



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
2100 RENAISSANCE BLVD.
KING OF PRUSSIA, PA 19406-2713

August 3, 2017

EA-17-020

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

**SUBJECT: PEACH BOTTOM ATOMIC POWER STATION – INTEGRATED
INSPECTION REPORT 05000277/2017002 AND 05000278/2017002 AND
EXERCISE OF ENFORCEMENT DISCRETION**

Dear Mr. Hanson:

On June 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Peach Bottom Atomic Power Station, Units 2 and 3. On July 14, 2017, the NRC inspectors discussed the results of this inspection with Mr. Pat Navin, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors documented one finding of very low safety significance (Green) in this report. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy. Additionally, a violation of Exelon's site-specific licensing basis for tornado-generated missile protection was identified. Because this violation was identified during the discretion period covered by Enforcement Guidance Memorandum 15-002, Revision 1, "Enforcement Discretion for Tornado Generated Missile Protection Non-Compliance," (ML 16355A286)¹ and because Exelon is implementing compensatory measures, the NRC is exercising enforcement discretion by not issuing an enforcement action and is allowing continued reactor operation.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at Peach Bottom.

In addition, if you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC, 20555-0001; with copies to the Regional Administrator, Region I, and the NRC Resident Inspector at Peach Bottom.

¹ Designation, in parentheses, refers to the Agencywide Documents Access and Management System (ADAMS) Accession Number. Documents referenced in this letter are publicly-available using the Accession Number in ADAMS.

B. Hanson

2

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and the NRC's Public Document Room in accordance with 10 *Code of Federal Regulations* (CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Daniel L. Schroeder, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Nos. 50-277 and 50-278
License Nos. DPR-44 and DPR-56

Enclosure:
Inspection Report 05000277/2017002
and 05000278/2017002
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION – INTEGRATED INSPECTION REPORT 05000277/2017002 AND 05000278/2017002 AND EXERCISE OF ENFORCEMENT DISCRETION DATED AUGUST 3, 2017

DISTRIBUTION w/encl: (via E-mail)

- DDorman, RA
- DLew, DRA
- R.Lorson, DRP
- DPelton, DRP
- JYerokun, DRS
- BWelling, DRS
- DSchroeder, DRP
- SBarber, DRP
- ATurilin, DRP
- JHeinly, DRP, SRI
- BSmith, DRP, RI
- SSchmitt, DRP, AA
- JBowen, RI, OEDO
- RidsNrrPMPeachBottom Resource
- RidsNrrDorLpl1 Resource
- ROPreports Resource

Document Name: G:\DRP\BRANCH4_PEACH BOTTOM\Inspection Reports\PB IR 2017-002_Final.docx_Final
 ADAMS ACCESSION NO. ML17215A932

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RI/DRP	RI/DRP	R1/DRP	R1/ORA	
NAME	JHeinly/JH	SBarber/SB	MMcLaughlin/MMc	DSchroeder/DS	
DATE	07/21/17	07/28/17	08/3/17	08/3/17	

OFFICIAL RECORD COPY

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.: 50-277 and 50-278

License Nos.: DPR-44 and DPR-56

Report No.: 05000277/2017002 and 05000278/2017002

Licensee: Exelon Generation Company, LLC

Facility: Peach Bottom Atomic Power Station, Units 2 and 3

Location: Delta, Pennsylvania

Dates: April 1, 2017 through June 30, 2017

Inspectors: J. Heinly, Senior Resident Inspector
B. Smith, Resident Inspector
S. Barber, Senior Project Engineer

