



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

February 8, 2012

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

SUBJECT: OYSTER CREEK GENERATING STATION - NRC INTEGRATED INSPECTION
REPORT 05000219/2011005

Dear Mr. Pacilio:

On December 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Oyster Creek Generating Station. The enclosed inspection report documents the inspection results, which were discussed on January 23, 2012 with Mr. M. Massaro and other members of your staff.

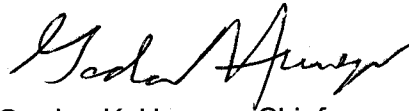
The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC-identified finding of very low safety significance (Green) which was determined to involve a violation of NRC requirements. However, because of the very low safety significance, and because the finding was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV), consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest the NCV 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 Generating Station. In addition, if you disagree with the cross-cutting aspect assigned to the finding in this report, 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 Generating Station.

In accordance with 10 CFR 2.390 of the NRCs "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 Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

A handwritten signature in black ink, appearing to read "Gordon K. Hunegs".

Gordon K. Hunegs, Chief
Reactor Projects Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 05000219/2011005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document 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/

Gordon K. Hunegs, Chief
Reactor Projects Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 05000219/2011005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

Distribution w/encl:

W. Dean, RA
D. Lew, DRA
J. Tappert, DRP
J. Clifford, DRP
C. Miller, DRS
P. Wilson, DRS
G. Hunegs, DRP
S. Barber, DRP
N. Lafferty, DRP

A. Dugandzic, DRP
L. Kern, DRP
J. Kulp, DRP, SRI
J. Ambrosini, DRP, RI
J. DeVries, DRP, OA
L. Chang, RI OEDO
RidsNrrPMOysterCreek Resource
RidsNrrDorLpl1-2 Resource
ROPreports Resource

SUNSI Review Complete: GKH (Reviewer's Initials)

ML12040A001

DOCUMENT NAME: G:\DRP\BRANCH6\+++OYSTER CREEK\OC INSPECTION REPORTS 2011\
OC IR 2011005 REV3.DOCX

After declaring this document "An Official Agency Record" it will/will not be released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE <i>mmt</i>	RI/DRP	RI/DRP				
NAME	JKulp/ GKH for	GHunegs/GKH				
DATE	02/08 /12	0208/12				

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket No.: 50-219

License No.: DPR-16

Report No.: 05000219/2011005

Licensee: Exelon Nuclear

Facility: Oyster Creek Generating Station

Location: Forked River, New Jersey

Dates: October 1 2011 – December 31, 2011

Inspectors: J. Kulp, Senior Resident Inspector
J. Ambrosini, Resident Inspector
R. Nimitz, Senior Health Physicist
R. Montgomery, Resident Inspector (Acting)
M. Modes, Senior Reactor Inspector
S. Barr, Senior Emergency Preparedness Inspector
N. Lafferty, Project Engineer
C. Newport, Operations Engineer
J. Whited, Project Manager

Approved By: Gordon Hunegs, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS	3
1. REACTOR SAFETY	4
1R01 Adverse Weather Protection	4
1R04 Equipment Alignment.....	4
1R05 Fire Protection	5
1R11 Licensed Operator Requalification Program.....	6
1R12 Maintenance Effectiveness	7
1R13 Maintenance Risk Assessments and Emergent Work Control.....	7
1R15 Operability Determinations and Functionality Assessments	8
1R19 Post-Maintenance Testing	10
1R22 Surveillance Testing	11
1EP6 Drill Evaluation.....	12
4. OTHER ACTIVITIES	17
4OA1 Performance Indicator (PI) Verification	17
4OA2 Problem Identification and Resolution.....	19
4OA3 Follow-Up of Events and Notices of Enforcement Discretion	25
4OA6 Meetings, Including Exit.....	28
4OA7 Licensee-Identified Violations	28
ATTACHMENT: SUPPLEMENTARY INFORMATION.....	28
SUPPLEMENTARY INFORMATION	A-1
KEY POINTS OF CONTACT	A-1
LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED.....	A-2
LIST OF DOCUMENTS REVIEWED	A-2

SUMMARY OF FINDINGS

IR 05000219/2011005, October 1- December 31, 2011; Oyster Creek Generating Station; Operability Determinations and Functionality Assessments.

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 (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspects for the findings were determined using IMC 0310, "Components Within Cross-Cutting Areas." Findings for which the SDP does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Mitigating Systems

Green. The inspectors identified a Green NCV of 10 CFR Part 50.55a, Codes and Standards, because Exelon did not complete an adequate analysis when establishing a new reference value for the A containment spray pump in accordance with the American Society of Mechanical Engineer (ASME) Operation and Maintenance (OM) Code Subsection ISTB 4.6. The inspectors determined that Exelon's failure to correctly establish a new reference value for the A containment spray pump in accordance with the requirements of ASME OM Code Subsection ISTB 4.6 was a performance deficiency. Exelon entered this issue into the corrective action program for resolution as IR 1281326.

This finding is more than minor because it is similar to IMC 0612, Appendix C, Example 3.j, in that there was a reasonable doubt that the system met ASME operability requirements due to the inadequate evaluation. Additionally, the inspectors determined that this issue was more than minor because it affected the procedure quality attribute of the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined this finding was not a design qualification deficiency resulting in a loss of functionality or operability, did not represent an actual loss of safety function of a system or train of equipment, and was not potentially risk-significant due to a seismic, fire, flooding, or severe weather initiating event. Therefore, the finding is considered to be of very low safety significance.

This finding has a cross-cutting aspect in the area of Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, because Exelon did not fully follow the ASME requirements in Subsection ISTB 4.6, New Reference Values. [P.1(c)]. (Section 1R15)

Other Findings

None.

REPORT DETAILS

Summary of Plant Status

Oyster Creek began the inspection period at 100 percent power. On November 6, operators reduced power to approximately 85 percent to perform a rod pattern adjustment, turbine valve testing and scram time testing. Operators returned the unit to 100 percent on the same day. The unit remained at or near 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 1 sample)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of Exelon's readiness for the onset of seasonal cold temperatures. The review focused on the intake structure and the emergency diesel generators (EDGs). The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), technical specifications, control room logs, and the corrective action program to determine what temperatures or other seasonal weather could challenge these systems, and to ensure Exelon's personnel had adequately prepared for these challenges. The inspectors reviewed station procedures, including Exelon's seasonal weather preparation procedure and applicable operating procedures. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during cold weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns (71111.04Q – 2 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- Walkdown of containment spray system 2 while containment spray system 1 was out of service for surveillance testing on October 19, 2011
- Walkdown of core spray system 2 while core spray system 1 was out of service for surveillance testing on November 16, 2011

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 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's staff had properly identified equipment issues and entered them into the corrective action program for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

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

a. Inspection Scope

On December 1, 2011, the inspectors performed a complete system walkdown of accessible portions of the isolation condenser system 'A' 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, 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

.1 Resident Inspector Quarterly Walkdowns (71111.05Q – 4 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.

- 480V Switchgear Room A (OB-FZ-6A) on November 21, 2011
- 4160V A & B Switchgear Room (TB-FZ-11C) on November 29, 2011
- 4160V C Battery Room (TB-FA-26) on November 29, 2011
- Cable Spreading Room (OB-FZ-4) on December 14, 2011

b. Findings

No findings were identified.

2. Fire Protection – Drill Observation (71111.05A – 1 sample)

a. Inspection Scope

The inspectors observed a fire brigade drill scenario conducted on December 14, 2011, that involved a fire in the multiplexer room, in the main office building. The inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors observed the post-drill debrief and verified that Exelon personnel identified deficiencies, openly discussed them in a self-critical manner, and took appropriate corrective actions as required. The inspectors evaluated specific attributes as follows:

- Proper wearing of turnout gear and self-contained breathing apparatus
- Proper use and layout of fire hoses
- Employment of appropriate fire-fighting techniques
- Sufficient fire-fighting equipment brought to the scene
- Effectiveness of command and control
- Search for victims and propagation of the fire into other plant areas
- Smoke removal operations
- Utilization of pre-planned strategies
- Adherence to the pre-planned drill scenario
- Drill objectives met

The inspectors also evaluated the fire brigade's actions to determine whether these actions were in accordance with Exelon's fire-fighting strategies.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11 – 1 sample)

a. Inspection Scope

The inspectors observed licensed operator simulator training scenario 2612.CREW. 11-6.01 on October 5, 2011. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the

emergency classification made by the shift manager and the technical specification action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12 – 1 sample)

a. Inspection Scope

The inspectors reviewed the sample listed below to assess the effectiveness of maintenance activities on structures, system and components (SSC) 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 SSC 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 SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs 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.

