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

March 16, 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 EVALUATION OF CHANGES, TESTS, OR EXPERIMENTS AND PERMANENT PLANT MODIFICATIONS TEAM INSPECTION REPORT 05000219/2012007

Dear Mr. Pacilio:

On February 10, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Oyster Creek Generating Station. The enclosed inspection report documents the inspection results, which were discussed on February 10, 2012, with Mr. M. Massaro, 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. In conducting the inspection, the team reviewed selected procedures, calculations and records, observed activities, and interviewed station personnel.

Based on the results of this inspection, no findings 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 the

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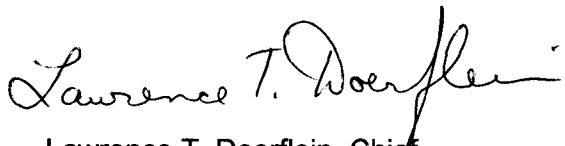
Sincerely,



Lawrence T. Doerflein, Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure:
Inspection Report 05000219/2012007
w/Attachment: Supplemental Information

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Sincerely,

/RA/

Lawrence T. Doerflein, Chief
Engineering Branch 2
Division of Reactor Safety

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-219
License No.:	DPR-16
Report No.:	05000219/2012007
Licensee:	Exelon Nuclear
Facility:	Oyster Creek Generating Station
Location:	Forked River, New Jersey
Inspection Period:	January 23, 2012 through February 10, 2012
Inspectors:	S. Pindale, Senior Reactor Inspector, Division of Reactor Safety (DRS), Team Leader J. Schoppy, Senior Reactor Inspector, DRS J. Rady, Reactor Inspector, DRS
Approved By:	Lawrence T. Doerflein, Chief Engineering Branch 2 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000219/2012007; 01/23/2012 - 02/10/2012; Oyster Creek Generating Station; Engineering Specialist Plant Modifications Inspection.

This report covers a two week on-site inspection period of the evaluations of changes, tests, or experiments and permanent plant modifications. The inspection was conducted by three region based engineering inspectors. 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.

No findings were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R17 Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications (IP 71111.17)

.1 Evaluations of Changes, Tests, or Experiments (25 samples)

a. Inspection Scope

The team reviewed five safety evaluations to determine whether the changes to the facility or procedures, as described in the Updated Final Safety Analysis Report (UFSAR), had been reviewed and documented in accordance with 10 CFR 50.59 requirements. In addition, the team evaluated whether Exelon had been required to obtain NRC approval prior to implementing the changes. The team interviewed plant staff and reviewed supporting information including calculations, analyses, design change documentation, procedures, the UFSAR, the Technical Specifications (TS), and plant drawings to assess the adequacy of the safety evaluations. The team compared the safety evaluations and supporting documents to the guidance and methods provided in Nuclear Energy Institute (NEI) 96-07, "Guidelines for 10 CFR 50.59 Evaluations," as endorsed by NRC Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," to determine the adequacy of the safety evaluations.

The team also reviewed a sample of twenty 10 CFR 50.59 screenings for which Exelon had concluded that no safety evaluation was required. These reviews were performed to assess whether Exelon's threshold for performing safety evaluations was consistent with 10 CFR 50.59. The sample included design changes, calculations, and procedure changes.

The team reviewed the safety evaluations that Exelon had performed and approved during the time period covered by this inspection (i.e., since the last modifications inspection) not previously reviewed by NRC inspectors. The 10 CFR 50.59 screenings were selected based on the safety significance, risk significance, and complexity of the change to the facility.

In addition, the team compared Exelon's administrative procedures used to control the screening, preparation, review, and approval of safety evaluations to the guidance in NEI 96-07 to determine whether those procedures adequately implemented the requirements of 10 CFR 50.59. The safety evaluations and screenings reviewed by the team are listed in the Attachment.

b. Findings

No findings were identified.

.2 Permanent Plant Modifications (12 samples)

.2.1 'A' Control Room Heating, Ventilation and Air Conditioning System Modifications

a. Inspection Scope

The team reviewed modification 09-00708 that redesigned and reconfigured the turbine building closed cooling water (TBCCW) inlet and outlet piping to provide cooling water to the new 'A' control room heating, ventilation and air conditioning (HVAC) condensers. The new TBCCW piping was necessitated by an HVAC condenser upgrade (from coil coolers to U-tube heat exchangers). The previous TBCCW connections were welded directly to the coolers, whereas the new coolers have inlet and outlet connections that allow the use of threaded piping rather than welded connections.