Approved By: Daniel L. Schroeder, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY	3
REPORT DETAILS	5
1. REACTOR SAFETY	5
1R01 Adverse Weather Protection	5
1R04 Equipment Alignment.....	6
1R05 Fire Protection	7
1R06 Flood Protection Measures	8
1R07 Heat Sink Performance.....	8
1R11 Licensed Operator Requalification Program and Licensed Operator Performance.....	8
1R12 Maintenance Effectiveness	9
1R13 Maintenance Risk Assessments and Emergent Work Control	10
1R15 Operability Determinations and Functionality Assessments	10
1R18 Plant Modifications	13
1R19 Post-Maintenance Testing	13
1R22 Surveillance Testing	14
1EP6 Drill Evaluation	14
4. OTHER ACTIVITIES.....	15
4OA1 Performance Indicator Verification	15
4OA2 Problem Identification and Resolution	15
4OA3 Follow-Up of Events and Notices of Enforcement Discretion	19
4OA6 Meetings, Including Exit.....	19
SUPPLEMENTARY INFORMATION	A-1
KEY POINTS OF CONTACT.....	A-1
LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED.....	A-1
LIST OF DOCUMENTS REVIEWED.....	A-2
LIST OF ACRONYMS.....	A-8

SUMMARY

Inspection Report 05000277/2017002 and 05000278/2017002; 04/01/2017 – 06/30/2017; Peach Bottom Atomic Power Station, Units 2 and 3; Operability Determinations.

This report covered a three-month period of inspection by resident inspectors and an announced baseline inspection performed by a regional inspector. The inspectors identified one finding, which was of very low safety significance (Green). The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within Cross-Cutting Areas," dated December 4, 2014. All violations of the Nuclear Regulatory Commission (NRC) requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated August 1, 2016. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

Cornerstone: Mitigating Systems

- Green. A self-revealing non-cited violation (NCV) of 10 *Code of Federal Regulation* (CFR) Part 50, Appendix B, Criterion XVI, Corrective Actions, of very low safety significance (Green) was identified for Exelon not correcting a condition adverse to quality concerning reverse control relay (RCR) contacts for valves associated with the reactor core isolation cooling (RCIC) system. Specifically, Exelon specified a corrective action (CA) from an October 18, 2013, Unit 3 RCIC equipment apparent cause evaluation (EACE) to replace RCR contacts after 12 years of service, however, the CA was not correctly implemented. As a result, on January 12, 2017, an RCR contact associated with the Unit 3 RCIC suppression pool suction valve remained in service for 15 years, exhibited a high resistance failure during a surveillance which resulted in Unit 3 RCIC being inoperable. Following the failure, Exelon initiated issue reports (IRs) 03962563 and 03977949, implemented corrective actions to replace the RCR contact, restored Unit 3 RCIC operability, and risk-informed their corrective maintenance schedule for replacing all RCR contacts that currently exceeded the recommended 12-year service life.

Exelon's failure to recognize and correct a condition adverse to quality associated with certain RCR contacts in their Unit 3 RCIC system that had exceeded their 12-year service life, was a performance deficiency (PD) that was within their ability to foresee and correct and should have been prevented. The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone's objective to ensure the reliability of systems to respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, not recognizing that existing RCR contacts were installed in safety-related equipment beyond their 12-year service life, resulted in the failure of the Unit 3 RCIC suppression pool suction valve. The inspectors evaluated the finding in accordance with Exhibit 2 of IMC 0609, Appendix A, "SDP for Findings At-Power," and determined the finding was of very low safety significance (Green) because it did not represent a loss of system function or represent an actual loss of function of at least a single train for longer than its technical specification (TS) allowed outage time of 14 days.

The inspectors determined that the finding has a cross-cutting aspect in Human Performance, Procedure Adherence, because Exelon did not validate that the correct revision of procedure WC-AA-120, Attachment 2, "Preventive Maintenance (PM) Change Review Form," was used when creating a new PM to replace RCR contacts. [H.8] (Section 1R15).

Other Findings

None.

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period at 100 percent rated thermal power (RTP). On April 12, operators performed a downpower to 82 percent RTP to remove and perform maintenance on the '2B' reactor feedpump. The unit was returned to 100 percent RTP on April 13. On May 12, operators performed a planned downpower to 52 percent RTP for routine maintenance and surveillance testing. The unit was returned to full power on May 13 and remained at 100 percent RTP except for brief periods to support planned testing and control rod pattern adjustments.