- Nuclear instrumentation (System 621) on December 1, 2011

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 the station's probabilistic 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.

- B isolation condenser steam inlet valve (V-14-33) packing adjustment and core spray system 2 outage window on November 8, 2011
- Unplanned unavailability of the 1-1 and 1-2 diesel fire pumps with 1 EDG unavailable due to planned maintenance on December 12, 2011
- 1-2 diesel fire pump unavailable for corrective maintenance on December 22, 2011
- High hydrogen concentration in C battery room on December 21, 2011
- Bank 7 and bank 8 breaker maintenance on December 27, 2011

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:

- Unexpected alarm due to low differential pressure in the reactor building on October 2, 2011 (IR 1271279)
- Chip of porcelain from the bus side insulator emergency service water 1-4 breaker cubical on October 11, 2011 (IR 1274871)
- Containment spray pump 51A flow went above the upper action limit on October 25, 2011 (IR 1281326)
- 2 diesel fire pump start and fire main piping leak during maintenance activity on December 12, 2011 (IR 1301461)
- Unexpected rise in both emergency condenser's shell side level indications on December 20, 2011 (IR 1304907)

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 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

Introduction. The inspectors identified a Green NCV of 10CFR 50.55a, Codes and Standards, when Exelon did not perform an adequate analysis, in accordance with the requirements of the ASME operations and maintenance (OM) Code subsection ISTB 4.6, of the A containment spray pump to support establishment of a new inservice test (IST) reference value following the failure of the biennial comprehensive IST.

Description. On October 19, Exelon performed the biennial comprehensive IST on the A containment spray pump. The results of the test determined that the pump flow rate of 4400 gpm exceeded the ASME IST upper action limit of 4326 gpm. Exelon declared the A containment spray pump inoperable as required by the ASME OM code and entered the issue into the corrective action program as IR 1278683.

ASME OC code subsection ISTB 6.2.2, "Action Range," states, in part, "If the measured test parameter values fall within the required action range..., the pump shall be declared inoperable until either the cause of the deviation has been determined and the condition is corrected, or an analysis of the pump is performed and new reference values are established in accordance with subsection ISTB 4.6." Exelon chose to perform an analysis of the pump and establish a new reference value.

ASME OM code subsection ISTB 4.6, "New Reference Values," delineates the requirements for an analysis performed to verify operational readiness of a pump. ISTB 4.6 states, in part, "In cases where the pump's test parameters are within either the alert or required action ranges..., and the pump's continued use at the changed value is supported by an analysis, a new set of reference values may be established. This analysis shall include both a pump level and a system level evaluation of operational readiness, the cause of the change in pump performance, and an evaluation of all trends indicated by all available data. The results of this analysis shall be documented in the record of tests."

Exelon performed an analysis and concluded that establishing a new reference value for the A containment spray pump was allowable. Their analysis stated, "An analysis of pump performance was reviewed for the last two years. The pump performance trend indicates that the pump is performing acceptably with flow ranging between 4300 and 4400gpm. A review of all maintenance activities since pump replacement shows no activities have been performed that could impact pump performance. Vibration data for the pump has been reviewed and it shows no negative trend that could impact reliable pump operation." Using the results of the October 19 test, Exelon selected 4400gpm as the new reference point and calculated new alert range and required action range values. Exelon performed a comprehensive inservice test on October 20, with results meeting the new acceptance criteria. Exelon declared the A containment spray pump operable following review of the test data.

The inspectors reviewed Exelon's analysis for the A containment spray pump and identified that Exelon's analysis did not meet the requirements stated in ASME OM Code Subsection ISTB 4.6. Specifically, only a partial system level evaluation of readiness was conducted, the cause of the change in pump performance was not identified and the trend analysis was conducted using only the last 2 years of data vice all the available data.

The inspectors notified Exelon of the concern that that the existing analysis did not meet the requirements of OM code subsection ISTB 4.6 and was inadequate to support operability of the A containment spray pump. Exelon entered this issue into the corrective action program as IR 1281326.

In response to the inspectors concerns, Exelon performed further analysis of the issue and identified that B containment spray pump had exhibited the same increase in flow as the A containment spray pump over the same period of time. Additionally, the detailed

Enclosure

analysis of the A containment spray pump showed that the hydraulic performance of the pump had not appreciatively changed, based upon comparisons of the pump differential pressure. The analysis concluded that both containment spray pumps were operating satisfactorily and that the change in indicated flow rates of both pumps was due to suspected inaccuracy of the installed flow measuring device, which is common to both pumps. Exelon has developed and is performing a troubleshooting action plan to determine the nature of the inaccuracy of the flow measuring and documented the issue in IR 1285841. The flow measuring device is not used by operators as a parameter to control system flow and is primarily used to conduct the quarterly IST test.

Analysis. The inspectors determined that Exelon's failure to perform an adequate analysis of the A containment spray pump in accordance with the requirements of ASME OM Code Subsection ISTB 4.6 to demonstrate operability of the pump after it exceeded the upper required action range limit, was a performance deficiency. This finding is more than minor because it is similar to IMC 0612 Appendix E Minor Example 3.j in that there was a reasonable doubt that the A containment spray pump met ASME requirements based upon the original evaluation. This finding also affects the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

The inspectors evaluated the finding using Phase 1, "Initial Screening and Characterization" worksheet in Attachment 4 to IMC 0609, "Significance Determination Process." The inspectors determined this finding was not a design qualification deficiency resulting in a loss of functionality or operability, did not represent an actual loss of safety function of a system or train of equipment, and was not potentially risk-significant due to a seismic, fire, flooding, or severe weather initiating event. Therefore, inspectors determined the finding to be of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon failed to thoroughly evaluate problems such that the resolutions addressed causes and extent of conditions, as necessary, which includes evaluating for operability. Specifically, Exelon did not fully address the ASME requirements in ISTB 4.6, "New Reference Values," when performing the analysis to establish new IST reference values. [P.1(c)]

Enforcement: 10 CFR 50.55a states in part, that IST Programs verify the operational readiness of pumps and valves in compliance with the requirements of the ASME Code. Contrary to the above Exelon failed to adequately analyze pump and system performance when establishing new IST reference values in accordance with the ASME Code. Because this violation was of very low safety significance and it was entered into Exelon's CAP as IR 1281326, this violation is being treated as an NCV, consistent with the Enforcement Policy. **(NCV 05000219/2011005-01, Failure to Establish New Reference Values in Accordance with ASME Code)**

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.

- Isolation condenser relay replacement 6K8A & 6K8B on September 29, 2011 (R2118212/ R2180899)
- Planned maintenance on the containment spray heat exchangers 1-1 and 1-2 on October 19, 2011 (R2151529)
- 1-1 fire diesel operability test on October 12, 2011 (R2189620)
- V-28-28 following manually backseat and torque to the maximum allowable thrust value on November 21, 2011 (C2026279)
- V-14-33 post maintenance testing following backseat of the valve on November 21, 2011 (C2026279)
- 1-2 fire diesel following unplanned maintenance on December 22, 2011 (R2192771)

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 3 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs 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:

- Isolation condenser auto actuation test on October 3, 2011
- Containment spray and emergency service water pump system 1 operability and comprehensive/preservice/ post-maintenance inservice test on October 19, 2011 (in-service test)
- Unidentified leak rate surveillance on December 14, 2011 (RCS leak rate)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 sample)

.1 Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on October 5 which required emergency plan implementation by an operations crew. Exelon planned for this evolution to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that Exelon evaluators noted the same issues and entered them into the corrective action program.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

RS01 Access Control to Radiologically Significant Areas (71124.01 – 1 sample)

a. Inspection Scope

The inspectors reviewed Exelon's performance in assessing workplace radiological hazard and implementation of appropriate radiation monitoring and exposure control measures for individual and collective exposure. The review was compared to criteria contained in 10CFR20, technical specification and applicable corporate and station procedures. Specifically, the inspectors' conducted inspection activities in the following areas:

- Radiological Hazard Assessment: The inspectors interviewed workers and management to identify significant new radiological hazards on the site. The inspectors conducted walkdowns, performed independent radiation measurement, reviewed radiologically risk-significant work activities, and reviewed air sample survey results to verify that Exelon performed appropriate pre-work surveys and work monitoring to show that their programs were effective in protecting workers and identifying any changes in radiological hazards.
- Instructions to Workers: The inspectors toured the facility and evaluated containers holding nonexempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers to verify that they were properly labeled and controlled. The inspectors reviewed a sample radiation work permits for high radiation areas to verify that they contained appropriate stay times, permissible dose allowances and electronic personal dosimeter (EPD) alarm

setpoints. The inspectors reviewed instances where an EPD malfunctioned or alarmed to verify that workers responded properly to the off normal condition and that Exelon entered the event into the corrective action program and performed dose evaluations.

