response Plan (RERP).

Subsequent to the meeting, a copy of the proposed License Amendment Request was provided to both the NJSP Office of Emergency Management and the New Jersey Department of Environmental Protection (DEP) Bureau of Nuclear Engineering and Lacey Township. A follow-up meeting, attended by the DEP and BNE was held on January 17, 2017 to further discuss the License Amendment Request. Comments from the State of New Jersey were received on January 24, 2017. Exelon responded to those comments on February 10, 2017. The State of New Jersey acknowledged Exelon's response in a letter dated [February] 24, 2017. The comments and the correspondence between Exelon and the State of New Jersey are contained in Attachment 7.

A review has been performed of the NJ RERP by Exelon staff. Exelon also concluded there were no interface or coordination impediments identified as a result of the change to the [Oyster Creek] Emergency Plan.

Attachment 5, "Emergency Response Organization Task Analysis," of the licensee's letter dated February 28, 2017, contains an analysis of all ERO positions being eliminated and evaluates the transfer of tasks to remaining ERO positions following permanent cessation of power operations. The discussion also addresses the potential impacts the proposed changes to the Oyster Creek have on the EOF and the JIC and the potential impacts on the ability of the offsite response organizations to implement their FEMA-approved REP plans.

By letter dated March 24, 2017 (Reference 12), the NRC staff requested FEMA's review of the proposed licensee staffing changes against the current FEMA-approved State and local REP plans to verify that no potential adverse impacts exist that would preclude the effective implementation of State and local REP plans. In a letter dated May 23, 2017 (Reference 13), FEMA responded that the FEMA REP staff reviewed the licensee's proposed staffing changes to the Oyster Creek EOF and JIC against the current FEMA-approved State of New Jersey and Ocean County REP plans and confirmed that no adverse impacts exist that would preclude the effective implementation of State and local REP plans or impact FEMA's finding of reasonable assurance for Oyster Creek.

Based on the NRC staff's review of the information addressed above, and evaluation by FEMA of potential, unintended impacts on offsite ERO Interface REP plans, the NRC staff finds that the proposed changes to the Oyster Creek SEP staffing are acceptable and continue to meet the planning standards of 10 CFR 50.47(b)(1) to have the staff to respond to and augment its initial response and the requirement of Section IV.A of Appendix E to 10 CFR Part 50 to describe the organization for coping with radiological emergencies, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition at the Oyster Creek facility.

### 3.10 Summary

Based on the evaluation above, the NRC staff finds that the proposed emergency plan changes meet the planning standards in 10 CFR 50.47(b)(1) and (2), and the requirements in Sections IV.A and IV.D of Appendix E to 10 CFR Part 50, and provide reasonable assurance that adequate protective measures can and will continue to be taken in the event of a radiological emergency, commensurate with the reduced spectrum of credible accidents in the permanently shutdown and defueled condition.

## 4.0 REGULATORY COMMITMENTS

In its letter dated September 20, 2017, the licensee made the following regulatory commitments that are still open:

### Commitment 1

[Oyster Creek] will revise applicable fuel handling procedures to require that a Chemistry Technician be on-site or the radiation monitor listed in the Abnormal Rad Levels/Radiological Effluents EALs is in service as a prerequisite to handling or moving spent fuel.

### Commitment 2

[Oyster Creek] will perform a drill to confirm the ability of the post-shutdown ERO to perform the necessary functions of each emergency response facility and to utilize the post-shutdown procedures being developed depicting the revised assignment of duties. State and local response organizations will be offered the opportunity to participate, and the NRC and FEMA will be provided advance notice and the opportunity to observe drill activities. In addition, other training drills will be conducted to train post-shutdown station ERO members.



### Commitment 3

[Oyster Creek] will either qualify additional station personnel to perform liquid sampling and analysis at various locations throughout the plant or maintain a Chemistry Technician on shift.

These commitments have a commitment date of "Prior to implementation of the Post-Shutdown Emergency Plan."

The NRC staff concludes that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the above regulatory commitments are best provided by the licensee's administrative processes, including its commitment management program. The above regulatory commitments do not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes).

### 5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendment on October 23, 2017. The State official had no comments.

### 6.0 ENVIRONMENTAL CONSIDERATION

The amendment relates to changes in recordkeeping, reporting, or administrative procedures or requirements. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (82 FR 19103; April 25, 2017). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

### 7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

### 8.0 REFERENCES

1. Jury, Keith R., Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "Permanent Cessation of Operations at Oyster Creek Nuclear Generating Station," dated January 7, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML110070507).
2. Gallagher, Michael P., Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "Certification of Permanent Cessation of Power Operations for Oyster Creek Nuclear Generating Station," dated February 14, 2018 (ADAMS Accession No. ML18045A084).

3. Gallagher, Michael P., Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "License Amendment Request - Proposed Changes to the Oyster Creek Emergency Plan for Permanently Defueled Condition," dated February 28, 2017 (ADAMS Accession No. ML17060A289).
4. Gallagher, Michael P., Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information (RAI) and Supplemental Information Regarding License Amendment Request – Proposed Changes to the Oyster Creek Emergency Plan for Permanently Defueled Condition," dated September 20, 2017 (ADAMS Accession No. ML17263A066).
5. Gallagher, Michael P., Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information (RAI) and Supplemental Information Regarding License Amendment Request – Proposed Changes to the Oyster Creek Emergency Plan for Permanently Defueled Condition," dated November 10, 2017 (ADAMS Accession No. ML17317A328).
6. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," October 1981 (ADAMS Accession No. ML090440294).
7. U.S. Nuclear Regulatory Commission/Federal Emergency Management Agency, NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980 (ADAMS Accession No. ML040420012).
8. U.S. Nuclear Regulatory Commission, NSIR/DPR-ISG-01, "Interim Staff Guidance – Emergency Planning for Nuclear Power Plants," dated November 2011 (ADAMS Accession No. ML113010523).
9. Nuclear Energy Institute (NEI), topical report NEI 10-05, Revision 0, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," June 2011 (ADAMS Accession No. ML111751698).
10. U.S. Nuclear Regulatory Commission, NUREG-0696, "Functional Criteria for Emergency Response Facilities," February 1981 (ADAMS Accession No. ML051390358).
11. U.S. Nuclear Regulatory Commission, NUREG-0737, Supplement No. 1, "Clarification of TMI Action Plan Requirements - Requirements for Emergency Response Capability," January 1983 (ADAMS Accession No. ML102560009).
12. Anderson, Joseph D., U.S. Nuclear Regulatory Commission, letter to Vanessa Quinn, Federal Emergency Management Agency, "License Amendment Request – Proposed Changes to the Oyster Creek Nuclear Generating Station Emergency Plan for Permanently Defueled Condition," dated March 24, 2017 (ADAMS Accession No. ML17081A290).

13. Quinn, Vanessa E., Federal Emergency Management Agency, letter to Joseph Anderson, U.S. Nuclear Regulatory Commission, "License Amendment Request – Proposed Changes to the Oyster Creek Nuclear Generating Station Emergency Plan for Permanently Defueled Condition," dated May 23, 2017 (ADAMS Accession No. ML17145A389).

Principal Contributor: J. Arce

Date: March 7, 2018

SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION - ISSUANCE OF AMENDMENT RE: CHANGES TO THE EMERGENCY PLAN FOR PERMANENTLY DEFUELED CONDITION (CAC NO. MF9352; EPID L-2017-LLA-0177) DATED MARCH 7, 2018

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**\*via memo**

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DATE	2/26/18	3/6/18	3/7/18

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