



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

November 2, 2010

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

SUBJECT: OYSTER CREEK GENERATING STATION - NRC INTEGRATED INSPECTION
REPORT 05000219/2010004

Dear Mr. Pacilio:

On September 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Oyster Creek Generating Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 19, 2010, with Mr. M. Massaro, Oyster Creek Generating Station Site Vice President, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified.

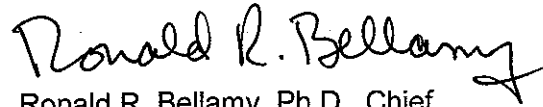
In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS).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

M. Pacilio

2

We appreciate your cooperation. Please contact me at (610) 337-5200 if you have any questions regarding this letter.

Sincerely,



Ronald R. Bellamy, Ph.D., Chief
Projects Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 05000219/2010004
w/Attachment: Supplemental Information

cc: Distribution via ListServ

M. Pacilio

We appreciate your cooperation. Please contact me at (610) 337-5200 if you have any questions regarding this letter.

Sincerely,
/RA/
Ronald R. Bellamy, Ph.D., Chief
Projects Branch 6
Division of Reactor Projects

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

cc: Distribution via ListServ

Distribution w/encl:

- W. Dean, RA (R1ORAMAIL Resource)
- M. Dapas, DRA (R1ORAMAIL Resource)
- D. Lew, DRP (R1DRPMAIL Resource)
- J. Clifford, DRP (R1DRPMAIL Resource)
- D. Roberts, DRS (R1DRSMAIL Resource)
- P. Wilson, DRS (R1DRSMAIL Resource)
- R. Bellamy, DRP
- S. Barber, DRP
- C. Newport, DRP
- N. Lafferty, DRP
- J. Kulp, DRP, SRI
- J. Ambrosini, DRP, RI
- J. DeVries, DRP, OA
- G. Miller, RI OEDO
- RidsNrrPMOysterCreek Resource
- ROPreportsResource@nrc.gov

SUNSI Review Complete: RRB (Reviewer's Initials)

ML103060033

DOCUMENT NAME: G:\DRP\BRANCH6\+++Oyster Creek\OC Inspection Reports 2010\OC Report 2010004.docx

After declaring this document "An Official Agency Record" it will 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	RI:DRP	RI:DRS	RI:DRP	
NAME	JKulp/ RRB for	CNewport/ CN	RBellamy/ RRB	
DATE	10/25/10	11/ 01/10	11/01/10	

OFFICIAL RECORD COPY

U. S. NUCLEAR REGULATORY COMMISSION**REGION I**

Docket No.: 50-219

License No.: DPR-16

Report No.: 05000219/2010004

Licensee: Exelon Nuclear

Facility: Oyster Creek Generating Station

Location: Forked River, New Jersey

Dates: July 1, 2010 – September 30, 2010

Inspectors: J. Kulp, Senior Resident Inspector
J. Ambrosini, Resident Inspector
C. Crisden, Emergency Preparedness Inspector

Approved By: Ronald R. Bellamy, Ph.D., Chief
Projects Branch 6
Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS	4
REPORT DETAILS	5
1. REACTOR SAFETY	6
1R01 Adverse Weather Protection	6
1R04 Equipment Alignment	6
1R05 Fire Protection	7
1R06 Flood Protection Measures	7
1R11 Licensed Operator Requalification Program	8
1R12 Maintenance Effectiveness	8
1R13 Maintenance Risk Assessments and Emergent Work Control	9
1R15 Operability Evaluations	9
1R18 Plant Modifications	10
1R19 Post-Maintenance Testing	11
1R22 Surveillance Testing	11
1EP2 Alert and Notification System (ANS) Evaluation	12
1EP3 Emergency Response Organization (ERO) Staffing and Augmentation System	12
1EP4 Emergency Action Level (EAL) and Emergency Plan Changes	12
1EP5 Correction of Emergency Preparedness Weaknesses	13
4. OTHER ACTIVITIES [OA]	13
4OA1 Performance Indicator Verification	13
4OA2 Identification and Resolution of Problems	14
4OA3 Event Followup	14
4OA6 Meetings, Including Exit	14
4OA7 Licensee-Identified Violations	15

ATTACHMENT: SUPPLEMENTAL INFORMATION	15
SUPPLEMENTAL INFORMATION	A-1
KEY POINTS OF CONTACT	A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED	A-1
LIST OF DOCUMENTS REVIEWED	A-1
LIST OF ACRONYMS	A-9

SUMMARY OF FINDINGS

IR 05000219/2010004; 07/01/2010 - 09/30/2010; Exelon Energy Company, LLC, Oyster Creek Generating Station; Integrated report.

The report covered a 3-month period of inspection by resident inspectors, and an emergency preparedness inspector. No findings were identified.

Enclosure

REPORT DETAILS

Summary of Plant Status

The Oyster Creek Generating Station (Oyster Creek) began the inspection period operating at 100% (full power).

On twenty-four occasions during the summer months operators performed unplanned power reductions of less than or equal to 20% power in accordance with operating procedures to maintain Oyster Creek's circulating water discharge temperatures below the environmental discharge permit requirements or to perform condenser backwash procedures to address degrading condenser vacuum conditions. These power reductions were of short duration and the plant returned to 100% power in each instance.

On four occasions during the summer months operators performed unplanned power reductions of greater than 20% power in accordance with operating procedures to maintain Oyster Creek's circulating water discharge temperatures below the environmental discharge permit requirements or to perform condenser backwash procedures to address degrading condenser vacuum conditions. These power reductions were of short duration and the plant returned to 100% power in each instance.