- Contamination and Radioactive Material Control: The inspectors evaluated the performance of personnel surveying and releasing potentially contaminated material at the Radiologically Controlled Area (RCA) access points, to verify that the surveys, procedures and equipment were sufficient to control the spread of contamination and to prevent unintended release of radioactive materials from the site.
- Radiological Hazards Control and Work Coverage: The inspectors reviewed Exelon procedures to verify that radiological controls, such as survey requirements and remote surveillance of jobs in progress were adequate. The inspectors verified that dosimeters were utilized effectively to monitor and record radiation worker exposure in the RCA and in high radiation areas. The inspectors reviewed radiological work permits for work within airborne radioactivity areas to evaluate airborne radioactive controls and monitoring, including potentials for significant airborne levels. The inspectors reviewed physical and programmatic controls for highly activated or contaminated materials (nonfuel) stored within the spent fuel pool to verify that appropriate administrative and physical controls were in place.
- Risk-Significant High Radiation Area (HRA) and Very High Radiation Area (VHRA) Controls: The inspectors interviewed the Radiation Protection Manager and supervisors to evaluate Exelon's controls and access procedures for high-risk high and very high radiation areas and any procedural changes since the last inspection.
- Radiation Worker Performance: The inspectors observed radiation workers to assess if their performance was commensurate with the level of radiation hazards that were present on the work site. The inspectors reviewed the corrective action program to identify human performance errors or trends as well as Exelon's actions to resolve them.
- Radiation Protection Technician Proficiency: The inspectors observed the performance of radiation protection technicians to evaluate if their performance was consistent with their training and qualifications. The inspectors reviewed the corrective action program, self assessments and program audits to evaluate Exelon's resolution of identified issues.

b. Findings

No findings were identified.

RS02 Occupational ALARA Planning and Controls (71124.02 – 1 sample)

a. Inspection Scope

The inspectors reviewed Exelon's performance to evaluate the process for maintaining individual and collective radiation exposure as low as is reasonably achievable (ALARA). The inspectors reviewed plant collective exposure history, current exposure trends, compared dose budgets to actual exposures for work activities, and ongoing or planned activities in order to assess current performance and exposure challenges.

b. Findings

No findings were identified.

RS03 In-Plant Airborne Radioactivity Control and Mitigation (71124.03 – 1 sample)

a. Inspection Scope

The inspectors reviewed the updated plant final safety analysis report (UFSAR) to identify areas of the plant designed as potential airborne radiation areas, their associated ventilation systems or airborne monitoring instrumentation. The inspectors reviewed Exelon's procedures for maintenance, inspection, and use of respiratory protection equipment including procedures for air quality maintenance.

- Self-Contained Breathing Apparatus (SCBA) for Emergency Use: The inspectors reviewed maintenance and surveillance records and physically inspected, SCBA units to verify that they were properly maintained and available for emergency use. The inspectors reviewed training and qualification records to verify that operators and those assigned emergency duties were adequately trained to use SCBAs.

b. Findings

No findings were identified.

RS04 Occupational Dose Assessment (71124.04 – 1 sample)

a. Inspection Scope

The inspectors reviewed and evaluated the Exelon's occupational dose assessment program to assess the accuracy and effectiveness of the Exelon's ability to measure occupational dose including internal dose.

- External Dosimetry: The inspectors evaluated Exelon's use of personnel dosimeters, to verify that they were National Voluntary Laboratory Accreditation Program (NVLAP) accredited.
- Internal Dosimetry: The inspectors reviewed routine bioassay (in vivo) procedures used to assess dose from internally deposited nuclides using whole body counting equipment.
- Shallow Dose Equivalent: The inspectors reviewed dose assessments and methodology for adequacy.

b. Findings

No findings were identified.

RS05 Radiation Monitoring Instrumentation (71122.05 – 1 sample)a. Inspection Scope

The inspectors evaluated Exelon's radiation monitoring instrumentation ensure the accuracy and operability of radiation monitoring instruments.

- Post-Accident Monitoring Instrumentation: The inspectors evaluated the calibration and maintenance records for of high-range effluent/process monitors relied on by Exelon in its emergency operating procedures.
- Calibration and Check Sources: The inspectors reviewed the latest 10 CFR Part 61 source term to determine if the calibration sources used were representative of the types and energies of radiation encountered in the plant.

b. Findings

No findings were identified.

Cornerstone: Public Radiation SafetyRS06 Radioactive Gaseous and Liquid Effluent Treatment (71124.06 – 1 sample)a. Inspection Scope

The inspectors reviewed Exelon's gaseous and liquid effluent control program through in-office preparation before the inspection to review annual reports and other available documentation.

- Groundwater Protection Initiative (GPI) Program: The inspectors reviewed reported groundwater monitoring results, remediation efforts, changes to the program for identifying and controlling contaminated spills/leaks to groundwater and walked down the remediation facility.
- Procedures, Special Reports & Other Documents: The inspectors reviewed Licensee Event Reports (LERs), event reports, and/or special reports related to the effluent program to identify any additional focus areas for the inspection based on the scope/breadth of problems described in these reports.
- Walkdowns and Observations: The inspectors reviewed Standby Gas Treatment System (SBGTS) surveillance test data and walked down portions of the system to assess the material condition and to verify that there were no conditions, improper alignment, or system installation issues that would impact the performance of the system. The inspectors reviewed the methodology Exelon used to determine the effluent stack and vent flow rates.

- Sampling and Analyses: The inspectors reviewed sampling records to determine if Exelon was routinely relying on the use of compensatory sampling in lieu of adequate system maintenance.
- Dose Calculations: The inspectors verified that the calculated monthly, quarterly, and annual doses were within the 10 CFR Part 50, Appendix I, and Technical Specification dose criteria. Additionally, the inspectors reviewed records of abnormal discharges to ensure that an evaluation was made of the discharge to satisfy 10 CFR 20.1501, and account for the source term and projected doses to the public.

b. Findings

No findings were identified.

RS07 Radiological Environmental Monitoring Program (REMP) (71124.07 – 1 sample)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental and effluent operating reports and the results of Exelon assessments since the last inspection, to verify that the REMP was implemented in accordance with the Technical Specification (TS) and the Offsite Dose Calculation Manual (ODCM).

- Site Inspection: The inspectors reviewed Exelon's assessment of any positive sample results and the associated radioactive effluent release data that was from the source of the released material. The inspectors reviewed any significant changes made by Exelon to the ODCM. The inspectors reviewed technical justifications and verified that Exelon performed reviews required to ensure that the changes did not adversely affect the ability to monitor the impacts of radioactive effluent releases on the environment.

b. Findings

No findings were identified.

RS08 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (1 sample)

a. Inspection Scope

The inspectors reviewed the implementation of the Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation Program to verify the effectiveness of Exelon's programs for processing, handling, storage, and transportation of radioactive material. The review considered requirements contained in 10 CFR Part 20, 49 CFR, applicable Exelon procedures, including the Process Control Program (PCP), and Technical Specifications.

- Radioactive Material Storage: The inspectors toured and evaluated facilities, including outdoor storage areas where containers of radioactive waste were stored.

The inspectors evaluated the material condition of the containers and verified that the containers and the storage areas were controlled, labeled, and posted in accordance with all requirements.

- Radioactive Material System Walkdown: The inspectors reviewed liquid and solid radioactive waste processing system procedures and viewed recent photographs or walked down accessible portions of systems to verify and assess conditions and configuration. The inspectors reviewed non-operational or abandoned radioactive waste processing equipment to verify establishment of administrative and/or physical controls of the equipment and reviewed audits and recent photographs of the equipment.
- Waste Characterization and Classification: The inspectors reviewed radioactive waste streams and the Quality Assurance (QA) to verify that sample analysis results, required by 10 CFR Part 61, were sufficient to support radioactive waste classification and characterization.
- Shipping Records: The inspectors selected one non-excepted package shipment (OC-4002-11) for record review and verified that the shipping documents contained the appropriate information and that the shipment was properly labeled.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Mitigating Systems Performance Index (5 - samples)

a. Inspection Scope

The inspectors reviewed Exelon's submittal of the Mitigating Systems Performance Index for the following systems for the period of October 1, 2010 through September 30, 2011:

- Emergency AC Power System
- High Pressure Injection System
- Heat Removal – Isolation Condensers
- RHR – Containment Spray
- Cooling Water System

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 6. The inspectors also reviewed Exelon's operator narrative logs, condition reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

.2 Occupational Exposure Control Effectiveness (1 - sample)

a. Inspection Scope

The inspector reviewed implementation of the Occupational Exposure Control Effectiveness PI Program. The inspector reviewed corrective action program records for occurrences involving HRAs, VHRAs, and unplanned personnel radiation exposures since the last inspection in this area. The review was against the applicable criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 6. The purpose of this review was to verify that occurrences that met NEI criteria were recognized and identified as Performance Indicators.

b. Findings

No findings were identified.