The team reviewed the modification to verify that the design and licensing bases and performance capability of the 'A' control room HVAC system had not been degraded by the modification. The team interviewed engineering staff and reviewed technical evaluations associated with the modification to determine if the 'A' control room HVAC system would function in accordance with the design assumptions. The team performed several walkdowns of the 'A' control room HVAC system to independently assess Exelon's configuration control, TBCCW piping fit-up and supports, and the material condition of the HVAC components. The team reviewed the associated post-modification test (PMT) results and recent 'A' control room HVAC surveillance test results to verify that the system functioned as designed following the modification. In addition, the team observed portions of an 'A' control room HVAC surveillance on February 10, 2012, to verify the leak tightness of the TBCCW piping connections and the integrity of the ventilation boundary with the system in service. The 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. The team also reviewed corrective action issue reports (IRs) to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.2 Emergency Service Water Piping Spool Replacements

a. Inspection Scope

The team reviewed modification 08-01040 that installed various piping spool pieces in the emergency service water (ESW) system in the reactor and turbine buildings. Exelon targeted certain ESW piping spools for replacement based on identified internal degradation due to erosion and/or corrosion. Based on pre-modification walkdowns, engineering determined that a one for one spool replacement was not practical due to existing obstructions as other piping and components were installed around the ESW piping over the years since original construction. Engineering determined that shorter

length spool pieces would be needed for the modification, requiring additional pipe flanges, resulting in increased loads on existing pipe supports and increased pipe stresses.

The team reviewed the modification to verify that the design and licensing bases and structural integrity of the ESW piping and supports had not been degraded by the modification. The team interviewed design engineers, and reviewed evaluations, pipe stress calculations, surveillance and PMT results, and associated maintenance work orders to verify that the ESW piping spool replacements were appropriately implemented and that the ESW piping was maintained in accordance with design assumptions. The team also performed several walkdowns of the accessible portions of the modification to ensure that the system configuration was in accordance with design instructions and that ESW piping integrity was maintained. The 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. The team also reviewed corrective action IRs to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.3 Intake Trash Rake Upgrade Modification

a. Inspection Scope

The team reviewed modification 06-00819 that replaced the existing rail mounted and conveyor debris removal system at the intake structure with a new upgraded trash raking system. The new system consists of bar racks, raking head and trolley, overhead monorail and associated support columns, dedicated trash dumpster, and an automated control system with remote emergency stop capability. The previous rail mounted system proved difficult to operate and ineffective for collection and disposal of intake debris especially during periods of high debris accumulation. Exelon upgraded the intake debris removal system with the newer, automated design to improve the system's effectiveness and reliability.

The team reviewed the modification to verify that the design and licensing bases and performance capability of the intake structure and its supported systems had not been degraded by the modification. Specifically, the team reviewed calculations, technical evaluations, and operating procedures to verify that the overhead monorail and associated support columns would not adversely impact important to safety structures, systems, and components (SSC) at the intake during normal operation or under design basis conditions. The team reviewed the associated work order instructions and documentation to verify that maintenance personnel implemented the modification as designed. The team reviewed the associated PMT results, interviewed plant operators, and directly observed debris removal activities at the intake to verify proper operation of the upgraded system. The team also performed several walkdowns of the upgraded

rake system and intake area SSCs to ensure that maintenance personnel installed the modification as designed, and to independently assess Exelon's configuration control and the material condition of the intake area. In addition, the 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. The team also reviewed corrective action IRs to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.4 Emergency Service Water Pump 'C' Discharge Piping Modification

a. Inspection Scope

The team reviewed modification 11-00035 that installed an uncoated flanged tee downstream of the 'C' ESW pump discharge. The piping tee was physically located beneath the intake structure deck. The piping tee replacement was emergent work necessitated due to an Exelon-identified through-wall leak in the existing piping tee. Exelon performed the replacement under a TS Limiting Condition for Operation that did not allow sufficient time for Exelon to obtain an internally coated tee. Accordingly, engineering evaluated the acceptability of using the uncoated piping tee until Exelon's planned replacement of all the ESW piping under the intake structure deck during the Fall 2012 refueling outage.

The team reviewed the modification to verify that the design and licensing bases and structural integrity of the ESW piping had not been degraded by the modification. The team interviewed design engineers, and reviewed evaluations, non-destructive examination results, surveillance and PMT results, and associated maintenance work orders to verify that the ESW piping tee replacement was appropriately implemented, and that the ESW piping configuration supported continued operability through December 2012. The team also performed several walkdowns of the accessible portions of the modification to ensure that the system configuration was in accordance with design instructions and that ESW piping integrity was maintained. The 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. The team also reviewed corrective action IRs to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.5 Weak Link Analysis for Oyster Creek Motor-Operated Valves

a. Inspection Scope

The team reviewed a modification 09-00889 that revised a weak link analysis (C-1302-900-E540-020) for several motor-operated valves (MOVs), including core spray system MOVs. The weak link analysis was revised to address valve stem material changes as well as a conversion to valve stems containing integral gages for MOV diagnostic testing for several of the MOVs.

