



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
2100 RENAISSANCE BLVD., SUITE 100  
KING OF PRUSSIA, PA 19406-2713

November 13, 2014

Mr. Michael J. Pacilio  
Chief Nuclear Officer and Senior Vice President  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

**SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION - NRC INTEGRATED  
INSPECTION REPORT 05000219/2014004**

Dear Mr. Pacilio:

On September 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Oyster Creek Nuclear Generating Station. The enclosed inspection report documents the inspection results, which were discussed on October 22, 2014, with Mr. G. Stathes, Site Vice President, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one violation of NRC requirements, which was of very low safety significance (Green). However, because of the very low safety significance, and because it was entered into your corrective action program, the NRC is treating this finding as a non-cited violation, consistent with Section 2.3.2.a of the NRC Enforcement Policy. If you contest the non-cited violation in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Oyster Creek Nuclear Generating Station. In addition, if you disagree with the cross-cutting aspect assigned to this finding, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspector at Oyster Creek Nuclear Generating Station.

In accordance with Title 10 of the *Code of Federal Regulations* (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Silas R. Kennedy, Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

Docket No. 50-219  
License No. DPR-16

Enclosure: Inspection Report 05000219/2014004  
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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Silas R. Kennedy, Chief  
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Enclosure: Inspection Report 05000219/2014004  
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**U.S. NUCLEAR REGULATORY COMMISSION**

## REGION I

Docket No. 50-219

License No. DPR-16

Report No. 05000219/2014004

Licensee: Exelon Nuclear (Exelon)

Facility: Oyster Creek Nuclear Generating Station

Location: Forked River, New Jersey

Dates: July 1, 2014 through September 30, 2014

Inspectors: J. Kulp, Senior Resident Inspector  
A. Patel, Resident Inspector  
P. Kaufman, Senior Reactor Inspector  
S. Pindale, Senior Reactor Inspector  
S. Barr, Senior Emergency Preparedness Inspector  
E. Burket, Emergency Preparedness Inspector  
B. Dionne, Health Physicist  
A. Dugandzic, Project Engineer

Approved By: Silas R. Kennedy, Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

Enclosure

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## SUMMARY

IR 05000219/2014004; 07/01/2014 – 09/30/2014; Oyster Creek Nuclear Generating Station (Oyster Creek); Maintaining Emergency Preparedness.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Inspectors identified one finding of very low safety significance (Green), which was a non-cited violation (NCV). The significance of most findings is indicated by their color (i.e. greater than Green, or Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP), dated June 19, 2012. Cross-cutting aspects are determined using IMC 0310, "Aspects Within Cross-Cutting Areas," dated December 19, 2013. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

### Cornerstone: Emergency Preparedness

- Green. The inspectors identified an NCV of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(q)(2), 10 CFR 50.47(b)(10), and 10 CFR Part 50, Appendix E, Section IV.4, for failing to maintain the effectiveness of the Oyster Creek emergency plan as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date. Exelon entered this issue into its corrective action program as issue reports 1525923 and 1578649. Additionally, Exelon re-submitted a new revision of the Oyster Creek ETE to the NRC on April 4, 2014, and the NRC's review of that ETE is documented in Section 1EP4 of this report.

The performance deficiency is more than minor because it is associated with the Emergency Preparedness cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The ETE is an input into the development of protective action strategies prior to an accident and to the protective action recommendation decision making process during an accident. Inadequate ETEs have the potential to reduce the effectiveness of public protective actions implemented by the OROs. The finding is determined to be of very low safety significance (Green) because it is a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The cause of the finding is related to a cross-cutting aspect of Human Performance, Documentation, because Exelon did not appropriately create and maintain complete, accurate, and up-to-date documentation [H.7]. (Section 1EP5)

## REPORT DETAILS

### Summary of Plant Status

Oyster Creek began the inspection period at 100 percent power. On July 7, 2014, operators commenced a reactor shutdown and entered a forced outage (1F34) to conduct an inspection of the installed electromagnetic relief valve solenoids. On July 10, 2014, operators commenced a reactor startup following completion of the electromagnetic relief valve solenoid inspections. On July 11, 2014, operators manually scrammed the reactor due to a loss of condenser vacuum and entered a forced outage (1F35) to conduct repairs. Following completion of repairs, operators commenced a reactor startup on July 14, 2014, and achieved full power on July 16, 2014. On July 16, 2014, operators performed a downpower to 75 percent power to conduct a rod for flow swap and returned to full power later the same day. On August 5, 2014, operators performed a downpower to 70 percent power to conduct a control rod pattern adjustment and returned to full power on August 6, 2014. On August 22, 2014, operators performed a downpower to 70 percent power to conduct a control rod pattern adjustment and returned to full power on August 23, 2014. On September 3, 2014, operators performed a downpower to 90 percent power to conduct core spray system surveillances and returned to full power on September 4, 2014. On September 9, 2014, operators performed a downpower to 90 percent power to conduct core spray system surveillances and returned to full power on September 10, 2014. Operators commenced a plant shutdown on September 14, 2014, took the generator offline, and entered the 1R25 refueling outage on September 15, 2014. Oyster Creek remained shutdown and in 1R25 through the remainder of the inspection period.

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R04 Equipment Alignment

#### .1 Partial System Walkdowns (71111.04Q – 4 samples)

##### a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- Emergency diesel generator No. 1 while emergency diesel generator No. 2 out of service on July 28, 2014
- Emergency diesel generator No. 2 while emergency diesel generator No. 1 out of service on August 4, 2014
- Emergency diesel generator No. 1 while emergency diesel generator No. 2 out of service on August 25, 2014
- Core spray system II while shutdown cooling system inservice for refueling outage (1R25) on September 17, 2014

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the updated final safety analysis report (UFSAR), technical specifications, work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions

that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Exelon staff had properly identified equipment issues and entered them into the corrective action program for resolution with the appropriate significance characterization. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Full System Walkdown (71111.04S – 1 sample)

a. Inspection Scope

On September 23 and 24, 2014, the inspectors performed a complete system walkdown of accessible portions of the emergency service water system to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, surveillance tests, drawings, equipment line-up check-off lists, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors also reviewed electrical power availability, component lubrication and equipment cooling, hangar and support functionality, and operability of support systems. The inspectors performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related condition reports and work orders to ensure Exelon appropriately evaluated and resolved any deficiencies.

b. Findings

No findings were identified.

1R05 Fire Protection

Resident Inspector Quarterly Walkdowns (71111.05Q – 3 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Exelon controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.



- Reactor building 23' elevation on August 12, 2014
- Reactor building 51' elevation on August 12, 2014
- Reactor building 75' elevation on August 12, 2014

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

Annual Review of Cables Located in Underground Bunkers/Manholes

a. Inspection Scope

The inspectors conducted an inspection of underground bunkers/manholes subject to flooding that contain cables whose failure could disable risk-significant equipment. The inspectors performed visual observations of risk-significant areas with assistance from a camera, including the SBO3 (MH-743-3) and SBO4 (MH-743-4), containing 13.8kV cables from the combustion turbine, and to verify that the cables were not submerged in water, that cables and/or splices appeared intact, and to observe the condition of cable support structures. An additional manhole sample included was the start-up transformer A&B (MH-724-1), containing 34.5kV cables from the start-up transformers. The inspectors also ensured that drainage was provided and functioning properly in areas where dewatering devices were not installed. The inspectors also verified that Exelon took action to keep the cables dry and assess cable degradation in accordance with Exelon's aging management program for inaccessible power cables.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A – 1 sample)

a. Inspection Scope

The inspectors reviewed the containment spray system I heat exchangers to determine their readiness and availability to perform their safety function. The inspectors reviewed the design basis for the components and verified Exelon's commitments to NRC Generic Letter 89-13. The inspectors reviewed the results of previous inspections of the containment spray system 1 heat exchangers. The inspectors discussed the results of the most recent inspection with engineering staff including the as-found and as-left conditions. The inspectors verified that Exelon initiated appropriate corrective actions for identified deficiencies. The inspectors also verified that the number of tubes plugged within the heat exchanger did not exceed the maximum number allowed.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification ProgramQuarterly Review of Licensed Operator Performance in the Main Control Room  
(71111.11 – 2 samples)a. Inspection Scope

The inspectors observed licensed operator performance during a plant startup from a forced outage (1F35) on July 14, 2014. The inspectors also observed licensed operator performance response during an unplanned low instrument air pressure condition on August 6, 2014. The inspectors observed infrequently performed test or evolution briefings that were performed and met the requirements of Exelon procedure HU-AA-1211, "Pre-Job Briefings," Revision 9. Additionally, the inspectors observed control room operator performance to verify that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12 – 2 samples)a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, or component performance and reliability. The inspectors reviewed system health reports, corrective action program documents, maintenance work orders, and maintenance rule basis documents to ensure that Exelon was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the structure, system or component was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by Exelon staff was reasonable. As applicable, for a structure, system, or component classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return the structure, system or component to (a)(2). Additionally, the inspectors ensured that Exelon staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Forked River combustion turbine No. 2 on August 14, 2014
- Electromatic relief valves on September 22, 2014