.3 RETS/ODCM Radiological Effluent Occurrences (1 - sample)

a. Inspection Scope

The inspectors reviewed the implementation of the Radiological Effluents Technical Specification/Offsite Dose Calculation Manual (RETS/ODCM) PI program. The inspectors reviewed corrective action program records and projected monthly and quarterly dose assessment results due to radioactive liquid and gaseous effluent releases for the past four complete quarters. The review was against the applicable criteria specified in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 6. The purpose of this review was to verify that occurrences that met NEI criteria were recognized and identified as Performance Indicators.

As part of this review, the inspectors also reviewed Exelon's evaluations and public dose assessments associated with identification of localized ground water contamination within the restricted area.

b. Findings

No findings were identified.

.4 Unplanned Power Changes per 7000 Critical Hours (1- sample)

a. Inspection Scope (71151)

The inspectors reviewed Exelon's submittal for the Unplanned Power Changes per 7000 Critical Hours performance indicators for both Unit 1 and Unit 2 for the period of April 1, 2010 through March 31, 2011. 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 6. The inspectors reviewed control room logs and plant process computer power history data, and compared that information to the data reported by the performance indicator.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 7 samples)

.1 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.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, as required by Inspection Procedure 71152, "Problem Identification and Resolution," to identify trends that might indicate the existence of more significant safety issues. In this review, the inspectors included repetitive or closely-related issues that may have been documented by Exelon outside of the corrective action program, such as trend reports, performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or corrective action program backlogs. The inspectors also reviewed Exelon's corrective action program database for the third and fourth quarters of 2011 to assess condition reports written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRCs daily condition report review (Section 4OA2.1).

b. Findings and Observations

No findings were identified.

The inspectors evaluated a sample of departments and issues to gain insights into any emerging or adverse trends. This review included a sample of issues and events that occurred over the course of the past two quarters, in addition to cause evaluations completed during past two quarters, to objectively determine whether issues were

appropriately considered or ruled as emerging or adverse trends, and in some cases, verified the appropriate disposition of resolved trends. For example, the inspectors noted an increased number of unexpected half scrams. The apparent cause report was reviewed by the residents for two unexpected half scrams on reactor protection system (RPS) system 2 on August 20 and 21, 2010 (IR 1104183). The apparent cause reports were also reviewed for an unexpected half scram on RPS system 1 occurring on September 29, 2011 (IR 1269662), a half scram on RPS 2 due to an inoperable APRM card (IR 1263961), and a half scram due to a LPRM spike (IR 1246795). A number of the unexpected half scrams occurred as a result of Nuclear Instrumentation Local Power Range Monitor (LPRM) failures. Licensee personnel had appropriately identified the Nuclear Instrumentation LPRM failures as a monitored trend with ongoing corrective actions (IR 1225305) to address this long-standing issue. The inspectors reviewed other monitoring programs that compliment the trending process, such as system health and performance indicators, and determined they appropriately identified the LPRM failures for further assessment.

.3 Annual Sample: Review of the Operator Workaround Program

a. Inspection Scope

The inspectors reviewed the cumulative effects of the existing operator workarounds, operator burdens, existing operator aids and disabled alarms, and open main control room deficiencies to identify any effect on the operator's ability to implement abnormal or emergency operating procedure actions, and any negative impact on possible initiating events and mitigating systems. The inspectors also evaluated whether station personnel had identified, assessed, and reviewed operator workarounds as specified in Exelon's procedure OP-AA-102-103, Operator Work-Around Program.

The inspectors reviewed Exelon's process to identify, prioritize and resolve main control room distractions to minimize operator burdens. The inspectors reviewed the system used to track these operator workarounds and recent Exelon self assessments of the program. The inspectors also toured the control room and discussed the current operator workarounds with the operators to ensure the items were being addressed on a schedule consistent with their relative safety significance.

b. Findings and Observations

No findings were identified.

The inspectors determined that the issues reviewed did not adversely affect the capability of the operators to implement abnormal or emergency operating procedures. The inspectors also verified that Exelon entered operator workarounds and burdens into the corrective action program at an appropriate threshold and planned or implemented corrective actions commensurate with their safety significance.

.4 Annual Sample: ND30-B leakby discovered during A reactor water cleanup (RWCU) filter troubleshooting

a. Inspection Scope

The inspectors performed an in-depth review of Exelon's prompt investigation and corrective actions associated with condition report 1278033, ND30-B leakby discovered during A RWCU (reactor water cleanup) filter TSAP (trouble shooting action plan). Specifically, while cycling filter isolation valves during troubleshooting on the A RWCU filter, leakby on the B filter isolation valves caused the B filter to isolate, which caused a reactor water level transient and a power excursion which exceeded the licensed thermal power limit.

The inspectors assessed Exelon's prompt investigation, operator actions, and the prioritization and timeliness of Exelon's corrective actions to determine whether Exelon was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Exelon's corrective action program and 10 CFR 50, Appendix B. In addition, the inspectors performed maintenance history reviews and interviewed engineering, chemistry and operations personnel to assess the effectiveness of Exelon's actions.

b. Findings and Observations

No findings were identified.

Exelon determined the cause of this event was backflow through the ND30B valve (precoat pump discharge valve to the B RWCU filter), which shares a common header with the ND30A valve (precoat pump discharge valve to the A RWCU filter). Exelon determined that there was undetected degradation of the valve which would not be readily apparent since the common header between A and B RWCU filters was isolated during normal operations and could not cause a system transient if there was leakby of either valve. When ND30A was opened during the troubleshooting procedure, leakby of ND30B became evident and caused the system transient.

The licensed operators responded appropriately by promptly lowering power when they noticed that thermal power was rising. Reactor thermal power peaked at 1946 MW, with a maximum licensed power limit of 1930 MW, and was above the licensed limit for less than one minute. Although the thermal power limit was exceeded, the inspectors determined that there was no regulatory violation of the licensed thermal power limit based upon guidance in NRC Regulatory Issue Summary 2007-21, Adherence to Licensed Power Limits. Specifically, the pre-planned evolution was not expected to increase power, the reactor power was below the licensed thermal limit at the start of the evolution and the operators monitoring power levels took prompt action to lower power below the licensed limit when power was noted to be above licensed limit.

The inspectors reviewed the maintenance history for ND30-B. This valve was overhauled in 1996 (C0505108). During post maintenance testing, Exelon noted that the position indicator stayed in the open position when the valve was shut. Exelon generated job order A0772599 to adjust the valve position limit switch to match the closed position of the valve. The inspectors noted that in the closure remarks for the overhaul work order, that maintenance personnel stated that the numerous punch marks on the valves made it difficult to match parts and valves during overhaul and installation. The inspectors observed that the potential existed that ND30-B was actually partially

open due to confusion created by the numerous matchmarks on the valve during reassembly and that the limit switch for valve position may have been adjusted to errantly indicate closed.

The inspectors noted that the A reactor water cleanup filter has not been available for use since 1996 and only the B filter has been in service. The A filter was not considered abandoned equipment as described in Exelon procedure CC-AA-109, Equipment Abandoned Via Operational Configuration Change, and fell under the classification of "spare equipment." Abandoned equipment is returned to service through the Engineering Change Request process. Spare equipment being returned to service follows no formal process besides normal startup and operating procedures. The inspectors observed that due to the length of time that the A filter had been idle, formal abandonment of the filter should have been considered. Although Exelon was using a complex troubleshooting plan to evaluate the condition of the A filter and associated equipment in order to return the filter to service, the engineering change request process may have provided a stronger framework to evaluate the state of all the affected components and identify the leakby of ND30-B.

The inspectors reviewed the classification of this event in accordance with Exelon procedure OP-AA-300-1540, Reactivity Management Administration. Exelon classified this event as a Level 4 Reactivity Management Precursor as the operators performed a downpower of greater than or equal to 0.5% due to an emergent issue, when they lowered power due to the power excursion. The inspectors observed that Exelon did not evaluate the rise in power when classifying this event. The inspectors observed that the peak power (1948 MW thermal) during the excursion prior to operators taking remedial action to lower power met the requirements for a Level 2 Major Reactivity Management Event for violation of a core thermal power license limit. Additionally, the power change caused by this event was approximately 0.9% and met the definition for a Level 3 Minor Reactivity Management Event for a change in reactor power of greater than or equal to 0.5% directly caused by equipment problems. Reactivity management events feed into corporate reactivity management performance indicators and are not part of the NRC regulatory performance indicators. The inspectors evaluated this as a record keeping issue of low significance and determined it as being a minor issue.