The team reviewed the weak link analysis to verify that the design and licensing bases and performance capability of the MOVs not been degraded by the change. The team interviewed engineering staff and reviewed the revised analysis to confirm the impacted systems would function in accordance with the design assumptions. The team also reviewed the corrective action IR database to determine if there were reliability or performance issues that may have resulted from the modification. In addition, the team reviewed the associated equivalency change documentation that demonstrated that a formal 10 CFR 50.59 screen was not required. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.6 Service Water Cross-Connect from Reactor Building Closed Cooling Water Heat Exchanger to Emergency Service Water

a. Inspection Scope

The team reviewed a modification 09-00433 that cross-connected the service water (SW) system reactor building closed cooling water (RBCCW) heat exchanger discharge with the existing ESW/SW cross-connect piping. The intent of the modification was to allow the replacement of the SW system piping downstream of the RBCCW heat exchanger leading into the SW system discharge header and prevent entry into high risk plant configuration during the refueling outage. This configuration allowed sufficient cooling to the RBCCW system while the SW normal discharge piping was replaced.

The team reviewed the modification to verify that the design and licensing bases and structural integrity of the associated piping had not been degraded by the modification. The team interviewed design engineers, and reviewed evaluations, examination results, and associated completed maintenance activities to verify that the modified piping configuration supported continued functionality. The team performed walkdowns of the modification to ensure that the system configuration was in accordance with design instructions. The team also reviewed corrective action IRs to determine if there were reliability or performance issues that may have resulted from the modification. In

addition, the 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.7 Hardened Vent Valve Open Position to Permit Venting

a. Inspection Scope

The team reviewed modification 08-00864, which involved a calculation revision, to determine the smallest acceptable valve opening for the hardened vent system valves that would allow the required venting for both the drywell and torus. The stroke for the subject butterfly valves, V-23-13, -14, -15, and -16, had been limited to 75 degrees to allow them to close in the required stroke time, and which also considered valve structural limitations. However, there was no tolerance associated with setting up the valve stroke. This calculation determined the minimum valve position, to be used for setup tolerance, to ensure that the vent capability would be satisfied. The valves serve two purposes: 1) to close to provide containment isolation, and 2) to provide a hardened vent function. The valves are now required to have a 70 degrees – 75 degrees band for the open position limit.

The team reviewed the calculation to verify that the design and licensing bases and performance capability of the containment isolation and hardened vent functions of the subject valves had not been degraded by the modification. Specifically, the team verified that design specifications remained valid for postulated scenarios. The team interviewed engineers, and reviewed evaluations and completed surveillance and in-service test results to verify that the open position tolerances were appropriately implemented. The 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. Finally, the team walked down the isolation valves with the system engineer to assess the material condition of the valves. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.8 Calculation on Combustion Turbine Tank Oil Level

a. Inspection Scope

The team reviewed modification 10-00175 that revised calculation C-1302-743-E310-006 related to the required minimum fuel oil level for the Forked River Combustion Turbine (FRCT) fuel tank. The fuel reserve is required by contract with an outside organization to assure that the FRCTs can provide the power to Oyster Creek in the

event of a station blackout. The existing minimum level in the fuel tank was 14 feet, but the revision changed the minimum level to 8 feet.

The team reviewed the calculation to verify that the design and licensing bases and performance capability of the FRCT functions had not been degraded by the modification. Specifically, the team verified that design specifications remained valid for the postulated station blackout scenario. The team interviewed design engineers and reviewed the existing contract to ensure scenario assumptions remained valid. The 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. Finally, the team walked down the FRCTs, including the fuel tank and associated fuel supply system with the responsible engineer to assess the material condition of the FRCT system. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.9 Emergency Diesel Generator Battery Voltage for Control Circuits

a. Inspection Scope

The team reviewed modification 07-00552, which created a calculation to determine the minimum voltage available for both emergency diesel generator (EDG) breaker closing coils and associated control devices. The EDGs provide vital power to emergency buses during a loss-of-offsite power. Each EDG has a dedicated 120Vdc battery to provide starting power. The modification was performed because Exelon received a finding (NCV 05000219/2007006-01) in 2007 during a Component Design Basis Inspection performed by the NRC at Oyster Creek. The finding was related to an existing EDG battery sizing calculation that did not address the available DC voltage to the EDG breaker closing coils or associated control devices. The modification did not include any physical plant changes to the facility.

The review was performed to verify that the design and licensing bases of the facility had not been degraded by the results of the new calculation. The team reviewed the calculation and technical evaluations to assess whether the modification was consistent with design assumptions. Power requirements were reviewed to verify that the EDG breaker closing coils and associated control circuits met the manufacturer's specifications. Supporting electrical calculations and analyses for the EDG battery sizing requirements were reviewed to ensure design limits were not exceeded. The team performed a walkdown of the EDG battery compartments to identify any abnormal conditions while in service. The team also conducted interviews with engineering staff to determine if the affected SSCs would function in accordance with the design assumptions. Finally, the 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.10 Revise Oyster Creek Short Circuit Study

a. Inspection Scope

The team reviewed modification 07-00744 that updated the Oyster Creek Short Circuit Study (C-1302-700-5350-012). The modification included converting the existing Short Circuit Study modeled in electrical transient analysis software (DAPPER) to new electrical transient analysis software (ETAP). The new electrical distribution model also included corrections to reflect the as-built plant configuration. An additional scenario, where the main generator provides power to the auxiliary transformer with one of the EDGs connected in parallel to an emergency bus for EDG testing, was also included. The modification did not include any physical plant changes to the facility.