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Exelon performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Exelon personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Exelon performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with Exelon's risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Emergency diesel generator No. 2 out of service on July 28, 2014
- Emergency diesel generator No. 1 and containment spray system I out of service on August 4, 2014
- Emergency diesel generator No. 2 out of service on August 25, 2014
- Core spray system I out of service on September 4, 2014
- Refueling outage yellow shutdown risk due to decay heat removal on September 16, 2014

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 5 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- Electromatic relief valve solenoids degraded condition on September 17, 2014
- Emergency diesel generator No. 1 due to common cause evaluation for the emergency diesel generator No. 2 cooling fan shaft failure on July 28, 2014
- Emergency diesel generator No. 2 governor with low oil level on August 4, 2014
- Emergency diesel generator No. 2 following engine overspeed trip on August 25, 2014
- Emergency diesel generator No. 2 following water found in lube oil system on August 28, 2014

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether technical specification operability was properly justified and the subject component or system remained available such that no

unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to Exelon's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Exelon. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 2 samples)

Permanent Modifications

a. Inspection Scope

The inspectors evaluated a modification to change the material of electromatic relief valve solenoid internal components. The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the material change, including replacement of electromatic relief valve solenoid actuator internal components. The inspectors also reviewed revisions to the purchase orders to ensure the materials were changed.

The inspectors also evaluated a modification of the design of the electromatic relief valve solenoid actuators. The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the design change, including replacement of electromatic relief valve solenoid actuators and relocation of vibration susceptible internal components of the actuators. The inspectors also reviewed revisions to the maintenance refurbishment procedure and interviewed engineering and maintenance personnel to ensure the procedure could be reasonably performed.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also

witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- Electromatic relief valves following electromatic relief valve solenoid refurbishment on July 10, 2014
- Emergency diesel generator No. 2 following cooling fan shaft replacement on July 30, 2014
- Emergency diesel generator No. 1 following cooling fan shaft inspections on August 4, 2014
- Emergency diesel generator following crankcase pressure detector replacement on August 28, 2014
- V-31-5, reactor head cooling inlet valve, replacement on September 23, 2014
- Electromatic relief valves replacement following electromatic relief valve solenoid actuator internal components design change on September 30, 2014

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 2 samples)

a. Inspection Scope

The inspectors reviewed the station's work schedule and outage risk plan for the Oyster Creek forced outage 1F34, on July 7, 2014. On July 10, 2014, Oyster Creek commenced startup and subsequently manually scrambled the reactor on July 11, 2014, due to low vacuum conditions in the condenser.

The inspectors also reviewed the station's work schedule and outage risk plan for the Oyster Creek forced outage 1F35 on July 11, 2014, following a manual scram in response to a low condenser vacuum condition. On July 14, 2014, Oyster Creek commenced startup and returned to full power on July 16, 2014.

The inspectors also reviewed the station's work schedule and outage risk plan for the Oyster Creek maintenance and refueling outage (1R25), which started on September 15, 2014, and ongoing at the end of the inspection period. The completion of this sample will be documented in the 4<sup>th</sup> quarter integrated inspection report.

The inspectors reviewed Exelon's development and implementation of outage plans and schedules to verify that risk, industry experience, previous site-specific problems, and defense-in-depth were considered. During the outage, the inspectors observed portions of the shutdown and cooldown processes and monitored controls associated with the following outage activities:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable technical specifications when taking equipment out of service
- Implementation of clearance activities and confirmation that tags were properly hung and that equipment was appropriately configured to safely support the associated work or testing

- Status and configuration of electrical systems and switchyard activities to ensure that technical specifications were met
- Monitoring of decay heat removal operations
- Impact of outage work on the ability of the operators to operate the spent fuel pool cooling system
- Reactor water inventory controls, including flow paths, configurations, alternative means for inventory additions, and controls to prevent inventory loss
- Activities that could affect reactivity
- Maintenance of secondary containment as required by technical specifications
- Refueling activities, including fuel handling and fuel receipt inspections
- Identification and resolution of problems related to refueling outage activities

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 4 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant structures, systems, and components to assess whether test results satisfied technical specifications, the UFSAR, and Exelon procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- Unidentified reactor coolant system (RCS) leak rate verification on August 1, 2014
- Core spray system I valve operability and in-service test on September 9, 2014
- Core spray system I pump operability and in-service test on September 10, 2014
- V-31-5, reactor head cooling inlet valve, local leak rate test on September 20, 2014

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**

1EP2 Alert and Notification System Evaluation (71114.02 - 1 sample)

a. Inspection Scope

An onsite review was conducted to assess the maintenance and testing of the alert and notification system (ANS). During this inspection, the inspectors conducted a review of the ANS testing and maintenance programs. The inspectors reviewed the associated ANS procedures and the Federal Emergency Management Agency approved ANS

Design Report to ensure compliance with design report commitments for system maintenance and testing. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 2. 10 CFR 50.47(b)(5) and the related requirements of 10 CFR Part 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System  
(71114.03 - 1 sample)

a. Inspection Scope

The inspectors conducted a review of the Oyster Creek Emergency Response Organization (ERO) augmentation staffing requirements and the process for notifying and augmenting the ERO. The review was performed to verify the readiness of key Exelon staff to respond to an emergency event and to verify Exelon's ability to activate their emergency response facilities (ERF) in a timely manner. The inspectors reviewed the Oyster Creek Emergency Plan for ERF activation and ERO staffing requirements, the ERO duty roster, applicable station procedures, augmentation test reports, the most recent drive-in drill reports, and corrective action reports related to this inspection area. The inspectors also reviewed a sample of ERO responder training records to verify training and qualifications were up to date. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 3. 10 CFR 50.47(b) (2) and related requirements of 10 CFR Part 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04 – 1 sample)

a. Inspection Scope

Staff from the Office of Nuclear Security and Incident Response (NSIR) performed an in-office review of the latest revision to the ETE Analysis for Oyster Creek located under ADAMS accession number ML14101A164, as listed in the Attachment.

The staff performed a review using the guidance provided in NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies." The Updated ETE was found to be complete in accordance with 10 CFR Part 50, Appendix E.IV.3. The NRC review was only intended to verify consistent application of the ETE guidance contained in NUREG/CR-7002; and therefore remains subject to future NRC inspection in its entirety.

b. Findings

No findings were identified.

1EP5 Maintaining Emergency Preparedness (71114.05 – 1 sample)

a. Inspection Scope

The inspectors reviewed a number of activities to evaluate the efficacy of Exelon's efforts to maintain the Oyster Creek emergency preparedness (EP) program. The inspectors reviewed: memorandums of agreement with offsite agencies; the 10 CFR 50.54(q) Emergency Plan change process and practice; Oyster Creek's maintenance of equipment important to EP; records of ETE population evaluation; and provisions for, and implementation of, primary, backup, and alternate ERF maintenance. The inspectors also verified Exelon's compliance at Oyster Creek with new NRC EP regulations regarding: emergency action levels for hostile action events; protective actions for on-site personnel during events; emergency declaration timeliness; ERO augmentation and alternate facility capability; ETE updates; on-shift ERO staffing analysis; and ANS back-up means.

Additionally, NRC EP rulemaking, which became effective on December 23, 2011, added a new regulation which required licensees to develop an ETE analysis and submit it to the NRC by December 23, 2012. This inspection included a follow-up of issues identified by the NSIR staff during its review of the Exelon submittal of the ETEs for the ten sites that it operated at the time. The NSIR staff related those issues to Exelon, which provided responses through 2013 and into 2014. During this inspection period, regional EP inspectors reviewed applicable Exelon documents, conducted discussions with Exelon personnel, and provided assessment of the Exelon response.

The inspectors further evaluated Exelon's ability to maintain Oyster Creek's EP program through their identification and correction of EP weaknesses, and by reviewing a sample of drill reports, actual event reports, self-assessments, and 10 CFR 50.54(t) reviews. Also, the inspectors reviewed a sample of EP-related condition reports initiated at Oyster Creek from October 2012 through September 2014. The inspection was conducted in accordance with NRC Inspection Procedure 71114.05. 10 CFR 50.47(b) and the related requirements of 10 CFR Part 50, Appendix E, were used as reference criteria.

b. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR 50.54(q)(2) for failing to maintain the effectiveness of the Oyster Creek emergency plan. Specifically, Exelon failed to provide the station ETE to responsible OROs and failed to update its site-specific protective action strategies as outlined in the requirements listed in 10 CFR 50.47(b)(10), and Section IV, Paragraph 4, of Appendix E to 10 CFR Part 50.