Unit 3 began the inspection period at 100 percent RTP. On May 20, 2017, Unit 3 reduced power to 31 percent RTP and entered single loop operations for planned maintenance on the '3A' adjustable speed drive (ASD). Upon restart of the ASD, the '3A' ASD unit unexpectedly tripped. Troubleshooting identified a number of faulty power cells which were subsequently replaced. The unit returned to full power on May 27, 2017, and remained at 100 percent RTP until the end of the inspection period, except for brief periods to support planned testing and control rod pattern adjustments.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 Summer Readiness of Offsite and Alternate Alternating Current (AC) Power Systems

a. Inspection Scope

During the week of May 15, 2017, the inspectors performed a review of plant features and procedures for the operation and continued availability of the offsite and alternate AC power system to evaluate readiness of the systems prior to seasonal high grid loading. The inspectors reviewed Exelon's procedures affecting these areas and the communications protocols between Exelon Generation and the transmission operator. This review focused on changes to the established program and material condition of the offsite and alternate AC power equipment. The inspectors assessed whether Exelon established and implemented appropriate procedures and protocols to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system. The inspectors evaluated the material condition of the associated equipment by interviewing the responsible system engineer, reviewing IRs and open work orders (WOs), and walking down portions of the offsite and AC power systems. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 External Flooding

a. Inspection Scope

On April 24 – 25, 2017, the inspectors performed an inspection of the external flood protection measures for PB. The inspectors reviewed TS, procedures, design documents, and Updated Final Safety Analysis Report (UFSAR) Chapter 2.3.4.5 and Appendix C.2.5.4, which depict the design flood levels and protection areas containing safety-related equipment. The inspectors conducted a walkdown of the emergency diesel generator (EDG) building. The inspectors also reviewed operating procedures for mitigating external flooding during severe weather to determine if Exelon planned or established adequate measures to protect against external flooding events.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns (71111.04Q – 3 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- Unit 2 and Unit 3 E-1, E-2, and E-3 EDGs with E-4 EDG out-of-service (OOS) on May 4, 2017
- Unit 3 'B' core spray (CS) loop with 'A' CS loop OOS on June 6, 2017
- Unit 3 'A' residual heat removal (RHR) loop with 'B' CS loop OOS on June 12, 2017

The inspectors selected these systems based on their risk-significance relative to the Reactor Safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, TSs, WOs, IRs, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted the system's performance of its intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Exelon staff had properly identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

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

a. Inspection Scope

During the week of June 26, 2017, the inspectors performed a complete system walkdown of accessible portions of the Unit 2 RCIC system to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, surveillance tests (STs), drawings, equipment line-up check-off lists, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors also reviewed electrical power availability, component lubrication and equipment cooling, hanger and support functionality, and operability of support systems. The inspectors performed field walkdowns of accessible portions of the system to verify as-built system configuration matched plant documentation, and that system components and support equipment remained operable. The inspectors confirmed that systems and components were aligned correctly, free from interference from temporary services or isolation boundaries, environmentally qualified, and protected from external threats. The inspectors also examined the material condition of the components for degradation and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related IRs and WOs to ensure Exelon appropriately evaluated and resolved any deficiencies.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05Q – 5 samples)

Resident Inspector Quarterly Walkdowns

a. Inspection Scope

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

- Unit 2 and Unit 3 EDG rooms (PF-132) on April 13, 2017
- Unit 3 emergency battery switchgear rooms (PF-117) on April 25, 2017
- Unit 2 high-pressure coolant injection (HPCI) room (PF-59) on June 16, 2017
- Unit 3 'A' and 'C' CS rooms (PF-13D) on June 30, 2017
- Unit 3 RCIC room (PF-63) on June 30, 2017

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)Internal Flooding Reviewa. Inspection Scope

The inspectors reviewed the UFSAR, the site flooding analysis, and plant procedures to identify internal flooding susceptibilities for the site. The inspectors review focused on the Unit 2 HPCI room during the week of June 12, 2017. The inspectors verified the adequacy of equipment seals located below the flood line, floor and water penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, control circuits, and temporary or removable flood barriers. It assessed the adequacy of operator actions that Exelon had identified as necessary to cope with flooding in this area and also reviewed the CAP to determine if Exelon was identifying and correcting problems associated with both flood mitigation features and site procedures for responding to flooding.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A – 1 sample)a. Inspection Scope