The review was performed to verify that the design bases and licensing bases of the facility had not been degraded by the short circuit study results. The results of the revised short circuit study showed that the interrupting and momentary fault currents were within the circuit breaker ratings of all the 4160V Switchgear, 480V unit substations, and 480V motor control centers. There was also an improvement in calculated margin for the worst case scenario of a small break loss-of-coolant accident. Design assumptions were reviewed to evaluate whether they were technically appropriate and consistent with the UFSAR. The team also conducted interviews with engineering staff to determine if the affected SSCs would function in accordance with the design assumptions. Finally, the 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.11 Plant Process Computer Intelligent Remote Control Unit Replacement

a. Inspection Scope

The team reviewed modification 08-00527 that upgraded the input/output components of the plant process computer. Two intelligent remote control units (IRCU) and six expansion chassis were replaced with eight universal chassis. The existing input/output cards were transferred from the existing IRCU and expansion chassis to the new universal chassis. The modification was performed because the existing system used a custom interface that on rare occasion locked up the system and changed the scanned values to static values. The universal chassis interface with data from the following systems: Rod Worth Minimizer; 3D Monicore; Safety Parameter Display System;

Emergency Response Data System; and Radioactive Gaseous Effluent Monitoring System.

The review was performed to verify that the design and licensing bases and performance capability of the installed universal chassis had not been degraded by the modification. Power requirements were reviewed to verify that the installed universal chassis met the manufacturer's specifications. Replacement components and materials were reviewed to ensure that the modification conformed to the design specifications. The team also verified that selected drawings and calculations were properly updated based on the installed universal chassis. The team reviewed the PMT to verify proper operation of the installed universal chassis. The team reviewed IRs associated with the universal chassis to verify that deficiencies were appropriately identified and corrected. The team also conducted interviews with engineering staff to verify that the affected SSCs functioned in accordance with the design assumptions, and to verify the modification corrected the previously identified problem. The 10 CFR 50.59 screening determination associated with this modification was reviewed as described in section 1R17.1 of this report. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.12 Replace Recorder UR-622-24B for Post-Accident Monitoring Reactor Pressure and Level

a. Inspection Scope

The team reviewed modification 09-00590 that replaced an existing Yokogawa analog strip chart recorder with a new Yokogawa digital paperless recorder. The new digital recorder displays the same plant inputs as the existing analog recorder. The following data inputs are displayed on the new recorder: Reactor Pressure; Reactor Level – Yarway; and Reactor Level – Fuel Zone. The modification was performed because the existing analog recorder was obsolete and spare parts were difficult to obtain. The modification included installation of the new recorder in the same location as the existing recorder and no additional wiring was required.

The review was performed to verify that the design and licensing bases and performance capability of the new digital recorder had not been degraded by the modification. The team reviewed calculations and technical evaluations to assess whether the modification was consistent with design assumptions. Power requirements were reviewed to verify that the new digital recorder met the manufacturer's specifications. The replacement component was reviewed to verify that it was seismically qualified. The team also verified that selected drawings, calculations, instrument calibration sheets, and procedures were properly updated based on the installation of the digital recorder. The team reviewed the PMT to verify proper operation of the digital recorder. The team reviewed IRs associated with the digital recorder to verify that deficiencies were appropriately identified and corrected. In addition, the team

reviewed the associated equivalency change documentation that demonstrated that a formal 10 CFR 50.59 screen was not required. Finally, the team conducted interviews with engineering staff to determine if the affected SSCs would function in accordance with the design assumptions. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (IP 71152)

a. Inspection Scope

The team reviewed a sample of IRs associated with 10 CFR 50.59 and plant modification issues to determine whether Exelon was appropriately identifying, characterizing, and correcting problems associated with these areas, and whether the planned and/or completed corrective actions were appropriate. In addition, the team reviewed IRs written on issues identified during the inspection to verify adequate problem identification and incorporation of the problem into the corrective action system. The IRs reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

The team presented the inspection results to Mr. M. Massaro, Site Vice President, and other members of Exelon's staff at an exit meeting on February 10, 2012. The team returned the proprietary information reviewed during the inspection and verified that this report does not contain proprietary information.