On August 1, operators performed a planned power reduction to 80% power to perform a rod pattern adjustment. The plant returned to full power later that day.

On August 10, operators performed an unplanned power reduction to 80% power to maintain the plant's circulating water discharge temperatures below Oyster Creek's environmental discharge permit requirements due to a trip of the #1 dilution pump. The plant returned to 100% power on August 10, following the start of the standby dilution pump.

On September 3, operators performed a planned power reduction to 80% power to perform a rod pattern adjustment and turbine valve testing. The plant returned to full power on September 4.

On September 13, operators performed a planned power reduction to 61% power to perform troubleshooting for a ground indication on the 125VDC, "A" non-safety related bus. The reason for the power reduction was for As Low as Reasonably Achievable (ALARA) occupational dose considerations when conducting troubleshooting in the condenser bay, which is a high radiation area during plant operations. The plant returned to full power on September 14.

On September 16, operators performed a planned power reduction to 64% power to perform repairs on grounds identified on the 125VDC, "A" non-safety related bus. The reason for the power reduction was for ALARA occupational dose considerations when conducting repairs in the condenser bay, which is a high radiation area during plant operations. The plant returned to full power on September 17.

Oyster Creek operated at full power for the remainder of the inspection period.

Enclosure

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope (2 samples)

The inspectors performed two site specific weather-related condition inspections.

The inspectors reviewed Exelon's preparations for Hurricane Earl from August 31 through September 2. The inspectors performed walkdowns of areas that could be potentially impacted by the weather conditions, such as the intake structure, diesel structure, and transformers, and verified that station personnel secured loose materials staged for outside work prior to the forecast high winds. The inspectors verified that Exelon monitored the approach of the storm according to applicable procedures and took appropriate actions as required.

The inspectors reviewed Exelon's response to the declaration of a tornado watch on September 28. The inspectors verified that Exelon monitored the approach of the storm according to applicable procedures and took appropriate actions as required.

Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope (3 samples)

The inspectors performed three partial equipment alignment inspections. The partial equipment alignment inspections were completed during conditions when the equipment was of increased safety significance such as would occur when redundant equipment was unavailable during maintenance or adverse conditions, or after equipment was recently returned to service after maintenance. The inspectors performed a partial walkdown of the following systems, and when applicable, the associated electrical distribution components and control room panels, to verify the equipment was aligned to perform its intended safety functions:

- Containment spray system 2 with containment spray system 1 unavailable for surveillance testing on July 7;
- #1 Emergency Diesel Generator (EDG) with #2 EDG inoperable for corrective maintenance on August 9; and
- 'B' Isolation condenser (IC) while 'A' IC unavailable for surveillances on September 27.

Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope (71111.05A 1 sample; 71111.05Q 6 samples)

The inspectors observed one plant fire drill and performed a walkdown of six plant areas to assess their vulnerability to fire.

The inspectors observed an unannounced fire drill on September 29 to assess the readiness of Exelon's fire brigade to respond to fires within the plant. The drill scenario involved a simulated fire in the 'C' safety related battery room. The inspectors attended Exelon's drill critique to evaluate its adequacy in assessing personnel performance in responding to the postulated fire.

During plant walkdowns, the inspectors observed combustible material control, fire detection and suppression equipment availability, visible fire barrier configuration, and the adequacy of compensatory measures (when applicable). The inspectors reviewed "Oyster Creek Fire Hazards Analysis Report" and "Oyster Creek Pre-Fire Plans" for risk insights and design features credited in these areas. Additionally, the inspectors reviewed corrective action program condition reports documenting fire protection deficiencies to verify that identified problems were being evaluated and corrected. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report. The following plant areas were inspected:

- RB-FZ-1F4, "Northeast corner room" on July 29;
- TB-FZ-11B, "Turbine Building Basement/Mezzanine North End" on September 1;
- OB-FZ-5, "Control Room" on September 3;
- OB-FZ-9, "Office Building" on September 3;
- RB-FZ-1D, "Reactor Building 51' Elevation" on September 17 and
- TB-FZ-11D, "Turbine Building Basement South End" on September 17.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope (2 samples)

The inspectors performed one internal flood protection inspection activity and one internal flood protection inspection activity associated with bunkers and manholes.

The inspectors performed an internal flood protection inspection activity in the northeast corner room of the reactor building which contains the containment spray system 1 pumps and heat exchangers. The inspectors performed a walkdown of the flood

barriers, floor drains, and floor sumps. The inspectors evaluated these items to determine if internal flood vulnerabilities existed and to assess the physical condition of the equipment and components in the northeast corner room. The inspectors reviewed preventative maintenance activities associated with flood protection equipment. The inspectors also reviewed Exelon's procedures related to flooding of the northeast corner room.

The inspectors performed an internal flood protection inspection associated with bunkers and manholes. Inspections of the startup transformer cable vault and four station blackout cable vaults were performed as they are subject to flooding and contained risk-significant cables. The inspectors performed walkdowns of these vaults to verify as-found water levels in the vaults and reviewed Exelon's photographs and documentation to verify the physical condition of the cables and cable supports. The inspectors also reviewed Exelon's actions to monitor cable degradation and actions to minimize water accumulation and submergence of medium voltage cables contained in these areas.