Description: On November 23, 2011, the NRC issued final new and amended EP regulations (76 *Federal Register* 72560) that required all licensees to update the ETE on a periodic basis. This rulemaking became effective on December 23, 2011. The rulemaking also added a new regulation, 10 CFR Part 50, Appendix E, Section IV.4, which required licensees to develop an ETE analysis using the most recent decennial census data and submit it to the NRC within 365 days of December 23, 2011.



Concurrently, with the issuance of the rulemaking, the NRC published a new report entitled "Criteria for Development of Evacuation Time Estimate Studies," NUREG/CR-7002. The Statements of Consideration for the rulemaking (76 *Federal Register* 72580) identified that the NRC staff would review the submitted ETEs for completeness using that document. The Statements also provided that the guidance of NUREG/CR-2002 was an acceptable template to meet the requirements and licensees should use the guidance or an appropriate alternative.

By individual letters dated December 12, 2012, Exelon submitted the ETEs for the sites for which it held the operating licenses, including Oyster Creek. By letter dated January 23, 2013, Exelon submitted the NUREG/CR-7002 checklists for the ETEs that identified where a particular criterion was addressed in the ETEs, facilitating the NRC review.

As provided in the Statements of Consideration, the NRC staff performed a completeness review using the checklists and found the ETEs (including the ETEs for Oyster Creek) to be incomplete due to common and site-specific deficiencies. The staff discussed its concerns regarding the completeness of the ETEs, in a teleconference with Exelon conducted on June 10, 2013. On September 5, 2013, Exelon resubmitted the ETEs and the associated checklists for its sites. The NRC staff performed another completeness review and again found the ETEs to be incomplete. Examples of information missing from the submittal included: peak and average attendance were not stated (NUREG/CR-7002 Criteria Item 2.1.2.a); the ETE used a value based on campsite and hotel capacity, vice an average value (2.1.2.b); basis for speed and capacity reduction factors due to weather was not provided (3.4.b); snow removal was not addressed (3.4.c); no bus routes or plans were included in the ETE analysis (4.1.2.a); and no discussion on the means of evacuating ambulatory and non-ambulatory residents was included (4.1.2.b). The staff communicated the various ETE issues to Exelon through several telephone conference calls. Upon identification, Exelon entered this issue into its corrective action program as issue reports 1525923 and 1578649. Exelon submitted a third ETE for Oyster Creek on April 4, 2014, and the NRC's review of that ETE is documented in Section 1EP4 of this report.

Analysis: The inspectors determined that the failure to submit a complete updated ETE for Oyster Creek by December 23, 2012, is a performance deficiency because Exelon failed to meet a regulatory requirement that was reasonably within its ability to foresee and correct, and should have been prevented, for both the December 12, 2012, and September 5, 2013, submittals.

Using IMC 0612, Appendix B, "Issue Screening," the inspectors determined that the performance deficiency is associated with the Emergency Preparedness cornerstone attribute of procedure quality and is more than minor because it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The ETE is an input into the development of protective action strategies prior to an accident and to the protective action recommendation decision making process during an accident. Inadequate ETEs had the potential to reduce the effectiveness of public protective actions implemented by the OROs.

The inspectors utilized IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process (SDP)," to determine the significance of the performance deficiency. The performance deficiency was associated with planning standard 10 CFR 50.47(b)(10). EP SDP Table 5.10-1, "Significance Examples §50.47(b)(10)," provides two Green significance examples: "ETEs and updates to the ETEs were not provided to responsible OROs," and "The current public protective action strategies documented in emergency preparedness implementing procedures (EPIPs) are not consistent with the current ETE." The inspectors concluded that, because the performance deficiency delayed the NRC's approval of the Oyster Creek ETE, the ETE was not provided to the site OROs nor was it used to inform the site EPIPs as required by 10 CFR 50.47(b)(10), and Section IV, Paragraph 4 of Appendix E to 10 CFR Part 50. Therefore, in accordance with EP SDP Table 5.10-1, this was determined to be a finding of very low safety significance (Green).

The cause of the finding had a cross-cutting aspect in the area of Human Performance, Documentation, because Exelon personnel did not create and maintain complete, accurate and, up-to-date documentation. Specifically, the EP organization did not develop the Oyster Creek ETE as required by the new regulation introduced by the NRC's EP Rule [H.7].

Enforcement: 10 CFR 50.54(q)(2) states, in part, that a licensee "shall follow and maintain in effective emergency plans which meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E to this part." 10 CFR 50.47(b)(10), states, in part, that licensees shall develop an evacuation time estimate and update it on a periodic basis. 10 CFR Part 50 Appendix E, Section IV.4, states that within 365 days of December 23, 2011, nuclear power reactor licensees shall develop an ETE analysis and submit it under § 50.4.

Contrary to the above, the ETEs submitted by Exelon on December 12, 2012, and on September 5, 2013, for Oyster Creek were found to be inadequate. Upon identification, Exelon implemented immediate corrective actions by entering this issue into its corrective action program as issue reports 1525923 and 1578649, and revising the ETE to satisfy NRC requirements. Because this finding is of very low safety significance (Green) and was entered into Exelon's corrective action program, this issue is being treated as an NCV consistent with Section 2.3.2.a of the Enforcement Policy. **(NCV 05000219/2014004-01: Inadequate Evacuation Time Estimate Submittals)**

## 2. RADIATION SAFETY

### Cornerstone: Occupational Radiation Safety

#### 2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01 – 1 sample)

##### a. Inspection Scope

During the period of August 11-14, 2014, and September 22-26, 2014, the inspectors reviewed Exelon performance in assessing the radiological hazards and exposure control in the workplace. The inspectors used the requirements in 10 CFR Part 20 and guidance in Regulatory Guide (RG) 8.38, "Control of Access to High and Very High Radiation Areas for Nuclear Plants," technical specifications, and the Exelon procedures required by technical specifications as criteria for determining compliance.

### Inspection Planning

The inspectors reviewed 2013 and 2014 performance indicators for the occupational exposure cornerstone for Oyster Creek. The inspectors reviewed the results of radiological protection (RP) program audits. The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection.

### Radiological Hazard Assessment

The inspectors reviewed changes to plant operations since the last inspection that represent a significant new radiological hazard for onsite workers or members of the public. The inspectors evaluated whether Exelon assessed the potential impact and has implemented appropriate controls.

The inspectors reviewed the following documents:

- Radiological surveys associated with the following radiation work permits (RWPs):
  - RWP OC 14-01700 Torus Vacuum Breaker Surveillance;
  - RWP 14-00406, 1R25 Refueling Floor Activities;
  - RWP 14-00508, 1R25 Drywell Scaffolding;
  - RWP 14-00511, 1R25 Drywell Control Rod Drive (CRD) Exchange Activities and Support;
  - RWP 14-00519, 1R25 Drywell In-service Inspection (ISI), Intergranular Stress Corrosion Cracking (IGSCC), Flow-Accelerated Corrosion (FAC) Inspection.
- Drywell air sample locations and the use of continuous air monitors
- Loose contamination monitoring
- Radiological surveys from the Torus and Spent Fuel Pool heat exchangers

### Instructions to Workers

The inspectors selected five radioactive material containers and assessed whether the containers were labeled and controlled in accordance with 10 CFR Part 20 requirements. The inspectors reviewed RWPs used to access high radiation areas (HRA) and evaluated if the specified work control instructions and control barriers were consistent with technical specification requirements for HRA.

### Contamination and Radioactive Material Control

The inspectors observed five locations where Exelon monitors potentially contaminated material leaving the radiological control area and inspected the methods used for control, survey, and release of these materials from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures. The inspectors assessed whether the radiation monitoring instrumentation used for equipment release and personnel contamination surveys had appropriate sensitivity for the type(s) of radiation present.

The inspectors evaluated whether any recent transactions involving nationally tracked sources were reported in accordance with 10 CFR Part 20 requirements.

### Radiological Hazards Control and Work Coverage

The inspectors evaluated ambient radiological conditions and performed independent radiation measurements during walk-downs of the facility. The inspectors assessed whether the conditions were consistent with applicable posted surveys, RWPs, and associated worker briefings.

The inspectors examined Exelon physical and programmatic controls for highly activated and contaminated materials stored within the spent fuel. The inspectors assessed whether appropriate controls were in place to preclude inadvertent removal of these materials from the pool.