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Exelon Personnel

A. Agarwal, Design Engineer
M. Benitez, Design Engineer
J. Chrisley, Regulatory Assurance Specialist
P. De, Design Engineer
P. Desai, Design Engineer
J. Flores, Design Engineer
G. Malone, Director, Engineering
M. Massaro, Site Vice-President
K. Mayle, Design Engineer
P. Procacci, Design Engineer
H. Ray, Senior Manager, Design Engineering
T. Ruggiero, System Manager
S. Schwartz, System Manager
J. Tabone, MOV/AOV Program Owner

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

10 CFR 50.59 Evaluations
OC-2009-E-0001, SW Cross-Connect Downstream of RBCCW Heat Exchangers, Rev. 1
OC-2010-E-0001, Application of TRACG04P Version 4.2.60.3 for Stability Analysis, Rev. 0
OC-2010-E-0002, Transition to GNF-2 Fuel - Impact on EAB, LPZ and CR Dose, Rev. 0
OC-2011-E-0001, MSO Bus 1D Appendix R Permissive Switch Installation, Rev. 0
OC-2011-E-0002, Core Spray System MSO Modifications - MSO Scenarios 5k & 10b, Rev. 0

10 CFR 50.59 Screened-out Evaluations
OC -2010-S-0046, Bank 5-6 Voltage Regulator Controller Modification, Rev. 0
OC -2010-S-0108, Component Design Basis Inspection Calculation Revision, Rev. 0
OC -2011-S-0004, EDG-2 Breaker Logic Modification for Appendix R Fire, Rev. 0
OC -2011-S-0016, RPS Sub-Channel '1A' Alternate MSIV Closure Trip Signal, Rev. 0
OC -2011-S-0017, Implement Level 2-3 Data Diodes, Rev. 0
OC -2011-S-0048, Replacement of EDG-1 Speed Switch, Rev. 0
OC -2011-S-0108, Core Spray Pump Trip Logic Mod – MSO Scenario 7g, Rev. 0

OC-2009-S-0093, 205.95.0 - Reactor Flood-up / Drain-down, Rev. 0
OC-2009-S-0170, 310 - Containment Spray System Operation, Rev. 0
OC-2009-S-0179, 681.4.005 - Substation Tour Sheet, Rev. 0
OC-2009-S-0181, ECR 09-00678 - Replace Recorders LR-37/PR-53 and AR-1, Rev. 0
OC-2009-S-0184, 316.1 - Condensate Transfer System, Rev. 0
OC-2010-S-0026, 301.2 - Reactor Recirculation System, Rev. 0
OC-2010-S-0027, 654.2.002 - Installation of Space Heater in Shutdown Cooling Room, Rev. 0
OC-2010-S-0048, ECR 10-00175 FRCT Fuel Oil System Evaluation for SBO, Rev. 0
OC-2010-S-009355, ECR 10-00108 - TBCCW Heat Exchanger Vent Bypass Line, Rev. 0
OC-2010-S-0190, Surveillance 665.5.00 Allow use of Hardened Vent for Venting, Rev. 1
OC-2011-S-0060, ABN-31 High Winds, Rev. 0
OC-2011-S-0070, ABN-32 Abnormal Intake Level, Rev. 0
OC-2011-S-0114, V-14-33 Steam Leak Condenser ECR 11-00596, Rev. 0

Modification Packages
06-00819, Intake Trash Rake Upgrade Modification, Rev. 0
07-00552, EDG Battery Voltage for Control Circuits, Rev. 0
07-00744, Revise Oyster Creek Short Circuit Study, Rev. 0
08-00527, Plant Process Computer Intelligent Remote Control Unit Replacement, Rev. 2
08-00864, Hardened Vent Valve Open Position to Permit Venting, Rev. 0
08-01040, ESW System Piping Spool Replacements, Rev. 0
09-00433, SW Cross-Connect from RBCCW Heat Exchanger to ESW, Rev. 3
09-00590, Replace Recorder UR-622-24B for Post-Accident Monitoring Reactor Pressure and Level, Rev. 0
09-00708, 'A' Control Room HVAC System Modifications, Rev. 0
09-00889, Weak Link Analysis for Oyster Creek MOVs, Rev. 0
10-00175, Calculation on Combustion Turbine Tank Oil Level, Rev. 0
11-00035, ESW Pump 'C' Discharge Piping Modification, Rev. 0