.5 Annual Sample: D reactor recirculation pump return to service

a. Inspection Scope

The inspectors performed an in-depth review of Exelon's apparent cause analysis and corrective actions associated with condition report 1262779, Power Change During D Recirc Pump Placed in Service. Specifically, an unplanned power excursion occurred when placing the D recirculation pump in service after scheduled maintenance.

The inspectors assessed Exelon's problem identification threshold, cause analyses, extent of condition reviews, compensatory actions, and the prioritization and timeliness of Exelon's corrective actions to determine whether Exelon was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Exelon's corrective action program and 10 CFR 50, Appendix B.

b. Findings and Observations

No findings were identified.

Exelon determined the most probable cause was due to less than adequate procedural guidance. Procedure 301.2, Reactor Recirculation System, did not provide explicit guidance to ensure operators would not exceed core thermal limits. Exelon determined that a contributing cause was not conducting just-in-time training prior to this evolution. Corrective actions for this event included a procedure change to give the operators more margin to the thermal power limits when manipulating reactor recirculation flow and actions to review the work schedule while specifically looking for opportunities for just-in-time training for operators.

The licensed operators responded appropriately by promptly lowering power when they noticed that thermal power was rising. Reactor thermal power rose above 1950 MW, with a maximum licensed power limit of 1930 MW, and was above the licensed limit for less than one minute. Although the thermal power limit was exceeded, the inspectors determined that there was no regulatory violation of the licensed thermal power limit based upon guidance in NRC Regulatory Issue Summary 2007-21, Adherence to Licensed Power Limits. Specifically, the pre-planned evolution was not expected to increase power above the licensed power limit, the reactor power was below the licensed thermal limit at the start of the evolution and the operators monitoring power levels took prompt action to lower power below the licensed limit when power was noted to be above licensed limit.

The inspectors reviewed the classification of this event in accordance with Exelon procedure OP-AA-300-1540, Reactivity Management Administration. Exelon classified this event as a Level 3 Reactivity Management Precursor for a change in reactor power of greater than or equal to 0.5% directly caused by equipment problems. The inspectors observed that Exelon did not appropriately evaluate the rise in power when classifying this event. The inspectors observed that the peak power (greater than 1950 MW thermal) during the excursion prior to operators taking remedial action to lower power met the requirements for a Level 2 Major Reactivity Management Event for violation of a core thermal power license limit. Reactivity management events feed into corporate reactivity management performance indicators but are not part of the NRC regulatory performance indicators. The inspectors evaluated this as a record keeping issue of low significance and determined it as being a minor issue.

The inspectors determined Exelon's overall response to the issue was commensurate with the safety significance, was timely, and included appropriate compensatory actions. The inspectors determined that the actions taken were reasonable to resolve both the immediate power excursion and the knowledge gap which led to the potential to exceed core thermal limits.

.6 Annual Sample: Torus pins

a. Inspection Scope

The inspectors reviewed the evidence of degradation of the structure supporting the torus sway bar struts generally referred to as a stanchion. The inspectors visually examined every stanchion looking for the degree of oxide exfoliation (.i.e., flakes-of-rust)

that filled the stanchion. The inspectors noted the presence of water in some stanchions, collateral evidence of degradation, captured in the open rectangular box formed by the thick stanchion membranes. The inspectors paid close attention to the condition of the six inch diameter pin, inserted between opposite walls of the open rectangular box that supports the vertical strut and allows for strut movement during an event. The inspectors reviewed the management of the aging effects to determine if the attributes of preventive actions, monitoring, detection, trending, acceptance criteria, corrective actions, confirmation, administrative controls, and operating experience were addressed.

In addition to a complete visual examination of all the stanchions, the inspectors reviewed various related documents and interviewed station personnel involved in the management of structural integrity. The inspectors compared the documented record and results of interviews with the corrective action's identification of root and contributing causes of the problem. The inspectors determined if the documented information was reported to appropriate levels of management. The inspectors reviewed the corrective action to determine if the corrective action was appropriately focused to correct the problem (and to address the root and contributing causes for significant conditions adverse to quality).

The inspectors reviewed the Exelon process to identify, prioritize and resolve the observed degradation. The inspectors reviewed the analysis, performed by Exelon, to determine the operability of the pins and performed an independent calculation to verify the conclusions. The corrective actions and planned actions were reviewed for rigor of evaluation and disposition of operability and reportability issues, consideration of extent of condition and cause, generic implications, common cause, and previous occurrences. The corrective actions were further reviewed to determine if the classification and prioritization of the problem's resolution was commensurate with the safety significance.

The inspectors further determined if the completion of corrective actions was in a timely manner commensurate with the safety significance of the issue. The inspectors considered if any delays in implementation were justified based on the safety significance of the issue. The inspectors considered if any permanent corrective actions required significant time to implement and if interim corrective actions and/or compensatory actions were identified and implemented to minimize the problem and/or mitigate its effects until the permanent action could be implemented.

Because Oyster Creek is operating with a renewed operating license, the inspectors compared the actions taken to the requirements of the Exelon corrective action program and 10 CFR Part 50, Appendix B, and NUREG 1800, Rev 2, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Appendix A.1, "Aging Management Review – Generic (Branch Technical Position RLSB-1)," in order to determine if the corrective actions, and proposed future actions met the standard for an appropriate aging management program.

b. Findings and Observations

No findings were identified.

The inspectors noted the amount of exfoliation contained in the stanchion did not visually correspond to the amount of material degraded from the pin. In many cases, the

Enclosure

inspectors noted the amount of exfoliation present in the stanchion could not be explained by the evidence of a smooth coating of light rust on the pin. This observation supports the licensee's plan to disassemble, clean, and inspect two strut supports with evidence of the most amount of degradation in order to determine conclusively the root cause of the exfoliation.

In summary, there was no indication of a potentially safety significant issue related to the preservation of design margins under the current licensing basis and aging management over the period of extended operation. Further, no trends were noted by the inspectors, in the examples and analysis selected from this specific corrective action for detailed review. The inspectors observed that Exelon staff implemented their corrective action process, following the stipulated program requirements regarding the initial discovery of the reviewed issue along with managing the effects of aging. The corrective actions for the identified degradation included developing a plan to verify the root cause of the degradation. The corrective action documentation, relative to the procedural requirements, was complete and included implemented and planned future corrective actions. In addition, the elements contained in the corrective action documentation consisted of detailed and thorough information. Interim corrective actions, such as performing ongoing system monitoring and trending, were structured to minimize potential failures pending system repair.

.7 Annual Sample: Review of root cause evaluation of procedure quality issues

a. Inspection Scope (71152 – 1 sample)

The inspectors reviewed Exelon's evaluation and corrective actions associated with IR 01205903 "Root Cause Evaluation: Procedure Quality Issues That Resulted in Five NRC Findings With the Common Cross-Cutting Aspect of Human Performance – Resource Documentation (H.2(c))." The inspectors reviewed the Root Cause Evaluation, procedures, CRs, and interviewed personnel related to the issue to ensure that the full extent of the issue was identified, appropriate evaluations were performed, and corrective actions were specified, prioritized and effective. The inspectors discussed this issue with station management.

b. Findings

No findings were identified.

The inspectors determined that the Root Cause Evaluation appropriately identified the root and contributing causes of the issue and that the corrective actions associated with the root and contributing causes were adequate, effective, and commensurate with the significance of the identified issues.

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

.1 Plant Events

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating

systems. The inspectors communicated the plant events 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.

- High hydrogen alarm in the C battery room on December 21, 2011

b. Findings

No findings were identified.

4OA5 Other Activities

.1 (Closed) Unresolved Item (URI) 05000219/2011-003-03: Difficulty in drawing a main condenser vacuum during plant startup due to water in 48 inch holdup line

In December 2010, Oyster Creek experienced an automatic reactor scram due to low condenser vacuum during startup from the 1F26 forced outage. Exelon performed a root cause analysis focused on operator performance issues related to the scram. The inspectors reviewed the root cause analysis and documented a finding and observation in section 4OA2 of resident quarterly inspection report 5000219/2011002. The inspectors noted that the root cause did not identify some contributors to the scram; specifically, that condenser vacuum did not respond as expected when a second set of air ejectors was placed in operation, and that an additional step in the startup procedure, which would have verified that there was adequate vacuum to secure the mechanical vacuum pump, had been signed off as complete when vacuum was actually below the required value. Exelon entered these observations into the corrective action program as assignment 2 of IR 1193110. The inspectors further observed that a similar event occurred in 2006 (IR 556890) where Oyster Creek experienced difficulty in drawing a condenser vacuum during startup and performed an equipment apparent cause evaluation (EACE). Due to the similarity of the 2006 and 2011 events, the inspectors reviewed the effectiveness of the corrective actions listed in IR 556890 in consideration of the reactor scram documented in IR 1193110.