The inspectors examined the posting and physical controls for selected HRAs and Locked High Radiation Areas (LHRAs) to verify conformance with the occupational performance indicator.

The inspector evaluated the radiological controls, exposure monitoring, and radiation protection job coverage for the RWPs listed above.

### Risk-Significant HRAs and LHRAs Controls

The inspectors discussed with the Radiation Protection Manager the controls and procedures for high-risk HRAs and LHRAs. The inspectors discussed with first-line health physics supervisors the controls in place for areas that have the potential to become LHRAs during certain plant operations. The inspectors assessed whether plant operations required communication beforehand with the health physics group, so as to allow timely actions to post, control, and monitor the radiation hazards.

### Radiation Worker Performance

The inspectors observed the performance of radiation workers with respect to stated RP work requirements. The inspectors assessed whether workers were aware of the radiological conditions in their workplace and the RWP controls/limits in place, and whether their behavior reflected the level of radiological hazards present. The inspector reviewed radiological problem reports since the last inspection that attributed the cause of the event to human performance errors.

### RP Technician Proficiency

The inspectors observed the performance of the RP technicians with respect to controlling radiation work. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace and the RWP controls/limits, and whether their behavior was consistent with their training and qualifications with respect to the radiological hazards and work activities.

#### b. Findings

No findings were identified.

## 2RS2 Occupational ALARA Planning and Controls (71124.02 – 1 sample)

The inspectors assessed performance with respect to maintaining occupational individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspectors used the requirements in 10 CFR Part 20, RG 8.8, RG 8.10, technical specifications, and Exelon procedures required by technical specifications as criteria for determining compliance.

### a. Inspection Scope

The inspectors reviewed information regarding Oyster Creek collective dose history, current exposure trends, ongoing and planned activities in order to assess current performance and exposure challenges. The inspectors reviewed the plant's three year rolling average collective exposure. The inspectors compared the site-specific trends in collective exposures against the industry average values and those values from similar vintage reactors. In addition, the inspectors reviewed any changes in the radioactive source term by reviewing the trend in average contact dose rate with recirculation piping. The inspectors reviewed site-specific procedures associated with maintaining occupational exposures ALARA, which included a review of processes used to estimate and track exposures from specific work activities.

The inspectors reviewed the ALARA work activity evaluations, exposure estimates, and exposure reduction requirements. The inspectors assessed whether Exelon planning identified appropriate dose reduction techniques; considered alternate dose reduction features; and estimated reasonable dose goals. The inspectors determined whether Exelon work planning considered the use of remote technologies as a means to reduce dose and the use of dose reduction insights from industry operating experience and plant-specific lessons learned. The inspectors assessed the integration of ALARA requirements into work procedure and RWP documents.

The inspectors reviewed the assumptions and basis for the current annual collective dose estimate for accuracy. The inspectors reviewed applicable procedures to determine the methodology for estimating exposures from specific work activities and for department and station collective dose goals. The inspectors evaluated Exelon's method of adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered.

The inspectors used Exelon records to determine the historical trends and current status of plant source term known to contribute to elevated facility collective dose. The inspectors assessed whether Exelon had made allowances or developed contingency plans for expected changes in the source term as the result of changes in plant fuel performance issues or changes in plant primary chemistry.

The inspectors observed radiation worker and RP technician performance during work activities being performed in radiation areas, airborne radioactivity areas, and HRAs. The inspectors evaluated whether workers demonstrated the ALARA philosophy in practice and whether there were any procedure or RWP compliance issues.

### ALARA Work Planning

The inspectors reviewed ALARA planning estimates and results achieved for the following RWPs:

- RWP 14-00406, 1R25 Refueling Floor Activities;
- RWP 14-00508, 1R25 Drywell Scaffolding;
- RWP 14-00511, 1R25 Drywell CRD Exchange Activities and Support;
- RWP 14-00519, 1R25 Drywell ISI, IGSSC, FAC Inspection.

### Source Term Reduction and Control

The inspectors reviewed records of source term trends and current status of plant source term reduction plans and contingency plans for changes in source term.

#### b. Findings

No findings were identified.

### 2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03 – 1 sample)

#### a. Inspection Scope

The inspectors verified in-plant airborne concentrations are being controlled consistent with ALARA principles and the use of respiratory protection devices. The inspectors used the requirements in 10 CFR Part 20, the guidance in RG 8.15, RG 8.25, NUREG-0041, technical specifications, and procedures required by technical specifications as criteria for determining compliance.

#### Inspection Planning

The inspectors reviewed the following:

- UFSAR to identify areas with ventilation systems or airborne monitoring instrumentation
- The respiratory protection program
- Procedures for maintenance, inspection, use of respiratory protection equipment, and air quality maintenance

#### Engineering Controls

The inspectors reviewed the following:

- Procedures for use of installed plant ventilation systems
- Observed two temporary ventilation system setups
- Observed two installed ventilation systems including the alarm setpoints
- Threshold criteria for evaluating levels of airborne beta-emitting and alpha-emitting radionuclides

### Use of Respiratory Protection Devices

The inspectors reviewed the following:

- Two work activities where respiratory protection devices were used
- The use of respirator protection factors
- Respiratory protection devices were certified for use
- Two individual respirator use qualifications

#### b. Findings

No findings were identified.

### 2RS4 Occupational Dose Assessment (71124.04 - 1 sample)

#### a. Inspection Scope

The inspectors verified that occupational dose is appropriately monitored, assessed, and reported. The inspectors used the requirements in 10 CFR Part 20, RG 8.13, RG 8.36, RG 8.40, technical specifications, and procedures required by technical specifications as criteria for determining compliance.

#### Inspection Planning

The inspectors reviewed the following:

- RP program audit
- National Voluntary Laboratory Accreditation Program dosimetry report procedures associated with dosimetry operations and dose assessments

#### External Dosimetry

The inspectors reviewed the following:

- Onsite storage of dosimeters
- Use of electronic personal dosimeters
- Eight dosimetry occurrence reports or corrective action program documents

#### Routine Bioassay (In Vivo)

The inspectors reviewed the following:

- Procedures used to assess internal dose
- The whole body count measurement process
- Portal radiation monitor use as a passive monitoring system
- Inclusion of hard-to-detect radionuclides in internal dose assessments, if applicable

### Internal Dose Assessment – Airborne Monitoring

The inspectors reviewed the dose assessment procedures based on airborne monitoring.

### Declared Pregnant Workers

The inspectors reviewed Exelon's means of communication to workers of the risks of radiation exposure to the embryo/fetus, the regulatory aspects of declaring a pregnancy, and the specific process to be used for (voluntarily) declaring a pregnancy.

Exelon had no declarations of pregnancy or internal dose assessments for declared pregnant workers during this inspection period.

### Shallow Dose Equivalent

Exelon had no documented dose assessments for shallow dose equivalent during this inspection period.

#### b. Findings

No findings were identified.

## **4. OTHER ACTIVITIES**

### 4OA1 Performance Indicator Verification (71151)

#### .1 Safety System Functional Failures (IE05) (1 sample)

##### a. Inspection Scope

The inspectors sampled Exelon's submittals for the Safety System Functional Failures performance indicator for Oyster Creek for the period of April 1, 2013 through March 31, 2014. To determine the accuracy of the performance indicator data reported during those periods, inspectors used definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73." The inspectors reviewed Exelon's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, condition reports, event reports and NRC integrated inspection reports to validate the accuracy of the submittals.

##### b. Findings

No findings were identified.



.2 Unplanned Power Changes (IE03) (1 sample)

a. Inspection Scope

The inspectors reviewed Exelon's submittal for the Unplanned Power Changes performance indicator for the period April 1, 2013 through March 31, 2014. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors reviewed control room logs, NRC integrated inspection reports, and plant process computer data, and compared that information to the data reported by Exelon to validate the accuracy of the submittal.

b. Findings

No findings were identified.

.3 RCS Specific Activity and RCS Leak Rate (2 samples)

a. Inspection Scope

The inspectors reviewed Exelon's submittal for the RCS specific activity and RCS leak rate performance indicators for the period of April 1, 2013 through June 30, 2014. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors also reviewed RCS sample analysis logs and control room logs of daily measurements for RCS leakage, and compared that information to the data reported by the performance indicator. Additionally, the inspectors observed surveillance activities that determined the RCS identified leakage rate.

b. Findings

No findings were identified.