Calculations, Analysis, and Evaluations
1164020-07, ESW Piping Leak Under Deck at Intake Equipment (Apparent Cause), Rev. 0
1209774-02, ESW Pipe ES0106 Inspection Technical Evaluation, dated 6/15/11
1209774-04, ESW Pipe ES0112 Inspection Technical Evaluation, dated 6/15/11
1209774-05, ESW Pipe ES0212 Inspection Technical Evaluation, dated 6/15/11
943876-03, Intake and Dilution Trash Rake Short Hose Failures (Apparent Cause), Rev. 0
A2204999-05, CR HVAC 'A' Condenser Support Bracket Seismic Evaluation, dated 9/24/09
A2204999-15, Provide Guidance/Acceptance for As-Built Condenser Clamps, dated 11/12/09
A2287516, 'B' IC Steam Inlet Isolation Valve V-14-33 Packing Leakage Monitoring Plan, Rev. 2
A2296464-01, Leakage from 'A' Control Room HVAC Technical Evaluation, dated 1/31/12
C-1302-168-E310-001, Intake Structure Trash Rake Foundation and Anchorages, Rev. 1
C-1302-251-E310-037, Pipe Stress Analysis, Fuel Pool Cooling Line NN-1, Model 2, from Skimmer Surge Tank to Pump Suction Nozzles NN01A/B and NN01C/D, Rev. 0
C-1302-532-E540-037, Piping Analysis - ESW System from Containment Spray HX 3 & 4 through TB and Out to Yard, Rev. 1a
C-1302-532-E540-041, Piping Analysis - ESW System from Containment Spray HX 1 & 2 through RB to TB Entrance, Rev. 2a

C-1302-532-E540-045, Piping Analysis - ESW System from Containment Spray HX 1 & 2 Outlets to Yard, Rev. 2a
C-1302-700-5350-004, Oyster Creek Electrical Model, Rev. 3
C-1302-700-5350-012, Oyster Creek Short Circuit Study, Rev. 3
C-1302-741-5350-009, Oyster Creek EDG Sizing Calculation, Rev. 1
C-1302-743-E310-006, Forked River Fuel Oil Transfer System Performance Evaluation, Rev. 0
C-1302-822-5360-036, Hardened Vent System Capability, Rev. 2
C-1302-822-E310-083, EAB, LPZ, Control Room Doses due to LOCA, Rev. 0
C-1302-822-E310-084, EAB, LPZ, CR Doses due to Main Steam Line Break Accident, Rev. 0
C-1302-822-E310-085, EAB, LPZ, CR Doses due to Fuel Handling Accident, Rev. 0
C-1302-822-E310-086, EAB, LPZ, CR Doses due to Control Rod Drop Accident, Rev. 0
C-1302-900-E540-020, Weak Link Analysis Calculations for Oyster Creek MOVs, Rev. 1A
DRA CSW00661, Structural Analysis for Intake Structure Trash Rake Monorail System, Rev. 1
ECR 09-00685, 204-45123 and 204-45611 10-Ton and 15-Ton Condensers, Rev. 0
EXLNOC094-PR-01, Assessment of the Oyster Creek Hardened Vent System, Rev. 0

Issue Reports

330592	964555	1115400	1276569	1322673
350627	972528	1128036	1280593	1323920*
625029	976547	1128042	1290865	1323992*
625138	978288	1135900	1317861	1324164
631025	985986	1164020	1318090*	1324254*
645374	991345	1166208	1318266*	1324795*
929813	1056623	1166220	1318288*	1318465*
943876	1058926	1166848	1319776*	1323820*
943993	1059021	1198623	1319787*	1324888*
945376	1062005	1198629	1321771*	
945676	1062500	1243623	1321899*	
953452	1088735	1243635	1321996*	

(* denotes NRC identified during this inspection)

Drawings

13432.33-EM-1, Radiation Shielding Support Reactor Cavity Drain Line Pipe Supports, Rev. 10
13983-0002-E-01, Plant Process Computer System Network Block Diagram, Sh. 1 & 4, Rev. 0
13983-0002-E-07, Multiplexor Circuit PC6 Subnet 'B' Switch Wiring Diagram, Rev. 0
15595.00-EM-1, Intake Structure Modifications, Rev. 1
2153, Fuel Pool Cooling Filtering & Drain Piping Plans and Sections Reactor Building, Rev. 4
2167, HVAC Control, Mechanical Equipment & Cable Room, Rev. 5
237E756, Spent Fuel Pool Cooling Flow Diagram, Rev. 53
3C-532-A3-1000, Pipe Integrity Inspection Program ESW System Piping, Rev. 1
3D-531-22-1009, ECR 08-01040 Attachment 2, Sh. 1, 2, & 3, Rev. 0
3D-532-24-001, Emergency Service Water System Pipe Restraint Modification, Rev. 0
3E-168-02-001, General Arrangement Intake Structure, Rev. 10
4031, Intake Structure Sections and Details, Rev. 3
4034, Intake Structure Trash Rack and Stop Log Details, Rev. 3
538361, General Erection Intake Structure, Rev. G

557744, General Erection Intake Structure, Rev. D
BR 2005, Reactor and Turbine Building Service Water System, Sh. 2, Rev. 105
BR 2006, Turbine Building Closed Cooling Water System Flow Diagram, Sh. 5, Rev. 58
BR 2010, Control and Cable Spreading Rooms HVAC Flow Diagram, Rev. 32
BR 2011, Reactor Building Ventilation, Sh. 2, Rev. 62
BR 3001B, 4160V System One Line Diagram, Rev. 16
BR 3001C, 4160V System One Line Diagram, Rev. 1
BR 3005, Misc. Building 460V MCC One Line Diagram, Sh. 5, Rev. 10
GE 157B6350, 480V System Electrical Elementary Diagram, Sh. 41, Rev. 23
GE 237E566, Reactor Protection System, Sh. 17, Rev. 3
GU 3E-243-21-1000, Drywell and Torus Vacuum Relief System, Rev. 28
SN 13432.19-1, Nitrogen Supply System, Sh. 1, Rev. 33
U949-C-5000, Intake Structure Plan, Rev. 1