Documents associated with these reviews are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

a. Inspection Scope (1 sample)

The inspectors observed one simulator training scenario to assess operator performance and training effectiveness on September 1. The inspectors observed training scenario "2612.CREW.10-5.01". The inspectors assessed whether the simulator adequately reflected the expected plant response, operator performance met Exelon's procedural requirements, and the simulator instructor's critique identified crew performance problems. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope (2 samples)

The inspectors performed two maintenance effectiveness inspection activities. The inspectors reviewed the following degraded equipment issues in order to assess the effectiveness of maintenance by Exelon:

- Control Room/Cable spreading room HVAC (IR 759293) on August 6; and
- Drywell equipment drain tank (IR 1110290) on September 9.

The inspectors also verified that the systems or components were being monitored in accordance with Exelon's maintenance rule program requirements. The inspectors compared documented functional failure determinations and unavailable hours to those being tracked by Exelon. The inspectors reviewed completed maintenance work orders and procedures to determine if inadequate maintenance contributed to equipment performance issues. The inspectors also reviewed applicable work orders, corrective action program condition reports, operator narrative logs, and vendor manuals. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope (5 samples)

The inspectors reviewed five on-line risk management evaluations through direct observation and document reviews for the following plant configurations:

- Risk evaluation on core spray system check valves due to missed surveillances on August 26;
- #2 emergency diesel generator inoperable due to an overspeed trip on August 9;
- Master automatic recirculation speed control unavailable due to unplanned maintenance on August 19;
- Core spray system #2 unavailable due to planned maintenance and receipt of spurious half-scrams on reactor protection system #2 on August 23; and
- Declaration of tornado watch with O-1029 offsite power line unavailable for Jersey Central Power and Light (JCPL) planned maintenance on September 28.

The inspectors reviewed the applicable risk evaluations, work schedules, and control room logs for these configurations to verify the risk was assessed correctly and reassessed for emergent conditions in accordance with Exelon's procedures. Exelon's actions to manage risk from maintenance and testing were reviewed during shift turnover meetings, control room tours, and plant walkdowns. The inspectors also used Exelon's on-line risk monitor (Paragon) to gain insights into the risk associated with these plant configurations. Additionally, the inspectors reviewed corrective action program condition reports documenting problems associated with risk assessments and emergent work evaluations. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (4 samples)

The inspectors reviewed four operability evaluations for degraded or non-conforming conditions associated with:

- Water in the turbine building radioactive gaseous environmental monitoring system (RAGEMS) filter cartridge on July 16 (IR 1091519);
- Average power range monitor (APRM) #1 did not insert half-scrum during surveillance testing on August 7 (IR 1099066);
- #1 EDG cooling fan shaft pillow-block bearing failure evaluation on July 27 (IR 1078312); and
- Core spray system check valves past surveillance dates on August 13 (IR 1097964).

The inspectors reviewed the technical adequacy of the operability evaluations to ensure the conclusions were technically justified. The inspectors also walked down accessible portions of equipment to corroborate the adequacy of Exelon's operability evaluations. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

Introduction. The inspectors identified an unresolved item (URI) to review Exelon's equipment apparent cause evaluation (EACE) for the #1 EDG cooling fan shaft pillow-block bearing failure to determine whether a performance deficiency exists that was within Exelon's ability to foresee and prevent. The inspectors will review Exelon's EACE when it is complete, which had not occurred by the end of this inspection period.

Description. During the routine overhaul and inspection of the #1 EDG on June 8, maintenance personnel noticed damage to the cooling fan shaft pillow-block bearing. Exelon removed the bearing for further analysis by an offsite lab and replaced the bearing and shaft with new components on June 9. Exelon entered this issue into their corrective action program as IR 1078312 and IR 1103610 and is performing an EACE to review the offsite lab report to determine the cause of the failure and any additional corrective actions. **(URI 05000219/2010004-01: EDG Pillow-Block Bearing)**

1R18 Plant Modifications (71111.18)

a. Inspection Scope (1 temporary modification sample)

The inspectors reviewed one temporary plant modification that was implemented by Exelon personnel at Oyster Creek. The inspectors reviewed the following modification:

- Temporary configuration change package (TCCP) to lift lead to lock in electromatic relief valve (EMRV) open alarm (ECR 10-00284) on August 17.

The inspectors reviewed the engineering/procedure change packages, design basis, and licensing basis documents associated with each of the modifications to ensure that the systems associated with each of the modifications would not be adversely impacted by the change. The inspectors walked down portions of the systems associated with the modification when applicable and prudent. The inspectors reviewed the modifications to ensure they were performed in accordance with Exelon's modification process. The inspectors also ensured that revisions to licensing/design basis documents and operating procedures were properly revised to support implementation of the modification. The inspectors also reviewed Exelon's 10 CFR 50.59 screening for this modification. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)a. Inspection Scope (7 samples)

The inspectors observed portions of and/or reviewed the results of seven post-maintenance tests for the following equipment:

- V-21-17 stem lubrication and packing retorque on July 7 (R2126779);
- Standby gas treatment system #2 filter replacement on August 2 (C2023814);
- Replacement of #2 EDG overspeed trip switch on August 8 (C2024062);
- V-28-23 replacement on August 19 (R2119622);
- Core spray system 2 relay replacement and oil change on August 25 (R2163871);
- V-14-30 stem lubrication and packing retorque on September 29 (R2142502);
- 'E' EMRV pressure switch replacement on September 24 (R2119341).