.4 Performance Indicator Verification (71151 – 3 samples)

a. Inspection Scope

The inspectors reviewed data for the following three EP Performance Indicators: (1) drill and exercise performance; (2) ERO drill participation; and (3) ANS reliability. The last NRC EP inspection at Oyster Creek was conducted in the fourth calendar quarter of 2013. Therefore, the inspectors reviewed supporting documentation from EP drills and equipment tests from the fourth calendar quarter of 2013 through the second calendar quarter of 2014 to verify the accuracy of the reported performance indicator data. The review of the performance indicators was conducted in accordance with NRC Inspection Procedure 71151. The acceptance criteria documented in NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 7, was used as reference criteria.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 1 sample)

Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, “Problem Identification and Resolution,” the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Exelon entered issues into the corrective action program at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the corrective action program and periodically attended condition report screening meetings.

b. Findings

No findings were identified.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 1 sample)

Plant Events

a. Inspection Scope

For the plant event listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant event to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, “Reactive Inspection Decision Basis for Reactors,” for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Exelon made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed Exelon’s follow-up actions related to the events to assure that Exelon implemented appropriate corrective actions commensurate with their safety significance.

- Loss of vacuum scram during startup from a forced outage (1F34) on July 11, 2014

b. Findings

No findings were identified.

#### 4OA5 Other Activities

##### Institute of Nuclear Power Operations (INPO) Report Review

###### a. Inspection Scope

The inspectors reviewed the final report for the INPO plant assessment of Oyster Creek conducted in February 2014. The inspectors reviewed these reports to ensure that any issues identified were consistent with NRC perspectives of Exelon performance and to determine if INPO identified any significant safety issues that required further NRC follow-up.

###### b. Findings

No findings were identified.

#### 4OA6 Meetings, Including Exit

On October 22, 2014, the inspectors presented the inspection results to Mr. G. Stathes, Site Vice President, and other members of the Oyster Creek staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

### **ATTACHMENT: SUPPLEMENTARY INFORMATION**

**SUPPLEMENTARY INFORMATION**

**KEY POINTS OF CONTACT**

Exelon Personnel

G. Stathes, Site Vice-President  
J. Dostal, Plant Manager  
M. Ford, Director, Operations  
G. Malone, Director, Engineering  
D. Chernesky, Acting Director, Maintenance  
C. Symonds, Director, Training  
D. DiCello, Director, Work Management  
M. Chanda, Oyster Creek Emergency Preparedness Manager  
M. McKenna, Manager, Regulatory Assurance  
T. Farenga, Radiation Protection Manager  
J. Renda, Manager, Environmental/Chemistry  
T. Keenan, Manager, Site Security  
P. Bloss, Senior Manager, Plant Engineering  
H. Ray, Senior Manager, Design Engineering  
E. Swain, Shift Operations Superintendent  
D. Moore, Regulatory Assurance Specialist  
K. Paez, Regulatory Assurance Specialist  
K. Aleshire, Exelon Corporate Emergency Preparedness Manager  
V. Cwietniewicz, Mid-Atlantic Corporate Emergency Preparedness Manager  
M. Jesse, Regulatory Assurance Manager

**LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED**

Opened/Closed

05000219/2014004-01	NCV	Inadequate Evacuation Time Estimate Submittals (Section 1EP5)
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## LIST OF DOCUMENTS REVIEWED

### **Section 1R04: Equipment Alignment**

#### Procedures

ABN-18, Service Water Failure Response, Revision 7  
 310, Containment Spray System Operation, Revision 109  
 341, Emergency Diesel Generation Operation, Revision 101  
 ER-AA-2008, Mitigating Systems Performance Index (MSPI) Monitoring and Margin Evaluation,  
 Revision 4  
 LS-AA-2200, Mitigating System Performance Index Data Acquisition & Reporting, Revision 5

#### Condition Reports

1614019      1511787      1645010      1645135      1649757      1663342

#### Work Orders

R2233196      R2234500

#### Drawings

GE 148F740, Sheet 1, Containment Spray System Flow Diagram, Revision 43  
 3E-241-A1-001, Sheet 1, Containment Spray System, Revision 7  
 3E-532-A1-001, Sheet 1, Emergency Service Water System ISI Boundary Drawing, Revision 29  
 BR-2005, Sheet 4, Flow Diagram of Emergency Service Water System, Revision 76

#### Miscellaneous

Emergency Service Water System Health Report (7/21/2014-9/30/2014)

### **Section 1R05: Fire Protection**

#### Procedures

OP-OC-201-008, Oyster Creek Pre-Fire Plans, Revision 17  
 101.2, Oyster Creek Site Fire Protection Program, Revision 70  
 OP-OC-201-008-1003, Reactor Building (75' Elevation), Revision 1  
 OP-OC-201-008-1004, Reactor Building (51' Elevation), Revision 2  
 OP-OC-201-008-1005, Reactor Building (23' Elevation), Revision 2

### **Section 1R06: Flood Protection Measures**

#### Procedures

ER-AA-300-150, Cable Condition Monitoring Program, Revision 0  
 MA-OC-773-001, Testing/ Condition Monitoring of Inaccessible medium voltage cables not  
 subject to 10CFR50.49 Environmental Qualification, Revision 1

#### Condition Reports

1503497      1674025      1680027      1674684      1614019

#### Work Orders

R2217149      R2220905      R2217149      R2212922      R2220905      R2233196

## **Section 1R07: Heat Sink Performance**

### Procedures

ER-AA-340, GL 89-13 Program Implementing Procedure, Revision 7  
ER-OC-340-1001, Oyster Creek Generic Letter 89-13 Program Basis Document, Revision 3  
ER-AA-340-1001, GL 89-13 Program Implementation Instructional Guide, Revision 8  
ER-AA-340-1002, SW Heat Exchanger and Component Inspection Guide, Revision 5  
607.4.004, Containment Spray and Emergency Service Water Pump System 1 Operability and Comprehensive/Pre-service/Post-Maintenance In-service Test, Revision 87  
607.4.016, Containment Spray and Emergency Service Water System 1 Pump Operability and Quarterly In-service Test, Revision 38

### Condition Reports

1681138

### Calculations

C-1302-241-E120-078, Containment Spray Heat Exchanger Performance Evaluation, Revision 0  
C-1302-241-E610, Calculation of Torus Pool Temperature for NPSH and to Determine Containment Spray System Design Basis Requirements, Revision 4  
EXOC005-CALC-002, System Acceptance Criteria for Containment Spray and ESW Flow Rates, Revision 0

### Drawings

BR 2005, Sheet 4, Emergency Service Water System, Revision 86  
GE 148F740, Containment Spray System, Revision 44

### Miscellaneous

Electric Power Research Institute, EPRI NP-7552, Heat Exchanger Performance Monitoring Guidelines, Final Report, December 1991  
NRC Information Notice 90-26, Inadequate Flow of Essential Service Water to Room Coolers and Heat Exchangers for Engineered Safety-Feature Systems, April 24, 1990  
System Design Basis Document OC-241, Containment Spray System, Revision 5  
Containment Spray System 1 Heat Exchanger Cleanliness Test, dated January 23, 2014  
EPRI-NP-7552, Heat Exchanger Performance Monitoring Guidelines, dated December 1991  
System Health Report Containment Spray System, 3rd Quarter 2014  
Containment Spray System 1 Heat Exchanger Average Cleanliness Factor Trending Data October 19, 2011 and January 23, 2014  
C-1302-241-E120-078, Containment Spray Heat Exchanger Performance Evaluation, Revision 1  
TDR-1063, Evaluation of Heat Transfer Capability of Safety-Related Heat Exchangers, Revision 0  
A0703677, Containment Spray System 1 HX Performance Test – Evaluation of Data Collected During Heat Exchanger Test Performed in 2011, completed March 28, 2011

## **Section 1R11: Licensed Operator Regualification Program**

### Miscellaneous

202.1, Power Operation, Revision 143  
HU-AA-1211, Pre-Job Briefings, Revision 9

**Section 1R12: Maintenance Effectiveness**

Procedures

ER-AA-310, Implementation of the Maintenance Rule, Revision 9  
ER-AA-310-1001, Maintenance Rule Scoping, Revision 4  
ER-AA-310-1003, Maintenance Rule – Performance Criteria Selection, Revision 4  
ER-AA-310-1005, Maintenance Rule – Dispositioning between (A1) and (A2), Revision 6  
Oyster Creek Generating Station Procedure 117.3, Alternate AC System Reliability Monitoring, Revision 5  
System Heath Report Station Blackout and Support Systems, 2<sup>nd</sup> Quarter 2014  
CT and Support System Monitoring Basis Form, January 31, 2014

Condition Reports

1439089

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Procedures

308, Emergency Core Cooling System Operation, Revision 94  
310, Containment Spray System Operation, Revision 109  
341, Emergency Diesel Generator Operation, Revision 108  
WC-AA-101-1006, Online Risk Management and Assessment, Revision 1  
WC-AA-101, On-Line Work Control Process, Revision 22