Procedures
205.95.0, Reactor Flood-up / Drain-down, Rev. 18
2400-GMM-3900.52, Inspection and Torquing of Bolted Connections, Rev. 5
307, Isolation Condenser System, Rev. 116
309.1, Turbine Building Closed Cooling Water System, Rev. 57
310, Containment Spray System Operation, Rev. 98
312.11, Nitrogen System and Containment Atmosphere Control, Rev. 40 & 41
312.9, Primary Containment Control, Rev. 52 & 53
344.2, Intake Trash Rake Operation, Rev. 10
654.3.004, Control Room HVAC System 'A' Flow and Differential Pressure Test, Rev. 13
665.5.001, Torus to Drywell Vacuum Relief Valve Leak Rate Test, Rev. 29
681.4.005, Substation Tour Sheet, Rev. 17 & 18
ABN-31, High Winds, Rev. 14 & 16
ABN-32, Abnormal Intake Level, Rev. 18
AD-AA-01, Processing of Procedures and T&RMs, Rev. 23
CC-AA-1, Configuration Control, Rev. 0
CC-AA-10, Configuration Control Process Description, Rev. 6
CC-AA-102, Design Input and Configuration Change Impact Screening, Rev. 22
CC-AA-103, Configuration Change Control for Permanent Physical Plant Changes, Rev. 22
CC-AA-107, Configuration Change Acceptance Testing Criteria, Rev. 8
CC-AA-107-1001, Post Modification Acceptance Testing, Rev. 4
CC-AA-13, Margin Management, Rev. 2
CC-MA-102-1001, Design Inputs and Impact Screening – Implementation, Rev. 9
LS-AA-104, Exelon 50.59 Review Process, Rev. 6
LS-AA-104-1000, Exelon 50.59 Resource Manual, Rev. 6
LS-AA-120, Issue Identification and Screening Process, Rev. 14
MA-AA-743-310, Diagnostic Testing and Evaluation of Air Operated Valves, Rev. 5
NRT-OC-08-0006, RTP-2000 Functional Test, Rev. 0
OP-OC-108-109-1001, Severe Weather Preparation T&RM for Oyster Creek, Rev. 12

Work Orders

A2149453	C2014848	C2025252	R2132325
A2204999	C2016918	C2025388	R2156772
A2262068	C2017315	C2025389	R2162526
A2262069	C2019099	M2119029	R2165640
A2270528	C2021995	R0802188	R2185877
A2270529	C2023483	R2127181	R2189853
C2014505	C2025008	R2128890	

Miscellaneous

AWC Flat Festoon Cable (PVC) Specifications, dated 1/25/12
C2017315, Post-Installation Walkdown Checklist, dated 11/9/10
C2019099-18, SQUG Walkdown - Seismic Adequacy per ECR 09-00708, dated 11/13/09
CR HVAC System Walkdown Report, dated 8/30/11 & 11/29/11
Cycle 23 Core Operating Limits Report – Oyster Creek, Rev. 5
ECR OC 06-00819 Attachment F, Acceptance Test Criteria for Intake Structure Trash Raking System, Rev. 0
First Amendment to Station Blackout Agreement between Forked River Power LLC and Exelon Generation Company, LLC, dated 5/12/10
GE-NE-0000-0052-5690-R0, TRACG04 10 CFR 50.59 Evaluation Basis, Rev. 0
GS 04L43B01-01E, Daqstation DX1000N General Specifications, Rev. 5
HVAC - Air Handling Equipment PCM Template, dated 8/5/11
In-service Testing Bases Document (V-23-13), January 2012
NEDC-33065P, Application of Stability Long Term Solution Option 2 to Oyster Creek, Rev. 0
OCNGS – Relief from the Requirements of the ASME Code, Relief Request No. VR-02 for the Fifth Inservice Testing Interval (TAC No. ME7618), dated 1/24/12
OCNGS – Relief Request RP-04, Regarding SW Pump Suction Pressure Gages, and RV-51, Containment Isolation Valve Position Indication (TAC No. MB4945), dated 10/2/02
Program Health Report, NRC Generic Letter 89-13, Q4-2011
Submittal of Proposed Alternative and Relief to the Requirements of 10 CFR 50.55a Concerning the Fourth Ten-Year Interval In-service Testing Program, dated 4/19/02
Submittal of Relief Request for the Fifth In-service Testing Interval (RA-11-089), dated 11/17/11
System Health Report, Circulating Water, Q3-2011
System Health Report, Control Room HVAC, Q4-2011
System Health Report, Emergency Service Water, Q4-2011
System Health Report, Screen Wash, Q3-2011
System Health Report, Service Water, Q3-2011
V-14-33 Motor Temperature Trend Data, dated 10/30/11 - 1/22/12
V-14-33 Packing Leak Rate Trend Data, dated 10/10/11 - 1/16/12
VM-OC-0008, Magne-Blast Circuit Breaker Vendor Manual, Rev. 14
VM-OC-2888, Intake Trash Rake Installation Operation and Maintenance Manual, Rev. 1