The inspectors verified that the post-maintenance tests conducted were adequate for the scope of the maintenance performed and that they ensured component functional capability. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)a. Inspection Scope (2 In-service test (IST) samples and 2 routine surveillance samples)

The inspectors observed portions of and/or reviewed the results of four surveillance/IST tests:

- Reactor building to suppression chamber self actuating vacuum breaker surveillance test and IST on July 1;
- Containment spray and emergency service water system 1 pump operability, IST and containment spray pump trip surveillance on July 7;
- Reactor coolant system (RCS) leak detection surveillance on July 15; and
- Automatic scram contactor surveillance on August 30.

The inspectors verified that test data was complete and met procedural requirements to demonstrate that the systems and components were capable of performing their intended function. The inspectors also reviewed corrective action program condition reports that documented deficiencies identified during these surveillance tests. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP2 Alert and Notification System (ANS) Evaluation

a. Inspection Scope (71114.02 - 1 Sample)

The inspectors conducted an onsite review to assess the maintenance and testing of the Oyster Creek alert and notification system (ANS). During the inspection, the inspectors reviewed the Federal Emergency Management Agency (FEMA) design report to ensure Exelon's compliance with design report commitments, the system maintenance and test records, and applicable ANS procedures. The planning standards contained in 10 CFR 50.47(b)(5) and the related requirements of 10 CFR 50 Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization (ERO) Staffing and Augmentation System

a. Inspection Scope (71114.03 - 1 Sample)

The inspectors reviewed Oyster Creek's emergency response organization (ERO) augmentation staffing requirements, training program, and the process for notifying and augmenting the ERO. This was performed to ensure the readiness of key licensee staff to respond to an emergency event and to ensure Exelon's ability to activate their emergency facilities in a timely manner. The inspectors reviewed Oyster Creek's ERO duty roster, sampling of training records, call-in reports, applicable procedures, and condition reports (CR) related to the ERO staffing augmentation system. The planning standards contained in 10 CFR 50.47(b)(2) and related requirements of 10 CFR 50 Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope (71114.04 - 1 Sample)

Since the last NRC inspection of this program area, Exelon implemented changes to their emergency action levels (EAL), emergency plan and implementing procedures. Exelon had determined that, in accordance with 10 CFR 50.54(q), any change made to the plan, and its lower-tier implementing procedures, had not resulted in any decrease in effectiveness of the emergency plan, and that the revised emergency plan continued to meet the standards in 50.47(b) and the requirements of 10 CFR 50 Appendix E.

The inspectors reviewed all EAL changes and a sample of emergency plan changes to evaluate any potential decreases in effectiveness of the emergency plan. However, this review by the inspectors was not documented in an NRC Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. The requirements contained in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses

a. Inspection Scope (71114.05 - 1 Sample)

The inspectors reviewed Exelon's Corrective Action Program (CAP) procedure for evaluating their EP program and performance. The inspectors reviewed a sampling of drill reports, self assessment reports, 10 CFR 50.54(t) audits, and EP-related CRs from drills and audits. The inspectors assessed Exelon's response to and documentation of two actual declarations of Unusual Events which occurred on February 1, 2009 and July 12, 2009. The planning standards contained in 10 CFR 50.47(b)(14) and the related requirements of 10 CFR 50 Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope (5 Samples)

The inspectors reviewed performance indicator (PI) data associated with five PIs. The inspectors used the guidance provided in Nuclear Energy Institute (NEI) 99-02, Revision 6, "Regulatory Assessment Performance Indicator Guideline" to assess the accuracy and completeness of the PI data reported by Exelon between July 1, 2009 and June 30, 2010. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

The inspectors reviewed the following PIs:

- Drill and exercise performance (DEP);
- Emergency Response Organization (ERO) drill participation;
- Alert and notification system (ANS);
- Reactor coolant system activity (RCSA); and
- Reactor coolant system identified leak rate (RCSL).

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152).1 Review of Items Entered Into the Corrective Action Program

The inspectors performed a daily screening of items entered into Exelon's corrective action program to identify repetitive equipment failures or specific human performance issues for follow-up. This was accomplished by reviewing hard copies of each condition report, attending daily screening meetings, or accessing Exelon's computerized database.

Assessment and Observations

No findings of significance were identified.

4OA3 Event Followup (71153) (1 sample)

The inspectors performed one event follow-up inspection activity. Documents reviewed for this inspection activity are listed in the Supplemental Information attached to this report.

.1 Drywell Unidentified Leak Rate Increasea. Inspection Scope

On September 7, operators noted that drywell unidentified leak rate (UILR) rose to a peak of 2.63 gpm from its prior value, which had been trending from 0.92 to 1.02 gpm. Exelon determined that the problem was a result of a failed open valve in the drywell equipment drain tank recirculation line and installed a temporary modification (ECR 10-00530) to correct the problem. The UILR subsequently returned to its previous values.

The inspectors verified that operations personnel responded in accordance with procedures and equipment responded as intended by reviewing the completed procedures, control room narrative logs, corrective action program condition reports, and through interviews of operations personnel. The inspectors also reviewed technical specification requirements to ensure that Oyster Creek was operated in accordance with its operating license. The inspectors performed a walkdown of the main control room panels and indications to verify equipment status and plant parameters. The UILR increase is described and evaluated in corrective action program condition report IR 1110290.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Resident Inspector Exit Meeting. On October 19, the inspectors presented their overall findings to members of Exelon's management led by Mr. M. Massaro, (Site Vice President), and other members of his staff who acknowledged the findings. The inspectors confirmed that proprietary information was not retained at the conclusion of the inspection period.