**Section 1R15: Operability Determinations and Functionality Assessments**

Procedures

OP-AA-108-115, Operability Determinations, Revision 14  
OP-AA-108-115-1002, Supplemental Consideration for On-Shift Immediate Operability Determinations, Revision 2  
PI-AA-120, Issue Identification and Screening Process, Revision 1  
PL-AA-12, Analysis of Failed Components, Revision 1  
PL-AA-001-0002, Analysis of Failed Components, Revision 1  
RAP-T4f, EDG 2 Disabled, Revision 1

Drawing

EM 8397907, Emergency Diesel Generator #2 Electrical Elementary Wiring Diagram Control Circuits, Revision 14

Condition Reports

1673665	1678550	1680869	1688756	1688727	1686101
1686767	1575377	1686101	1686135	1695955	1696895
1696438	1671539	1099299			

Maintenance Orders/Work Orders

R2212089	C2032634	R2242349	A2340615	R2151853	R2190622
A2256917	R2240253				

Miscellaneous

Oyster Creek Nuclear Generating Station Technical Specification 3.4.B, Automatic Depressurization System, Amendment 247  
NRC Inspection Manual Chapter 0326, Operability Determinations & Functionality Assessments for Conditions Adverse to Quality or Safety, dated January 31, 2014  
OC 13-00474, Fan Hitting Shroud, Rot on Fan Blade, Revision 0  
OC-2014-OE-004, EDG #2 Water Leak Operability Evaluation, Revision 0

**Section 1R18: Plant Modifications**

Procedures

CC-AA-102, Design Input and Configuration Change Impact Screening, Revision 27

Miscellaneous

TDR 1227, Review of EMRV Test Results from Testing Performed at Wyle Labs, 4/2/1998  
OC 07-00451, 204-42075: EMRV Spring Bracket with Guide Material Change, Revision 0  
EC 14-00371, EMRV Solenoid Design Upgrade, Revision 0

**Section 1R19: Post-Maintenance Testing**

Procedures

MA-AA-716-012, Post Maintenance Testing, Revision 19  
602.3.005, ADS Actuation Circuit Test and Calibration, Revision 34  
636.4.003, Diesel Generator 1 Load Test, Revision 100  
636.4.013, Diesel Generator 2 Load Test, Revision 42  
665.5.006, Local Leak Rate Tests, Revision 51

Work Orders

C2032913

Condition Reports

1673665	1678550	1680869	1688756	1688727	1686101
1686767	1575377	1686101	1686135	1695955	1696895
1696438	1671539	1099299	2382430		

**Section 1R20: Refueling and Other Outage Activities**

Procedures

203, Plant Shutdown, Revision 76  
MA-OC-763-421, Nuclear Generator Disassembly, Inspection and Reassembly, Revision 1  
131, Oyster Creek Load Lift Management Procedure, Revision 7  
MA-AA-796-024, Scaffold Installation, Inspection, and Removal, Revision 9  
MA-MA-796-024-1001, Scaffolding Criteria for the Mid Atlantic Stations, Revision 8  
ABN-49, Loss of USS 1B3, Revision 7

Work Orders

C2028773    A2085476    A2268377



Condition Reports

2384030	2384036	2384008	2384007	2384004	2383967
2383947	2383946	2383893	2383889	2383877	2383691
2383687	2381794	2381792	2382555	2382551	2382476
2382165	2381310	2381267	2381018	2381388	2381310
2380943	2380939	2380923	2380924	2380925	2380927
2380931	2380934	2345642	2345116	2345085	2264927
2383174	2383153	2383001	2383041	2384039	2384035
2381420	2381033	2381516	2382227	2382580	2381928
2384769	2385320	2385268	2384961	2384931	2384908
2384856	2384786	2384746	2384772	2387288	2387297
2387299	2387302	2387351	2387371	2387393	2387275
2387282	2388916	2388741	2388737	2388392	2388352
2388222	2388179	2388150	2387995	2386958	2386974
2387050	2387054	2387128	2387132	2387142	2387167
2387168	2387169	2387170	2387187	2387212	2387239
2387244	2387260	2387271	2387251	2386495	2385829
2385799	2385717	2385592	2385501	2385858	2385855
2385853	2385737	2385726	2385656	2385620	2385557
2385500	2385458	2385370	2384780	2384761	2384705
2384712	2384768	2384948	2385163	2385319	2385316
2385172	2384783	2385128	2384779	2385321	2385323
2386510	2386507	2386491	2386490	2386486	2386483
2386411	2386336	2386319	2386063	2385969	2385958
2385878	2386482	2386480	2386419	2386417	2386416
2386339	2386337	2386335	2386306	2386208	2386186
2386151	2385903	2383712	2383714	2383758	2383993
2381157	2382341	2382358	2383761	2383775	2383765
2383064	2383107	2383756	2382954	2381937	2381941
2381942	2381425	2381424	2363437	2382943	2383948
2345243	2380937	2381348	2381410	2382859	2383185
2382548	2383401	2383396	2383393	2382722	2383112
2387588	2387610	2387995	2385903	2380831	2380915
2383832	2383831	2383817	2383265	2383852	2383820

Miscellaneous

MRP Associates Inc. letter, MPR Independent Review of Oyster Creek Bridge Crane for 165 Ton Planned Engineered Lift of Turbine Rotor, dated September 27, 2014  
 Shutdown Safety Review, Main Generator Rotor Heavy Lift (1R25), Revision 1, dated September 27, 2014  
 Event Notice 50476  
 A2236189, 'C' Shutdown Cooling Pump Degradation  
 Oyster Creek Generating Station 1R25 Refueling Outage Shutdown Safety Plan, Revision 2  
 1R25 Outage Risk Analysis Report, dated September 14, 2014

**Section 1R22: Surveillance Testing**Procedures

610.4.003, Core Spray Valve Operability and In-Service Test, Revision 44  
 610.4.022, Core Spray System 2 Pump Operability and Quarterly In-Service Test, Revision 29  
 665.5.006, Local Leak Rate Tests, Revision 51

Drawings

GE885D781, Core Spray System Flow Diagram, Sheet 1, Revision 71

Work Orders

R22422210 R2242220 R2212212

Condition Reports

2382430

Miscellaneous

Oyster Creek Nuclear Generating Station Updated Final Safety Analysis Report Section 6.3.1.3,  
Core Spray System, Revision 18

Oyster Creek Nuclear Generating Station Technical Specification 4.4, Emergency Cooling,  
Amendment 271

**Section 1EP2: Alert and Notification System Evaluation**Procedures

EP-MA-121-1002, Exelon East Alert Notification System (ANS) Program, Revision 9

EP-MA-121-1003, Exelon East ANS Siren Monitoring, Troubleshooting, and Testing ASC ANS  
Systems, Revision 3

EP-MA-121-1004, Exelon East ANS Corrective Maintenance, Revision 5

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Condition Reports

1527756	1530874	1532881	1533033	1533716	1534317
1553190	1553234	1553424	1667470		

Miscellaneous

EP-MA-121-1005, Attachment 2, ANS Preventive Maintenance Checklist for Sirens 11, 32, and  
34, dated February 29, 21, and 25, 2013

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Oyster Creek Generating Station Emergency Planning Zone, dated December 6, 2012

Letter from FEMA Region II to NJ State Police, Emergency Management Section, re: Oyster  
Creek Generating Station ANS Design Report, Revision 0, dated October 4, 2013

Oyster Creek Generating Station Public Alert and Notification System Design Report, dated  
May 10, 2013

**Section 1EP3: Emergency Response Organization Staffing and Augmentation System**Procedures

EP-AA-1010, Radiological Emergency Plan Annex for Oyster Creek Station, Revision 8

EP-AA-1010, Addendum 1, Oyster Creek Station On-Shift Staffing Technical Basis, Revision 0

EP-AA-112-100-F-06, ERO Notification or Augmentation, Revision Q

EP-AA-121-1001, Automated Call-Out System Maintenance, Revision 7

OP-OC-100-101, Shift Coverage Guidelines, Revision 8

OP-OC-100-1001, Shift Coverage Log, Revision 16

TQ-AA-113, ERO Training and Qualification, Revision 23

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1429882	1491029	1648164	1657677	1665149	1665293
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Drill Reports

Unannounced Call-In Augmentation Drill Reports: 2013-04, 2013-06, 2013-08, 2014-01, 2014-05, and 2014-07

Miscellaneous

Oyster Creek Team Roster Report, dated September 23, 2014

**Section 1EP4: Emergency Action Level and Emergency Plan Changes**Miscellaneous

Letter from J. Barstow (Exelon Generation Company, LLC) to: U.S. Nuclear Regulatory Commission, "10 CFR Part 50, Appendix E – Evacuation Time Estimate Analysis Information for Oyster Creek Nuclear Generating Station and Three Mile Island Nuclear Station," dated April 4, 2014 [ML14101A164]