The action items generated in IR 556890 included developing a preventive maintenance task for periodic replacement of V-7-29, a solenoid operated drain valve for the off gas system holdup line, and modification of the air extraction and off gas system startup procedure to include a flush of the holdup line drain line. The replacement of V-7-29 was determined to be required on a 4 year periodicity based upon the environmental conditions that the valve is subject to and the service life of the valve. The inspectors verified that this valve was last replaced in April 2007. The inspectors noted that the preventive maintenance task that causes the valve replacement was issued in April 2008 and the first scheduled replacement of the valve was scheduled for 4 years from that date instead of 4 years from the actual date of last replacement. The inspector notified work control personnel, who corrected the due date to April 2011 and documented their actions in IR 1227974. However Exelon was unable to replace the valve by that date and the next replacement is now scheduled for the upcoming 1R24 refueling outage,

which is approximately 5.5 years after the last replacement. Although this exceeds the 4 year replacement criteria specified in the preventive maintenance task, the valve was verified to be working correctly after it was found submerged in November 2010 as documented in IR 1140316. The inspectors reviewed several reactor startups and verified that the drain line was flushed in accordance with the modified startup procedure, including the startup from 1F26.

The inspectors reviewed vacuum system response during several startups since 2006. Although some vacuum anomalies were noted, the system response since the scram in December 2010 has been as expected. The inspectors interviewed the system engineer concerning maintenance practices, inspections and performance of the mechanical vacuum pump and steam jet air ejectors. The inspectors reviewed completed work packages and inspection results on the air ejectors and found that the last inspection showed them to be within tolerances. Exelon compared work procedures for the mechanical vacuum pump with those in the vendor's manual, reviewed the maintenance history, found no discrepancies and documented the results of their review in IR 1267198. The inspectors found that Exelon's actions were adequate. The inspectors did not identify any violations of NRC requirements. This unresolved item is closed.

.2 (Closed) Non-cited Violation (NCV) 0500219/2011503-01/Finding (FIN)
05000219/2011503-02: Changes to EAL Basis Decreased the Effectiveness of the Plan
without Prior NRC Approval

a. Inspection Scope

On September 12, 2011, the NRC transmitted a non-cited violation (NCV-EA-11-128) and a Green finding to Exelon related to a change Exelon made to the emergency action level (EAL) basis for EAL HU6, which introduced a decrease in effectiveness to Oyster Creek's Emergency Plan and resulted in a violation of the requirements stipulated in 10 CFR 50.54(q). Specifically, the licensee modified the EAL Basis in EAL HU6, Revision 0, which extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the Emergency Plan by reducing the capability to perform a risk significant planning function in a timely manner. The NCV and finding were described in detail in NRC Inspection Report No. 05000219/2011503.

In response to the NCV and finding, Exelon entered the issue into their corrective action program as IR 01184333 and subsequently implemented Revision 3 of the Oyster Creek Emergency Plan, which restored the EAL HU6 Basis to the Revision 10 (of the pre-Exelon Revision 0 Emergency Plan) guidance, thereby removing the decrease in effectiveness. The inspectors reviewed IR 01184333 and the revised version of the HU6 Basis, and discussed the corrective actions with the Oyster Creek Emergency Preparedness staff.

b. Findings and Observations

No findings were identified. The inspectors determined that Exelon's response and corrective actions were reasonable and appropriate to address the NCV and finding, and their underlying performance deficiency. The NRC considers the issue to be closed.

Enclosure

4OA6 Meetings, Including Exit

On January 23, 2012 the inspectors presented the inspection results to M. Massaro, 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.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

M. Massaro, Site Vice-President
R. Peak, Plant Manager
M. McKenna, Director, Operations
G. Malone, Director, Engineering
J. Dostal, Director, Maintenance
C. Symonds, Director, Training
D. DiCello, Director, Work Management
J. Barstow, Manager, Regulatory Assurance
T. Farenga, Radiation Protection Manager
M. Ford, Manager, Environmental/Chemistry
T. Keenan, Manager, Site Security
R. Skelsky, Senior Manager, Plant Engineering
H. Ray, Senior Manager, Design Engineering
G. Flesher, Shift Operations Superintendent
J. Chrisley, Regulatory Assurance Specialist
D. Moore, Regulatory Assurance Specialist
J. Kerr, Regulatory Assurance Specialist
M. Nixon, Effluents Chemist
J. Raby, Radiation Protection Supervisor
J. Renda, Manager, Performance Improvement
E. Tucker, Nuclear Oversight, Audits
K. Wolf, Radiation Protection Technical Manager
I. Abelev, Standby Gas Treatment System Manager
J. Bills, Environmental, Radioactive Waste Supervisor
D. Chernesky, Assistant Maintenance Director
J. Chrisman, Radioactive Waste Shipper
P. Deckman, Maintenance Manager
T. DiTaranto, Radioactive Waste Chemist
J. McCarthy, Senior Technical Specialist, Radiation Protection
J. Murphy, Radiological Engineering Manager

Others:

K. Tuccillo, Supervisor, Nuclear Environmental Engineering Section (NEES), New Jersey
Department of Environmental Protection (NJDEP) - Bureau of Nuclear Engineering
(BNE)
P. Schwartz, Nuclear Engineer, NEES, NJDEP, BNE

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATEDOpened/Closed

0500219/2011-005-01	NCV	Failure to Establish New Reference Values In Accordance with ASME Code
---------------------	-----	---

Closed

0500219/2011-003-03	URI	Difficulty in drawing a main condenser vacuum during plant startup due to water in 48 inch holdup line (Section 4OA5)
0500219/2011503-01	NCV	(Traditional Enforcement) Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval (4OA5)
0500219/2011503-02	FIN	Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval (4OA5)

LIST OF DOCUMENTS REVIEWED**Section 1R01: Adverse Weather Protection**Procedures

OP-OC-108-109-1001, Preparation for Severe Weather T&RM for Oyster Creek, Revision 12
 OP-AA-108-111-1001, Severe Weather and Natural Disaster Guidelines, Revision 6
 WC-AA-107, Seasonal Readiness, Revision 9
 OP-OC-108-109-1002, Cold Weather Freeze Inspection, Revision 4
 ABN-31, High Winds, Revision 16
 ABN-32, Abnormal Intake Level, Revision 18

Condition Report (IR)

1169462	1148348	1249177	1281142
---------	---------	---------	---------

Maintenance Orders (AR)

A2268453	C202046	A2266608	A2283781	A2289303
----------	---------	----------	----------	----------

Miscellaneous

Winter Readiness Work (Initial Cut) 2011

Section 1R04: Equipment AlignmentProcedures

308, Emergency Core Cooling System Operation, Revision 90
 307, Isolation Condenser System, Revision 116

Condition Report (IR)

861950	902105	906896	958378	977500	1210116
--------	--------	--------	--------	--------	---------

Maintenance Orders (AR)

R2151529	A2215767
----------	----------

Drawings

BR 2005, Emergency Service Water System Flow Diagram
 GE 148F740, Containment Spray System Flow Diagram
 GE 885D781, Core Spray System Flow Diagram
 GE 148F262, Emergency Condenser Flow Diagram

Miscellaneous

Oyster Creek Generating Station UFSAR 6.3.1.3, Core Spray System
 Oyster Creek Generating Station UFSAR 6.3.1.1, Isolation Condenser System
 Technical Specification 3.8, Isolation Condenser
 VM-OC-5001, Care and Operation of Isolation Condensers

Section 1R05: Fire ProtectionProcedures

ABN-29, Plant Fires, Revision 26
 101.2, Oyster Creek Site Fire Protection Program, Revision 67
 CC-AA-211, Fire Protection Program, Revision 4
 333, Plant Fire Protection System, Revision 106

Condition Reports (IR)

1266418	1302888
---------	---------

Work Orders (AR)