Commissioner Site Visit. On August 31, a site visit was conducted by Mr. William Magwood, Commissioner for the Nuclear Regulatory Commission and Mr. Martin Virgilio, Deputy Executive Director for Operations. During Mr. Magwood's visit, he toured the plant and met with Exelon managers. Mr. Marc Dapas, Acting Regional Administrator (RA) for the NRC Region 1 office, accompanied Mr. Magwood on his visit.

40A7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

M. Massaro, Site Vice-President
P. Orphanos, Plant Manager
D. Dicello, Director, Work Management
J. Dostal, Director, Operations
A. Farenga, Emergency Preparedness Manager
R. Peak, Director, Engineering
R. Reiner, Director, Training
P. Colgan, Director, Maintenance
J. Barstow, Manager, Regulatory Assurance
T. Keenan, Manager, Security
R. Wiebenga, Senior Manager, System Engineering
H. Ray, Senior Manager, Design Engineering
M. McKenna, Shift Operations Superintendent
D. Peiffer, Manager, Nuclear Oversight
J. Kerr, Manager, Corrective Action Program
M. Ford, Manager, Environmental/Chemistry Manager
J. Renda, Manager, Radiation Protection
K. Barnes, Regulatory Assurance Specialist

Others:

State of New Jersey, Bureau of Nuclear Engineering

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000219/2010004-01 URI EDG Pillow-Block Bearing (Section 1R15)

LIST OF DOCUMENTS REVIEWED

In addition to the documents identified in the body of this report, the inspectors reviewed the following documents and records.

Section 1R01: Adverse Weather Protection

Procedures

OP-OC-108-109-1001, "Preparation for Severe Weather T&RM for Oyster Creek"
OP-OC-108-109-1004, "Hurricane Staffing T&RM for Oyster Creek"
OP-AA-108-111-1001, "Severe Weather and Natural Disaster Guidelines"
WC-AA-107, "Seasonal Readiness"
OP-OC-108-1001, "Preparation for Severe Weather T&RM for Oyster Creek"
ABN-31, "High Winds"

Condition Reports (IR)
1118951

Section 1R04: Equipment Alignment

Procedures

- 310, "Containment Spray System Operation"
- 307, "Isolation Condenser System"
- 609.3.002, "Isolation Condenser Isolation Test and Calibration – A1/B1 Sensors First"

Drawings

- GE 148F740, "Flow Diagram - Containment Spray System"

Section 1R05: Fire Protection

Procedures

- ABN-29, "Plant Fires"
- 101.2, "Oyster Creek Site Fire Protection Program"
- CC-AA-211, "Fire Protection Program"
- 333, "Plant Fire Protection System"

Other Documents

- RB-FZ-1F4, Oyster Creek Generating Station Pre-Fire Plan, "NE Corner Room"
- RB-FZ-1D, Oyster Creek Generating Station Pre-Fire Plan, "51' Elevation"
- TB-FZ-11B, Oyster Creek Generating Station Pre-Fire Plan, "Turbine Building Basement/Mezzanine (0'-0" Elevation) North End (27' 0" Elevation)"
- TB-FZ-11D, Oyster Creek Generating Station Pre-Fire Plan, "Basement Floor South End (3' 6" Elevation)"
- OB-FZ-5, Oyster Creek Generating Station Pre-Fire Plan, "Control Room"
- OB-FZ-9, Oyster Creek Generating Station Pre-Fire Plan, "Office Building"
- TB-FA-26, Oyster Creek Generating Station Pre-Fire Plan, "C' Battery Room"
- Fire Drill Scenario, "C Battery Room Fire", dated September 29, 2010

Section 1R06: Flood Protection Measures

Procedures

- MA-OC-773-001, "Testing/Condition Monitoring of Inaccessible Medium Voltage Cables not Subject to 10CFR50.49 Environmental Qualification"
- ER-AA-3003, "Cable Condition Monitoring Program"
- MA-AA-723-500, "Inspection of Non-EQ Cables and Connections for Managing Adverse Localized Environments"
- 117.3, "Alternate AC System Reliability Monitoring"

Drawings

- GE 148F740, Containment Spray System
- GU 3D-153-07, 001, General Arrangement Floor and Equipment Drains – Reactor Building

Condition Reports (IR)

852474	828327	828338	890453	373114	1086111
1066334	1076306	1113908	330592		

Work Orders (AR)

R2095953	R2139427	R2162105	R2103165	A2193092	A2193908
A2193907	A2187171	A2073455	R2116819	R2139427	R2146232
R2157294	R2153284				