**Section 1EP5: Maintenance of Emergency Preparedness**Procedures

EMG-3200.11, Secondary Containment Control, Revision 13  
 EP-AA-120-1001, 10 CFR 50.54(q) Change Evaluation, Revision 7  
 EP-AA-121, Emergency Response Facilities and Equipment Readiness, Revision 12  
 EP-AA-121-F-10, Oyster Creek Equipment Matrix, Revision 1  
 EP-MA-114-100, Mid-Atlantic State/Local Notifications, Revision 20  
 EP-MA-124-1001, Facilities Inventories and Equipment Tests, Revision 10  
 LS-AA-104-1002, 50.59 Applicability Review Form, Revision 5  
 PI-AA-120, Issue Identification and Screening Process, Revision 1  
 Oyster Creek Generating Station Procedure 420, Instrumentation Setpoints, Revision 14

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0238446	1433589	1438411	1488910	1497636	1548471
1551802	1557600	1636722	1639140	1696826	1635671
2384746	2385620	1649004	1665151	1665474	1695635
1696826	1635745				

Audits & Self Assessments

NOSA-OYS-13-03, Emergency Preparedness Audit Report, dated April 30, 2013  
 NOSA-OYS-14-03, Emergency Preparedness Audit Report, dated April 23, 2014

Miscellaneous

KLD TR-629, Oyster Creek Generating Station Development of Evacuation Time Estimates, dated March 20, 2014

Letter from D. M. Gullott (Exelon Generation Company, LLC) to: U.S. Nuclear Regulatory Commission, "10 CFR 50 Appendix E - Evacuation Time Estimate Analysis for Three Mile Island Nuclear Station," dated December 12, 2012 [ML123550293]

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Oyster Creek Emergency Plan Component Work Status Report, dated 9/24/14  
Oyster Creek Nuclear Generating Station, 05/28/2014, Notice of Unusual Event Report, (2014-05), dated June 23, 2014

### Surveillances

621.3.024, Stack RAGEMS Sample and Effluent Flow – Functional Test, performed January 10, 2014 and July 9, 2014

EP-MA-124-1001-F-04, Operations Support Center Inventory, dated February 3, 2014

EP-MA-124-1001-F-05, Field Team Inventory, dated October 31, 2012

EP-MA-124-1001-F-32, OCGS Hospital Inventory, dated February 26, 2013

### **Section 2RSO1: Radiological Hazard Assessment and Exposure Controls**

RP-AA-14, Radioactive Material Control Program Description, Revision

RP-AA-18, Radiological Posting and Labeling Program Description, Revision 1

RP-AA-19, High Radiation Area Program Description, Revision 2

RP-AA-203-1001, Personnel Exposure Investigations, Revision 6

RP-AA-300, Radiological Survey Program, Revision 9

RP-AA-300-1005, Removing Items from the Spent Fuel Pool, Reactor Cavity and Equipment Pit, Revision 0

RP-AA-302, Determination of Alpha Levels and Monitoring, Revision 5

RP-AA-350, Personnel Contamination Monitoring, Decontamination and Reporting, Revision 11

RP-AA-376, Radiological Postings, Labeling and Markings, Revision 8

RP-AA-376-1001, Radiological Postings, Labeling and Marking Standard, Revision 7

RP-AA-376-2001, Labeling Containers and Marking Material for Radiological Purposes, Revision 0

RP-AA-402-1002, Radiological Risk Management, Revision 4

RP-AA-460, Controls for High and Locked High Radiation Areas, Revision 25

RP-AA-460-002, Additional High Radiation Exposure Control, Revision 1

RP-AA-460-003, Access to HRAs/LHRAs and VHRA and Contaminated Areas, Revision 5

RP-AA-500, Radioactive Material (RAM) Control, Revision 15

RP-AA-500-1001, Requirements for Radioactive Material Stored Outdoors, Revision 3

RP-AA-500-1002, Incoming Survey Requirements for Non-Radioactive Tools and Equipment, Revision 1

RP-AA-503, Unconditional Release Survey Method, Revision 5

RP-AA-503-F-01, Unconditional Release Instructions Using SAM for Personnel Items used in the RCA but not in Contaminated Areas, Revision 0

RP-AA-800, Control, Inventory, and Leak Testing of Radioactive Sources, Revision 7

RP-AA-1015, Control of Drinking Water Stations in Radiological Controlled Areas, Revision 1

Audits, Self-Assessments, and Surveillances

Check In Self-Assessment 1459423, Nuclear Regulatory Commission Outage HP Inspection, dated June 19, 2013

Check In Self-Assessment 1459423, Nuclear Regulatory Commission Outage HP Inspection, dated July 30, 2014

NOS-OYS-13-06, Radiation Protection Audit, dated August 28, 2013

NOSCPA-OC-14-07, Oyster Creek Radiation Protection Performance Report, dated April 17, 2014

Condition Reports

1609182	1631206	1632468	1660734	1661413	1663763
2383020	2383255	2381738	1696800		

Miscellaneous

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OCGS Rad Survey RBS-14-01118, RB Top of Torus, May 13, 2014

OC RWP 14-00406-1 Refueling Floor Activities, August 12, 2014

OC RWP 14-00508, 1 R 25 Drywell Scaffolding, August 13, 2014

OC RWP 14-00511, 1 R 25 DW CRD Exchange Activities and Support, June 20, 2014

OC RWP 14-00519, 1 R 25 DW ISI, IGSSC, FAC Inspection Including Weld Crown Reduction, August 12, 2014

OC RWP 14-00505, 1 R 25 DW Ops, Rad Pro, Service and Observations, June 20, 2014

OC Personnel Exposure Investigation 14-035, Electronic Dosimeter Alarm, September 22, 2014

OC Locked High Radiation Area Key List, September 23, 2014

OC Radiological Survey 14-02166 RB 119 West Refuel Floor Area, September 14, 2014

OC Radiological Survey 14-02391 RB 119 West Refuel Floor General Area, September 19, 2014

OC Radiological Survey 14-02454 DW 23 V-1-8 Main Steam Isolation Valve, September 21, 2014

OC Radiological Survey 14-02492 DW 23 V-1-8 Main Steam Isolation Valve, September 21, 2014

**Section 2RSO2: Occupational ALARA Planning and Controls**Procedures

RP-AA-16, ALARA Program Description, Revision 0

RP-AA-400-1005, ALARA Suggestion Program, Revision 0

RP-AA-400-1006, Outage Exposure Estimating and Tracking, Revision 3

RP-AA-400-1007, Elevated Dose Rate Response Planning, Revision 0

RP-AA-400-1008, Exposure Goal Recovery Plans, Revision 0

RP-AA-400-1009, Remote Monitoring System, Revision 0

RP-OC-402, Use of Temporary Shielding, Revision 0

CY-AB-120-1000, BWR Strategic Water Chemistry Plan, Revision 11

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1603581	1625662	1687571	1681930	1681942	2383889
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Miscellaneous:

Oyster Creek Final Safety Analysis Report  
 OC RO25 ALARA System Flush Plan, September 23, 2014  
 OC RP-AA-401 Attachment 2 ALARA Plan 14-519 RO25 Drywell ISI-IGSSC-FAC Inspections  
 OC RP-AA-401 Attachment 2 ALARA Plan 14-508 RO25 Drywell Scaffolding  
 OC RP-AA-401 Attachment 2 ALARA Plan 14-406 RO25 Rx Disassembly, Refuel, Inspection  
 Reassembly  
 OC RP-AA-401 Attachment 2 ALARA Plan 14-511 RO2 CRD Exchange and CRD Support Work  
 RP-AA-401, Operational ALARA Planning and Control, Revision 15  
 RP-AA-402, Radiation Protection Dose Excellence Planning Process, Revision 3  
 RP-AA-400, ALARA Program, Revision 11  
 RP-AA-400-1004, Emergent Dose Control and Authorization, Revision 5  
 OC RP-AA-401 Attachment 7 ALARA Work In Progress Review 1R25 Drywell ISI-IGSSC-FAC  
 Inspections September 19, 2014  
 OC RP-AA-401 Attachment 7 ALARA Work In Progress Review 1R25 Scaffolding, September  
 21, 2014  
 OC RP-AA-401 Attachment 7 ALARA Work In Progress Review 1R25 CRD Exchange and CRD  
 Support, September 21, 2014  
 OC RP-AA-401 Attachment 7 ALARA Work In Progress Review 1R25 Rx Disassembly, Refuel,  
 Inspection and Reassembly, September 19, 2014  
 OC Radiological Survey 14-025 76 Drywell BRAC Radiation Buildup Survey, September 23,  
 2014  
 OC Radiation Protection 01R24-2012 Refueling Outage Report, February 2013