R2182583

Miscellaneous

Oyster Creek Generating Station Pre-Fire Plan: OB-FZ-6A, 480V Switchgear Room "A"
 Oyster Creek Generating Station Pre-Fire Plan: TB-FZ-11C, 4160V "A" & "B" Switchgear Room,
 Oyster Creek Generating Station Pre-Fire Plan: TB-FA-26, "C" Battery Room
 Oyster Creek Generating Station Pre-Fire Plan: OB-FZ-4, Turbine Bldg. – Cable Spreading
 Room (Old)
 Oyster Creek Generating Station Pre-Fire Plan: OB-FA-9, Main Office Building
 Fire Drill Scenario, Control Room Annex North Side Cable Room, dated December 14, 2011
 Fire Drill Record, dated December 15, 2011

Section 1R11: Licensed Operator Requalification ProgramMiscellaneous

Scenario 2612.CREW.11-6.01

Section 1R12: Maintenance Effectiveness**Procedures**

ER-AA-310, Implementation of Maintenance Rule, Revision 8
 ER-AA-310-1005, Maintenance Rule - Disposition Between (a)(1) and (a)(2), Revision 6
 LS- AA-125-1003, Apparent Cause Evaluation Manual, Revision 10
 ER-AA-310-1001, Maintenance Rule – Scoping, Revision 4

Condition Reports

1209785	1256323	1263961	1265584	1246795	1221247
1212538	1205117	1168802	1165865	1269662	1225305
1290803					

Miscellaneous

NEI 93-01, Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants
 Maintenance Rule Scoping Document for System 641, Reactor Protection System
 Maintenance Rule Scoping Document for System 621, Core Monitoring System
 Maintenance Rule Expert Panel Meeting Minutes, October 6, 2011
 Oyster Creek Generating Station Maintenance Rule Periodic (a)(3) Assessment, July 1, 2009 – June 30, 2011

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

101.2, Oyster Creek Site Fire Protection Program, Revision 67
 WC-OC-101-1001, On-Line Risk Management and Assessment, Revision 6

Condition Reports

1301461	1301745	1301581	1301933	1301514	1302134
---------	---------	---------	---------	---------	---------

Miscellaneous

Oyster Creek Spar Model Event and Condition Assessment, dated December 13, 2011

Section 1R15: Operability Evaluations**Procedures**

329, Reactor Building Heating, Cooling and Ventilation System, Revision 62
 101.2, Oyster Creek Site Fire Protection Program, Revision 67
 645.4.036, Fire Pump #2 Operability Test, Revision 18
 607.4.004, Containment Spray and Emergency Service Water Pump System 1 Operability and Comprehensive/Preservice/Post-Maintenance Inservice Test, Revision 75

Condition Report (IR)

1271279	1274871	1281326	1274974	1301461	1301745
1301581	1301933	1301514	1302134	1304907	1278683
1285841					

Maintenance Orders/Work Orders

R2189616	R2192771	A2292045	R2152668	C2026778	A2287794
----------	----------	----------	----------	----------	----------

Miscellaneous

Oyster Creek Generating Station UFSAR, Table 9.4-1, Reactor Building Heating and Ventilation System

OC-2011-OE-0007, Operability Evaluation

ASME OMa Code-1995 with the 1996 Addendum, Subsection ISTB, Inservice Testing of Pump in Light-Water Reactor Power Plants

725751-15, IST Pump Evaluation Form, dated October 19, 2011

1231326, NRC question regarding IST evaluation, dated November 3, 2011

1231326, NRC question regarding IST evaluation, dated November 15, 2011

VM-OC-0003, LN Pumps – Instruction Manual and Parts List

Jersey Central Power & Light Company letter, Oyster Creek Nuclear Generating Station Docket No. 50-219 Fire Protection Program, dated October 3, 1977

Flowserve Letter, Request Approval of Performance Test Containment Spray Pumps – model 8LN18, dated September 24, 2004

Branch Technical Position APCSB 9.5-1, Guidelines for Fire Protection for Nuclear Power Plants Docketed Prior to July 1, 1976

Oyster Creek Generating Station UFSAR, 6.3.1.1, Isolation Condenser System

Technical Specification 3.8, Isolation Condenser

ASME OM Code 1995 with 1996 Addenda, Subsection ISTB, Inservice Testing of Pumps in Light-Water Reactor Power Plants

Performance Trend Data for P-21-1A, dated October 25, 2011

NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants, Revision 1

Section 1R19: Post-Maintenance TestingProcedures

609.3.023, B Isolation Condenser Isolation Test and Calibration- B1 Sensors First, Revision 0

645.4.001, Fire Pump #1 Operability Test, Revision 65

609.4.001, Isolation Condenser valve Operability and In Service Test, Revision 72

312.9, Primary Containment Control, Revision 53

330, Standby Gas Treatment System, Revision 53

116, Surveillance Testing Program, Revision 88

651.4.001, "Standby Gas Treatment Auto Actuation Test", Revision 64

Condition Report (IR)

1270059	1281670	1275740	1275791	1250909	1285291
1280520	1226484	936805	1013381	1022923	1042439
1226484	1244702	1288845	1247722	1226935	

Maintenance Orders (AR)

2118212	2180899	2151529	M2287941	M2284181	C2026279
R219223	A2287516	A2279541	C2025943	R2149264	

Miscellaneous

ECR OC-11-00556, B IC Steam Inlet Valve V-14-33 Packing Leak

Drawing GU 3E-822-21-1000, Standby Gas Treatment Flow Diagram

Regulatory Guide 1.52, Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants

Oyster Creek Generating Station UFSAR 6.5, Fission Product Removal and Control Systems

SDBD-OC-822, System Design Basis Document for Reactor Building Ventilation System

C-1302-822-5360-045, SGTS Cooling Air Flow Requirement

Section 1R22: Surveillance TestingProcedures

609.3.113, Isolation Condenser Automatic Actuation Bistable Calibration and Test, Revision 21
 607.4.004, Containment Spray and Emergency Service Water Pump System 1 Operability and

Comprehensive/ Preservice/ Post-Maintenance Inservice Test, Revision 75

312.9, Primary Containment Control, Revision 53

ER-AB-331-1006, BWR Reactor Coolant System Leakage Monitoring and Action Plan, Revision
 2

Condition Report (IR)

1271676	1278683	1278795	1296997	1217663	1239335
1266282	1272246	1290256	1281326		

Work Orders (AR)

R2184316	R2152668	R2152668
----------	----------	----------

Miscellaneous

TPC-20111019-01, Temporary Procedure Change for, Containment Spray and Emergency
 Service Water Pump System 1 Operability and Comprehensive/ Preservice/ Post-
 Maintenance Inservice Test, Revision 75

ASME OM Code-1995 with the 1996 Addendum, Subsection ISTB, Inservice Testing of Pumps
 in Light-Water Reactor Power Plants

725752-15, IST Pump Evaluation Form for P-21-1A, dated October 19, 2011

NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants, Revision 1

VM-OC-0145, Rosemount Model 1151 Alpine Pressure Transmitters

Section 1EP6: Drill EvaluationMiscellaneous

Scenario 2612.CREW.11-6.01

Section RS01: Access Control to Radiologically Significant AreasProcedures

RP-AB-460, TIP Area Access Control, Revision 1

RP-AA-460, Controls for High and Locked High Radiation Areas, Revision 20

RP-AA-460-001, Control for Very High Radiation Areas, Revision 2

RP-AA-460-002, Additional High Radiation Area Control, Revision 0

RP-AA-460-003, Access to HRA/LHRA/VHRAS In Response to a Potential or Actual
 Emergency, Revision 1

RP-AA-461, Radiological Control for Contaminated Water Diving Operations, Revision 2

RP-AA-870-1002, Use of Vacuums in Radiological Controlled Areas, Revision 2

RP-OC-301-1001, Air Sample Collection and Analysis TRM, Revision 5

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

233.2, Drywell Access and Control During Fuel Movement, Revision 12

Miscellaneous

Radiation Work Permits – RWP 721, 731, 732, 740

High Radiation Area key control status- quarterly inventory, boundary validation, daily checks

Radiation Protection Audit Report NOSA-OYS-11-06

Focused Area Self-assessment 1134322-03
2011 Periodic Alpha Characterization

Section RS02: Occupational ALARA Planning and Controls

Miscellaneous

General Source Term data
Radiation Work permits and ALARA plans – RWP 721, 731, 732, 740

Section RS03: In-Plant Airborne Radioactivity Control and Mitigation

Procedures

RP-OC-826, Inspection of MSA Firehawk Mask Mounted Regulator SCBAs, Revision 5
RP-OC-827, Flow Testing of MSA Firehawk (MMR) SCBAs, Revision 2

Miscellaneous

Breathing Air Certification Test Data
Emergency Equipment SCBA Check-off
SCBA test data- packs 21, 27, 26, and 17
10 CFR 61 Waste Stream Analysis Report