Other Documents

Oyster Creek Nuclear Generating Station UFSAR section 9.3.3.2.2, "Reactor Building Floor and Equipment Drains"
RB-FZ-1F4, Oyster Creek Generating Station Pre-Fire Plan, "NE Corner Room"
Design and Licensing Basis for Flooding at OCGS
Internal Flood Evaluation Summary and Notebook – Oyster Creek Nuclear Generating Station EQIS-315403-003, "Flooding due to HELBs Outside Containment"
TDR 779, "Evaluation of Possible Internal Flooding of Oyster Creek Nuclear Generating Station Power Plant Buildings"
C-1302-822-E610-076, "Flooding due to HELBs Outside Containment"
Oyster Creek Generating Station License Renewal Application Section B.1.36, "Inaccessible Medium-voltage Cables not subject to 10CFR50.49 Environmental Qualification Requirements"
Exelon letter, "Response to NRC Generic Letter 2007-01, "Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients"", dated May 7, 2007
Exelon Letter, "Exelon Generation Company, LLC/AmerGen Energy Company, LLC Response to the Request for Additional Information (RAI) Regarding Resolution of NRC Generic Letter 2007-01, "Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients"", dated December 7, 2007
Report # 2009-09, "Cable System Assessment Provided for Exelon Oyster Creek Nuclear Generating Station, Forked River, NJ, February 24- March 5, 2009"
System Engineer Spreadsheet of Cablewise Testing Results, updated for 2010
Oyster Creek Nuclear Generating Station UFSAR, Section 8.3.4, "Station Blackout"
USNRC Letter, "Safety Evaluation – Station Blackout Analysis Oyster Creek Nuclear Generating Station (TAC NO. 68577)", dated August 23, 1991
USNRC Letter, "Supplemental Safety Evaluation (SSE) –Oyster Creek Nuclear Generating Station Blackout Rule (TAC NO. 68577)", dated February 12, 1992
USNRC Regulatory Guide 1.155, "Station Blackout"

Section 1R11: Licensed Operator Requalification Program

Other Documents

EOP User's Guide (2000-BAS-3200.02)
2612.CREW.10-5.01

Section 1R12: Maintenance Effectiveness

Procedures

ER-AA-310, "Implementation of Maintenance Rule"
ER-AA-310-1005, "Maintenance Rule - Disposition Between (a)(1) and (a)(2)"
LS AA-125-1003, "Apparent Cause Evaluation Manual"
351.2, "High Purity Waste System"
OP-AA-102-103, "Operator Work-Around Program"
ER-AB-331-1006, "BWR Reactor Coolant System Leakage Monitoring and Action Plan"

Drawings

JC 147434, "Sump and Waste Collection System"

Condition Reports (IR)

744793	749568	754608	790158	804233	940266
967366	1008461	1055518	1080887	1098953	1110290
1110762					

Work Orders (AR)

A0700924	A0705758	C0528074	C2002414	C2019099	C2024198
R0800924					

Other Documents

NEI 93-01, "Industry Guideline for monitoring the Effectiveness of Maintenance at Nuclear Power Plants"

Oyster Creek Generating Station Technical Specification 3.3.D, "Reactor Coolant System Leakage"

ECR 10-00530

Section 1R13: Maintenance Risk Assessments and Emergent Work ControlProcedures

ER-AA-600-1042, "On-line Risk Management"

ER-AA-600-1021, "Risk Management Application Methodologies"

ER-AA-600-1014, "Risk Management Configuration Control"

ER-AA-600-1011, "Risk Management Program"

WC-OC-101-1001, "On-line Risk Management and Assessment"

2400-SMI-3422.02, "Digital FW and Recirc Speed Control System Maintenance"

WC-AA-104, "Integrated Risk Management"

ER-AA-600-1045, "Risk Assessments of Missed or Deficient Surveillances"

Condition Report (IR)

1102779	1056730	1093256
---------	---------	---------

Work Orders (AR)

C2024102

Other Documents

Oyster Creek Generating Station Technical Specification Section 4, "Surveillance Requirement Applicability"

OC-SURV-01, "Risk Analysis for Missed Surveillance, Failure to Open and Inspect Core Spray Main Pump Discharge Check Valves"

Section 1R15: Operability EvaluationsProcedures

OP-AA-108-115, "Operability Determination"

620.4.002, "APRM Surveillance Test – Front Panel Check"

ABN-39, "RPS Failures"

LS-AA-125-1003, "Apparent Cause Evaluation Manual"

MA-OC-861-101, "Diesel Generator Inspection (24 Month) – Mechanical"

MA-OC-86103-100, "Diesel Generator Fan Belt Replacement"

Drawings

GU-3E-661-21-1001, "Radiation Monitor System, RAGEMS II, Turbine Building"

Condition Reports (IR)

1093256	1056730	1097964	1091519	1099444	658467
814754	1099066	1100447	1093120	1099180	1089395
1103610	1078312	370560	1081766	1078411	

Work Orders (AR)

A2256877	R2165933	A2255578	C2023739	R2017655	R2085970
R2125850	A2089090	R2096800	R2113198		

Other Documents

NRC Inspection Manual - Part 9900 Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety"

NRC Letter, "Safety Evaluation of the Inservice Testing Program Relief Requests for Pumps and Valves, Oyster Creek Nuclear Generating Station", dated September 24, 1992

NRC Letter, "Safety Evaluation of the Inservice Testing (IST) Program Relief Requests for Pumps and Valves, Oyster Creek Nuclear Generating Station", dated August 14, 1993

GL 89-04, "Guidance on Developing Acceptable Inservice Testing Programs"

Oyster Creek Nuclear Generating Station Technical Specification 4.4, "Emergency Cooling"

ASME OM Code-1995, "Code for Operation and Maintenance of Nuclear Power Plants"

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

Oyster Creek Generating Station Technical Specification Table 3.1.1, "Protective Instrumentation Requirements"

OYS-99753, Exelon PowerLabs report, "Failure Evaluation of the No. 1 Emergency Diesel Generator Cooling Fan Shaft Pillow-Block Bearing, EMD General Motors"

M.I.1200, "Maintenance Instruction – MP45 Cooling Fan and Related Drive Train Assembly"

Section 1R18: Plant ModificationsProcedures

LS-AA-104-1001, "50.59 Review Coversheet Form"

ABN-40, "Stuck Open EMRV"

Condition Report (IR)