**Section 2RSO3: In-Plant Airborne Radioactivity Control and Mitigation**Procedures:

RP-AA-013, Respiratory Protection Program Description, Revision 0  
 RP-AA-224, CEDE Dose Tracking Using Lapel Air Samplers, Revision 1  
 RP-AA-229, Fastscan ABACOS Plus Whole Body Counter Calibration, Revision 1  
 RP-AA-301, Radiological Air Sampling Program, Revision 8  
 RP-AA-302, Determination of Alpha Levels and Monitoring, Revision 7  
 RP-AA-440, Respiratory Protection Program, Revision 10  
 RP-AA-441, Evaluation and Selection of Respiratory Protection Usage, Revision 4  
 RP-AA-443, Quantitative Respirator Fit Testing, Revision 12  
 RP-AA-700-1301, Calibration, Source Check, Operation and Set-up of the Eberline Beta Air  
 Monitor Model AMS-4, Revision 1  
 RP-AA-825, Maintenance Care and Inspection of Respiratory Protective Equipment, Revision 6  
 RP-AA-825-1011, Inspection and use of Mururoa V4 and V4 F1 Air Supplied Suits, Revision 5  
 RP-AA-825-1014, Operation and Inspection of 3M VersafloTR-300 PAPR System, Revision 2  
 RP-AA-825-1020, Operation and Use of Supplied Air Respirators, Revision 0  
 RP-AA-825-1035, Issue and Control of Respirators, Revision 1  
 RP-AA-870-1002, Use of Vacuum Cleaners in Radiological Controlled Areas, Revision 3  
 RP-AA-870-1003, Testing Portable HEPA Filter Units, Revision 0  
 RP-AA-870-1001, Set-up and Operation of Portable Air Filtration Equipment, Revision 3

Audits, Self-Assessments, and Surveillances:

Focused Area Self-assessment AR 1611319, ALARA Dosimetry, 1R25 Pre NRC Inspection,  
 July 30, 2014

Condition Reports:  
2060042

Miscellaneous:

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RP-AA-301, Attachment 2 Airborne Radioactivity Calculation Sheet, Sample # 14-1310, Turbine Building Condenser Bay, dated September 20, 2014

RP-AA-301, Attachment 2 Airborne Radioactivity Calculation Sheet, Sample # 14-1379, Turbine Building Condenser Bay: T-1-1 Moisture Separator, dated September 21, 2014

RP-AA-301, Attachment 2 Airborne Radioactivity Calculation Sheet, Sample # 14-1190, Turbine Building Heater Bay: 1-3 East Reheater Upper Manway, dated September 18, 2014

RP-AA-301, Attachment 2 Airborne Radioactivity Calculation Sheet, Sample # 14-1580 DW 13' ISI Prep on B Recirc Pump Line, dated September 26, 2014

RP-AA-301, Attachment 2 Airborne Radioactivity Calculation Sheet, Sample # 14-1607 DW 13' B Recirc Line Grinding, dated September 27, 2014

RP-AA-870-1001 Attachment 3 Sample HEPA Issue and Return Log, dated September 11, 2014

RP-AA-870-1002 Attachment 1 HEPA Vacuum Issue Log, dated September 22, 2014

RP-AA-825-1013 Attachment 2 3M Air Mate Inspection and issue Log, dated September 20, 2014

RP-AA-825-1011 Attachment 3 Muroa Air Fed Suit Inspection and Issue Log, dated September 21, 2014

RP-AA-825-1035 Attachment 1 Respirator Issue Log, dated September 21, 2014

Stan Hope Associates Certificate of Calibration 20142318-69477, TSI Portacount Leak Testing System Model 8020, Serial No. 80215961, dated July 17, 2014

Stan Hope Associates Certificate of Calibration 20142433-69873, TSI Portacount Leak Testing System Model 8020, Serial No. 15965, dated August 12, 2014

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RP-AA-441 Attachment 2 TEDE ALARA Evaluation Screening Worksheet for RO25 Cavity Decon and Coating, dated September 11, 2014

RP-AA-441 Attachment 2 TEDE ALARA Evaluation Screening Worksheet for E Recirc Pump Seal Replacement, dated April 21, 2014

RP-AA-441 Attachment 2 TEDE ALARA Evaluation Screening Worksheet for E Recirc Pump Seal Rebuild, dated May 6, 2014

RP-AA-441 Attachment 2 TEDE ALARA Evaluation Screening Worksheet for E Recirc Pump Seal Replacement, dated May 6, 2014

**Section 2RSO4: Occupational Dose Assessment**

Procedures:

RP-AA-203, Exposure Control and Authorization, Revision 3

RP-AA-203-1001, Personnel Exposure Investigations, Revision 6

RP-AA-208, Occupational Exposure Reporting, Revision 8

RP-AA-210, Dosimetry Issue, Usage and Control, Revision 23

RP-AA-210-1001, Dosimetry Logs and Forms, Revision 7

RP-AA-210-1003, REMs Access Control System Outage Guidance, Revision 0

RP-AA-211, Personnel Dosimetry Performance Verification, Revision 10

RP-AA-270, Prenatal Radiation Exposure, Revision 6

RP-AA-220, Bioassay Program, Revision 10

RP-AA-220-1001, Collection and Handling of In Vitro Bioassay, Revision 1

RP-AA-221, Whole Body Count Data Review, Revision 1  
RP-AA-222, Methods for Estimating Internal Exposure from In Vivo and In Vitro Bioassay Data, Revision 5  
RP-AA-224, CEDE Tracking Using Lapel Air Samples, Revision 1  
RP-AA-350, Personnel Contamination Monitoring, Decontamination and Reporting, Revision 11  
RP-OC-230, Operation of the Canberra FastScan Whole Body Counter using APEX-INVIVO, Revision 0

Audits, Self-Assessments, and Surveillances:

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Condition Reports

2383174      23831393

Miscellaneous:

Oyster Creek Final Safety Analysis Report  
RP-AA-203, Attachment 1 Dose Control Level Extension Form, P. Mahoney, dated September 9, 2014  
Radiation Protection Calculation 14-010, Whole Body Count Calibration Report 2014, dated September 14, 2014

**Section 40A1: Performance Indicator Verification**

Procedures

EP-AA-125-1001, EP Performance Indicator Guidance, Revision 7  
EP-AA-125-1002, ERO Performance – Performance Indicators Guidance, Revision 9  
ABN-1, Reactor Scram, Revision 11

Condition Reports

1576230

Miscellaneous

NUREG 1022, Reporting Requirements, Revision 3  
Various Operator Logs from April 1, 2013 to March 31, 2014  
NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 7  
ANS Reliability PI data, October 2013 – June 2014  
DEP PI data, October 2013 – June 2014  
ERO Drill Participation PI data, October 2013 – June 2014

**Section 40A2: Problem Identification and Resolution**

Procedures

PI-AA-125, Corrective Action Program Procedure, Revision 0  
ABN-1, Reactor Scram, Revision 11  
201, Plant Startup, Revision 93



**Section 40A3: Follow-up of Events and Notices of Enforcement Discretion**Procedures

PI-AA-125, Corrective Action Program Procedure, Revision 0  
 ABN-1, Reactor Scram, Revision 11  
 201, Plant Startup, Revision 93

Condition Reports

1568503      1680766      1681506      1680755      1681717

Work Orders

C2032482

**Section 40A5: Other Activities**Miscellaneous

Oyster Creek Nuclear Generating Station February 2014 Evaluation Final Report

**LIST OF ACRONYMS**

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Reasonably Achievable
ANS	Alert and Notification System
CRD	Control Rod Drive
EP	Emergency Preparedness
EPIP	Emergency Preparedness Implementing Procedure
ERF	Emergency Response Facilities
ERO	Emergency Response Organization
ETE	Evacuation Time Estimate
Exelon	Exelon Nuclear
FAC	Flow Accelerated Corrosion
ISI	In-Service Inspection
HRA	High Radiation Area
IGSSC	Inter Granular Stress Corrosion Cracking
IMC	Inspection Manual Chapter
INPO	Institute of Nuclear Power Operations
LHRA	Locked High Radiation Area
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NSIR	Nuclear Security and Incident Response, Office of
NUREG	NRC technical report designation (Nuclear Regulatory Commission)
ORO	Offsite Response Organization
RCS	Reactor Coolant System
RG	Regulatory Guide
RP	Radiological Protection
RWP	Radiation Work Permit
SDP	Significance Determination Process
UFSAR	Updated Final Safety Analysis Report