Design & Licensing Bases

NRC Regulatory Guide 1.183, Alternate Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors, July 2000
OCNGS Updated Final Safety Analysis Report, Rev. 17

Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 262 to Facility Operating License No. NPF-16 for the Oyster Creek Nuclear Generating Station - Application of Alternate Source Term Methodology (TAC No. MC6519), dated 4/26/07
SDBD-OC-243, Design Basis Document for Containment System, Rev. 1
TDR No. 1099, Station Blackout Evaluation Report, Rev. 4
NUREG-0800 SRP-15.0.1, Radiological Consequence Analyses Using Alternate Source Terms Standard Review Plan, Rev. 0
PBD-AMP-B.2.04, Oyster Creek License Renewal Project Periodic Inspection of Ventilation Systems, Rev. 1
TAC No. 68577, Safety Evaluation - SBO Analysis OCNGS, dated 8/23/91

Completed Surveillance and Modification Acceptance Tests
2011-002-001, ESW 2 Piping, Downstream of P-33C UT NDE Report, performed 1/21/11
2011-002-015, ESW Piping Under Intake (ES0106) UT NDE Data Report, performed 4/27/11
2011-002-016, ESW Piping Under Intake (ES0112) UT NDE Data Report, performed 4/28/11
2011-002-017, ESW Piping Under Intake (ES0212) UT NDE Data Report, performed 4/29/11
2400-SMM-3900.04 Exhibit 1, C2017315 ESW 2 Pressure Test (ASME XI), performed 11/7/10
2400-SMM-3900.04 Exhibit 1, C2025008 ESW Tee Pressure Test (ASME XI), performed 1/24/11
2400-SMM-3900.08 Exhibit 1, C2023483-13 General Hydrostatic Test, Initial Service Leak Test, and Pneumatic Test (ANSI B31.1), performed 11/30/10
607.4.017, CS/ESW Pump System 2 Operability and Quarterly Inservice Test, performed 1/20/12
636.2.012, Diesel Generator #1 Battery Service Test, performed 3/7/11
636.2.013, Diesel Generator #2 Battery Service Test, performed 10/9/09 & 12/13/10
636.4.001, Diesel Generator #1 Automatic Actuation Test, performed 11/24/10
636.4.002, Diesel Generator #2 Automatic Actuation Test, performed 11/12/10
654.3.004, Control Room HVAC 'A' Flow and DP Test, performed 6/28/07, 6/23/09, & 6/28/11
654.3.006, Control Room HVAC 'B' Flow and DP Test, performed 6/17/10
654.4.003, Control Room HVAC System Operability Test, performed 1/12/12
665.5.001, Torus to Drywell Vacuum Relief Valve Leak Rate Test, performed 11/29/10
678.4.001, Primary Containment Isolation Valve Operability and IST, (V-23-13, -14, -15, -16), performed 4/13/11, 8/2/11, & 10/12/11
681.4.005, Substation Tour Sheet, performed 1/25/12 - 1/27/12
C2019099-10, In-service Leak Test for 3 New Condensers Replaced by ECR 09-00708, performed 11/13/09
C2021995-07, In-Service Leak Test for Condenser Refrigerant Pipe Assembly, Compressor, Evaporator and all Associated Air Lines, performed 11/16/09
ER-AA-335-015 Attachment 1, C2025008 VT-2, NDE Report, performed 1/24/11
Weld Map No. 532-WM-050/0, C2017315 Pipe Weld Record Sheet, dated 11/24/10
Weld Map No. 532-WM-060/0, C2017315 Pipe Weld Record Sheet, dated 12/1/10

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
DC	Direct Current
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
Exelon	Exelon Nuclear Northeast
ESW	Emergency Service Water
FRCT	Forked River Combustion Turbine
HVAC	Heating, Ventilation and Air Conditioning
IP	Inspection Procedure
IR	Issue Report
IRCU	Intelligent Remote Control Unit
MOV	Motor-Operated Valve
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OCNGS	Oyster Creek Nuclear Generating Station
PARS	Publicly Available Records
PMT	Post-Modification Test
RBCCW	Reactor Building Closed Cooling Water
SSC	Structure, System, and Component
SW	Service Water
TBCCW	Turbine Building Closed Cooling Water
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
Vdc	Volts, Direct Current