1083235	1072166	1064669
---------	---------	---------

Work Order (AR)

C2022310

Other

OC-2010-S-0080, 50.59 Screening form for ECR 10-00284

Oyster Creek Nuclear Generating Station UFSAR section 6.3.1.2, "Automatic Depressurization System"

Oyster Creek Nuclear Generating Station UFSAR section 6.3.2.2, "Equipment and Component Description"

Oyster Creek Nuclear Generating Station UFSAR section 7.3.1.3.5, "Automatic Depressurization System"

Oyster Creek Nuclear Generating Station UFSAR section 7.3.5.2, "Non-RPS Systems"

Section 1R19: Post-Maintenance TestingProcedures

MA-AA-716-012, "Post Maintenance Testing"

OP-MA-109-101, "Clearance and Tagging"

607.4.014, "Containment Spray and ESW System 1 Pump Operability, IST and Containment Spray Pumps Trip"

MA-OC-741-101, "Diesel Generator Inspection (24 Month) – Electrical"

636.4.013, "Diesel Generator #2 Load Test"

334, "Instrument and Service Air System"

651.3.002, "SGTS Particulate Filter In-Place Leak Test"

610.4.022, "Core Spray System 2 Pump Operability and Quarterly In-Service Test"

ER-AA-321, "Administrative Requirements for Inservice Testing"

609.4.001, "Isolation Condenser Valve Operability and In-Service Test"

602.3.004, "Electromatic Relief Valve Pressure Sensor Test and Calibration"

Drawings

EM 8397907 Sheet 3, "Emergency Diesel Generator #2 Electrical Elementary Wiring Diagram, DG DC Control Circuits"

GE 885D781, "Core Spray System Flow Diagram"

GE 729E182, "Elementary Diagram, Auto Depressurization System"

Condition Report (IR)

794100	1099299	1096095	1096375	1027679	531101354
1105435	553984	553996	587926	618201	660529
1062804					

Work Order (AR)

R2126779	R2146198	C2024062	C2010504	A2256817	R2166827
C2023814	R2163871	R2119622	R2142502	R2119341	R2119343

Other

VM-OC-0096, "Engine Maintenance Manual – 645E4 Turbo Charge Engine (Diesel Generators)"

Safety Evaluation 00212-036, "Core Spray System Operability Criteria"

Safety Evaluation 00212-046, "Core Spray Main Pump Operability Criteria"

Safety Evaluation 00212-061, "Core Spray System 2 Main Pump Operability Criteria"

ECR 02-00927

GL 88-14, "Instrument Air Supply System Problems Affecting Safety-Related Equipment"

GPU Nuclear letter, "Generic Letter 88-14", dated February 21, 1989

Safety Evaluation 000212-029, "EMRV Setpoint and Tolerance"

Oyster Creek Generating Station Technical Specification 2.3(D), "Limiting Safety System Settings, Reactor High Pressure, Relief Valves Initiation"

Section 1R22: Surveillance TestingProcedures

SA-AA-129, "Electrical Safety"

MA-AA-1000, "Conduct of Maintenance"

604.4.003, "Reactor Building to Suppression Chamber Self Actuating Vacuum Breaker Surveillance Test and IST"

607.4.014, "Containment Spray and ESW System 1 Pump Operability, IST and Containment Spray Pumps Trip"

ER-AA-302-1006, "Generic Letter 96-05 Program Motor-Operated Valve Maintenance and Testing Guidelines"
619.4.025, "Automatic Scram Contactor Test"

Condition Reports (IR)

1088380 1088608 794100 1088397 1104183 1107302

Work Orders (AR)

R2160886 R2146198 R2168080

Other Documents

NRC Inspection Manual Part 9900 Technical Guidance, "Maintenance- Preconditioning of Structures, Systems, and Components Before Determining Operability"
C-1302-243-5310-041, "OCNGS 20" RB to Suppression Chamber Vacuum Breaker – Verification of Test Procedure #604.4.003"
Oyster Creek Nuclear Generating Station Technical Specification 3.5.A.4, "Reactor Building to Suppression Chamber Vacuum Breaker System"

Section 1EP2: Alert and Notification System (ANS) Evaluation

Procedures

EP-MA-121-1004, "Exelon East ANS Corrective Maintenance"
EP-MA-121-1005, "Exelon East ANS Preventive Maintenance Program"
EP-MA-121-1006, "Exelon East ANS Siren Monitoring, Troubleshooting, and Testing"
EP-MA-121-1002, "Exelon East Alert Notification System (ANS) Program"
EP-AA-125-1001, "EP Performance Indicator Guidance"

Other Documents

Oyster Creek Alert Notification System, Upgraded System Design Report, April 2005

Section 1EP3: Emergency Response Organization (ERO) Staffing and Augmentation System

Procedures

EP-AA-112-200, "TSC Activation and Operation"
EP-AA-112-100-F-07, "Mid-Atlantic ERO Notification or Augmentation"
EP-AA-121-1001, "Automated Call-out System Maintenance"
EP-AA-122-1001, "Drill and Exercise Scheduling, Development and Conduct"
TQ-AA-113, "ERO Training and Qualification"
EP-AA-121, "Emergency Response Facilities and Equipment Readiness"

Other Documents

ERO Call-in Augmentation Drill Results, dated June 26, 2010
ERO Call-in Augmentation Drill Results, dated March 23, 2010
ERO Call-in Augmentation Drill Results, dated December 9, 2010
ERO Call-in Augmentation Drill Results, dated December 1, 2009
ERO Call-in Augmentation Drill Results, dated September 24, 2009
ERO Call-in Augmentation Drill Results, dated March 21, 2009
ERO Call-in Augmentation Drill Results, dated May 29, 2009

Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes

Procedures

LS-AA-104, "Exelon 50.59 Review Process"
EP-AA-120-1001, "10 CFR 50.54(q) Change Evaluation"

Other Documents

09-57, EP-MA-114-100, State/Local Notification Form Change Package
 10-03, EP-MA-114-100-F-03, State/Local Notification Form Change Package
 09-111, EP-MA(MW)-124-1001, Facilities Inventories and Equipment Tests
 10-56, TSC/OSC Equipment Test – Software and Reference Document Inventory
 10-25, Various Inventory Sheets
 09-105, EP-MA-124-1001-F-10, EOF Inventory
 09-27, EP-AA-1010, Emergency Plan Annex for Oyster Creek Station
 10-06, DAPAR Computer Program and Procedures Change Package
 10-24, EP-MA-124-1001-F-34, OC Main Access Facility Inventory, Revision A

Section 1EP5: Correction of Emergency Preparedness WeaknessesProcedures

LS-AA-125, "Corrective Action Program (CAP) Procedure", Revision 14
 EP-AA-122, "Drills and Exercises", Revision 10
 EP-AA-111, "Emergency Classification and Protective Action Recommendations", Revision 16

Other Documents

988339-02, Oyster Creek 2010 NRC EP Program Inspection self-assessment
 854071-02, Oyster Creek NRC Exercise Readiness Self-Assessment
 NOSA-OYS-10-03 (AR 1045049), Emergency Preparedness Audit Report – Oyster Creek,
 dated April 19, 2010 – April 23, 2010
 NOSA-OYS-09-04 (AR 896453), Oyster Creek Generating Station Audit Report, dated
 April 20, 2009 – April 24, 2009
 ENS 44822, "Unusual Event and Reactor Scram due to Main Transformer Fire"
 ENS 45196, "Unusual Event Declared Due to a Loss of Offsite Power"

Section 1EP6: Drill EvaluationCondition Reports (IR)

00817140	00817140	00976430	00825242	01048223	00963878
00832379	01012042	00955014	00832454	01080731	01039079
00864370	01081466	00991833	00864388	01081564	00895806
00943775	01103095	00995622	00995076	00976439	00995622
01103052	01081398	01031628	01031660		

Section 4OA1: Performance Indicator VerificationProcedures

EP-AA-125-1003, "ERO Readiness – Performance Indicators Guidance"
 EP-AA-125-1004, "Emergency Response Facilities and Equipment Performance
 Indicators Guidance"
 EP-AA-125-1002, "ERO Performance Indicators Guidance"
 EP-AA-125-1001, "EP Performance Indicators Guidance"
 Performance Indicator Data, 4th quarter 2009 – 2nd quarter 2010

Other Documents

NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 6
 Reactor coolant chemistry logs, dated July 2009 through September 2010
 Drywell identified and unidentified leak rate logs, dated July 2009 through September 2010

Section 40A3: Event FollowupProcedures

351.2, "High Purity Waste System"

OP-AA-102-103, "Operator Work-Around Program"

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

Drawings

JC 147434, "Sump and Waste Collection System"

Condition Reports (IR)

754608	1008461	1055518	1110290	790158	1080887
1110762					

Work Orders (AR)

A0700924	C0528074	C2024198	A0705758	C2002414	R0800924
----------	----------	----------	----------	----------	----------

Other Documents

NEI 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"

Oyster Creek Generating Station Technical Specification 3.3.D, "Reactor Coolant System Leakage"

ECR 10-00530, "Drywell Drain Tank Temperature Spare Relay Addition"

NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73"

LIST OF ACRONYMS

ABN	Abnormal Operating Procedure
ADAMS	Agency-wide Documents Access and Management System
ALARA	As Low As Reasonably Achievable
APRM	Average Power Range Monitor
ANS	Alert and Notification System
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
DEP	Drill and Exercise Performance
EACE	Equipment Apparent Cause Evaluation
EAL	Emergency Action Level
ECR	Engineering Change Request
EDG	Emergency Diesel Generator
EMRV	Electromatic Relief Valve
ENS	Emergency Notification System
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedure
EP	Emergency Preparedness
EQ	Environmental Qualification
ERO	Emergency Response Organization
ESW	Emergency Service Water

Exelon	Exelon Energy Company, LLC
FEMA	Federal Emergency Management Agency
FZ	Fire Zone
GL	Generic Letter
GPU	General Public Utilities
HELB	High Energy Line Break
HVAC	Heating Ventilation and Air Conditioning
IC	Isolation Condenser
IR	Issue Report
IST	Inservice Test
JCPL	Jersey Central Power and Light
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NUREG	NRC technical report designation (<u>Nuclear Regulatory Commission</u>)
OB	Office Building
Oyster Creek	Oyster Creek Generating Station
PI	Performance Indicator
RAGEMS	Radioactive Gaseous Effluent Monitoring System
RB	Reactor Building
RCS	Reactor Coolant System
RCSA	Reactor Coolant System Activity
RCSL	Reactor Coolant System Identified Leak Rate
T&RM	Training & Reference Material
TB	Turbine Building
TCCP	Temporary Configuration Change Package
TSC	Technical Support Center
UILR	Unidentified Leak Rate
URI	Unresolved Item
VDC	Voltage Direct Current
WO	Work Order