Section RS04: Occupational Dose Assessment

Miscellaneous

Exposure Control and Dose Records
General Source Term data
Personnel Contamination Event Data
Personnel Intake Investigations

Section RS05: Radiation Monitoring Instrumentation

Miscellaneous

General Source Term data
High Range Effluent Monitor Set-point Bases

Section RS06: Radioactive Gaseous and Liquid Effluent Treatment

Procedures

EN-OC-408-4160, RGPP Reference Material for Oyster Creek Generating Station, Revision 4
CY-OC-120-900, Stack Effluent Sampling and Analysis, Revision 18
CY-OC-120-910, Turbine Building ventilation System Sampling, Revision 7
CYY-OC-120-920, AOG Building Effluent and Process Gas Sampling and Analysis, Revision 12
621.3.023, Stack RAGEMS Sample and Effluent Flow Calibration, Revision 23
621.3.034, Turbine Building RAGEMS and Effluent Flow Calibration, Revision 15
651.3.002, SBGTS Particulate Filter leak test, Revision, Revision 25
651.1.006, SBGTS Charcoal radioactive Methyl Iodine Removal test, Revision 20
651.2.004, SBGTS Electrical Test – Heater, Revision 12

Miscellaneous

Annual Effluent Release and Environmental Reports
Offsite Dose Calculation Manual (Rev. 5) and changes

Teledyne Brown 2nd Quarter Quality Assurance Report (January- June 2011)
 Chemistry Quality Assurance Laboratory Cross Check fourth quarter 2010
 Radiochemistry Cross Check Program results – second quarter 2009
 Service Water Radiation Monitor Set-point Calculation (OCGS-007)
 SBGTS test data
 10 CFR 61 Waste Stream Analysis Report 2011
 IE Bulletin 80-10 System List and Sample Plan
 Reports (various) - Routine Ground Water
 Report- Hydrogeology Investigation Report
 General Source Term Data

Section RS07: Radiological Environmental Monitoring Program (REMP)

Procedures

CY-AA-170-210, Potentially Contaminated System Controls program, Revision 0
 CY-OC-120-1105, Chemical Addition System Sample and Analysis Schedule, Revision 9
 CY-AA-130-201, Radiochemistry Quality Control, Revision 0
 CY-AA-170-1000, Radiological Environmental Monitoring Program and Meteorological
 Program Implementation, Revision 5
 RW-AA-100, Process Control Program for Radioactive Wastes, Revision 7

Miscellaneous

Annual Effluent Release and Environmental Reports
 Environmental TLD Calibration Data – Calibration Records
 Environmental TLD Read-out Data
 Global Dosimeter Fade Verification
 NUPIC Audit SA10-017, Mirion Technologies
 ISOLOC Sampler cycle data
 Mirion Technologies NPP Supplier Audit Report SA10-07

Section RS08: Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Procedures

351.4, Solid Radioactive Waste Operating Procedure, Revision 6

Miscellaneous

Radioactive Waste Facility Material Condition reports
 10 CFR 61 Waste Stream Analysis Report - 2011
 Radioactive Waste Shipment Data – OC-4002-11

Section 40A1: Performance Indicator Verification

Procedures

LS-AA-2001, Collecting and Reporting of NRC Performance Indicator Data, Revision 14
 LS-AA-2200, Mitigating System Performance Index Data Acquisition and Reporting, Revision 3

Miscellaneous

NEI 99-02, Rev. 6, Regulatory Assessment Performance Indicator Guideline
 Annual Radiological Environmental, Effluent Release Report- 2010
 2010-2011 Public Dose Projections

Offsite Dose Calculation Manual and changes
 Radiological Work Doses Greater than 100 millirem
 Oyster Creek MSPI Basis Document
 IE-03-Unplanned Power Changes per 7000 Critical Hours Frequently Asked Question, dated February 2011
 Oyster Creek Unit 1 - 4Q2011 - PI Data Elements (QR) Change File, dated January 19, 2012

Section 40A2: Problem Identification and Resolution

Procedures

202.1, Power Operation, Revision 124
 CC-AA-109, Equipment Abandoned Via Operational Configuration Change, Revision 5
 OP-AA-300-1540, Reactivity Management Administration, Revision 8
 MA-AA-716-004, Conduct of Troubleshooting, Revision 10
 OP-AA-108-105, Equipment Return to Service, Revision 4
 OP-AA-300, Reactivity Management, Revision 5
 OP-OC-300-1000, Reactivity Management Threat Management, Revision 1
 WC-AA-106, Work Screening and Processing, Revision 13
 AD-AA-101-1002, Writer's Guide for Procedures and T&RM, Revision 15
 AD-AA-101, Processing of Procedures and T&RMs, Revision 23
 303, Reactor Cleanup Demineralizer System, Revision 126
 WC-AA-104, Integrated Risk Management, Revision 17
 OP-AA-108-110, Evaluation of Special Tests or Evolutions, Revision 2
 OP-AA-102-103, Operator Work-around Program, Revision 3
 OP-AA-102-103-1001, Operator Burden and Plant Significant Decisions Impact Assessment Program, Revision 4
 301.2, Reactor Recirculation System, Revision 74
 OP-AA-100, Exelon Nuclear Conduct of Operations Manual, Revision 0
 ER-OC-450, Structures Monitoring Program, Revision 2

Condition Reports

1278033	1256951	1262193	1037619	1022511	1053577
1164020	1175089	1205823	1205903	1260868	1260916
1261018	1261657	1261681	1262324	1262379	1255309
1255312	1255329	1255201	1255196	1255198	1255357
1255377	1255376	1255186	1255187	1255403	1255192
1255341	1255206	1240319	1240326	1240330	1240331
1240347	1241299	1118826	1262779	1263600	556002
839033	1225305				

Work Orders (AR)

C5050108	C0061033	C2022135	A2285007	A2112538	A2275763
A2246733	PM99904	R2128839	R2132651	A2147360	

Drawings

GE 148F444, Clean Up Demineralizer System Flow Diagram, Revision 88

Miscellaneous

NRC Regulatory Issue Summary 2007-21, Adherence to Licensed Power Limits, Revision 1
 Safety Evaluation, NEI Guidance Document to Licensees on Complying with the Licensed Power Limit, dated October 8, 2008

NEI Position Statement, Guidance to Licensees on Complying with the Licensed Power Limit,
dated June 12, 2008
VM-OC-0155, Clean Up Filtration System Components Manual
Oyster Creek Generating Station UFSAR 5.4.8, Reactor Water Cleanup System
10CFR50.2, Definitions
Reactor Water Cleanup System, Revision 15
Operations Department Logs, dated October 18, 2011
Operator Burden Aggregate Assessment Form, Revision 0
Operators Challenge and Operator Work-around Plan of Day Report
NOSA-OYS-11-06, Radiation Protection Audit Report
1134322-03, Focused Area Self-assessment
Form #187-008 "RB Floor Elevation (-) 19"-6" – "Torus Outer Support Baseplate Pins", dated
July 8, 2011
ER-OC-450 Revision 0, Attachment 8, Form #R209138-01-04, "Structures and Components
Monitoring Report", "Area – Torus Room and Corner Rooms below El. 23' -6'", dated
October 29, 2006
AR 00556002 Report, "Structural Monitoring Deficiencies in Torus Supports", dated
November 10, 2006
R2132651, "Inspect Containment Internal Structures", dated November 30, 2010
AR 00839033, "(1R22 ISI) Tours Sway Brace Rust and Bolt Conditions", dated November 1,
2008
A2147360-03 "Verification of Torus Outer Support Baseplate Pin Capacity", dated August 4,
2011

Section 40A3: Followup of Events and Notices of Enforcement Discretion

Procedures

RAP-U7f, C Bat H2 HI, Revision 3
ABN-33, Toxic or Flammable Gas Release, Revision 8
EP-AA-1010, Radiological Emergency Plan Annex for Oyster Creek Station, Revision 3

Condition Report (IR)

1305669 1305713

Miscellaneous

Oyster Creek Generating Station Operations Log, dated December 21, 2011

Section 40A5: Other Activities

Procedures

325, Air Extraction and Off Gas System, Revision 66
201, Plant Startup, Revision 71

Condition Reports (IR)

556890	835872	1267198	1155520	1193110	578204
985777	993508	1062796	1197337	495114	1140316
1267198	1227974				

Work Orders (AR)

R2121215	R2182478	R2131041	A2207565	R2118340	A2211728
R2098257	R0800766	R2192716			

Miscellaneous

Component History Work Order Closure for V-7-29, dated March 31, 2011

Component History Work Order Closure for V-12-317, dated March 31, 2011