The inspectors reviewed the E-4 EDG heat exchanger (HX) readiness and availability to perform its safety functions on May 4, 2017. The inspectors reviewed the design basis for the component and verified PB's commitments to NRC Generic Letter 89-13, "Service Water System Requirements Affecting Safety-Related Equipment." The inspectors observed actual performance tests for the HXs and reviewed the results of previous inspections of the E-4 HX on May 4, 2017. The inspectors discussed the results of the most recent inspection with engineering staff and reviewed pictures of the as-found and as-left conditions. The inspectors verified that PB initiated appropriate corrective actions for identified deficiencies. The inspectors also verified that the number of tubes plugged within the HX did not exceed the maximum amount allowed.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance
(71111.11 – 2 samples).1 Quarterly Review of Licensed Operator Regualification Testing and Training (1 sample)a. Inspection Scope

The inspectors observed an emergency preparedness drill on April 17, 2017, which involved a simulated anticipated transient without scram complicated by equipment malfunctions which eventually led to an offsite release. The inspectors evaluated operator performance in the control room simulator during the drill and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures.

The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classifications made by the shift manager and the TS action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room
(1 sample)

a. Inspection Scope

The inspectors observed and reviewed the licensed operator performance from the main control room during the activities listed below. The inspectors observed use of and compliance with procedures, crew communications, interpretation, diagnosis, and understanding of plant alarms, use of human error prevention techniques, documentation of activities, and management oversight of the evolution to verify that the crew was following procedures and plant expectations for conduct of operations.

- Unit 2 downpower to inspect the '2B' reactor feed pump linkage on April 12, 2017
- Unit 2 downpower for summer readiness waterbox cleaning on May 12, 2017
- Unit 3 downpower for summer readiness waterbox cleaning on May 19, 2017

The inspectors observed control room briefings and power changes. Additionally, the inspectors observed power changes to verify that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structures, systems, and components (SSCs) performance and reliability. The inspectors reviewed system health reports, corrective action program (CAP) documents, maintenance WOs, and maintenance rule (MR) basis documents to ensure that Exelon was identifying and properly evaluating performance problems within the scope of the MR. For each sample selected, the inspectors verified that the SSC was properly scoped into the MR in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by the Exelon staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2) status.

Additionally, the inspectors ensured that Exelon staff was identifying and addressing common cause failures that occurred within and across MR system boundaries.

- Unit 3 torus level monitoring system on May 1, 2017
- Unit 2 and Unit 3 pump house structural monitoring inspection on June 26, 2017

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 4 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Exelon performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the Reactor Safety cornerstones. As applicable for each activity, the inspectors verified that Exelon personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Exelon performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk.

The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Unit 2 and Unit 3 E-3 EDG planned overhaul on April 5, 2017
- Unit 2 and Unit 3 2 startup (SU) offsite power source planned outage on May 16, 2017
- Unit 2 and Unit 3 'A' control room emergency ventilation planned outage on May 31, 2017
- Unit 2 RCIC planned outage on June 26, 2017

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 6 samples)

a. Inspection Scope

The inspectors reviewed operability determinations (ODs) for the following degraded or non-conforming conditions based on the risk significance of the associated components and systems:

- Unit 2 'K' safety relief valve bellows' leak alarm on April 6, 2017
- Unit 3 torus level recorder degraded on April 13, 2017
- Unit 3 E-233 breaker mechanism degraded on May 15, 2017

- Unit 3 RCIC suppression pool suction valve degraded RCR contacts on May 30, 2017
- Unit 2 and Unit 3 Part 21 on anchor darling double gate disc valves on May 30, 2017
- Unit 2 and Unit 3 degraded bolts on E-3 EDG exhaust manifold on June 13, 2017

The inspectors evaluated the technical adequacy of the ODs to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and UFSAR to Exelon's evaluations to determine whether the components or systems were operable. The inspectors confirmed, where appropriate, compliance with bounding limitations associated with the evaluations, including compliance with in-service testing requirements. Where compensatory measures were required to maintain operability, such as in the case of operator workarounds, the inspectors determined whether the measures in place would function as intended and were properly controlled by Exelon.

b. Findings

Introduction. A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," of very low safety significance (Green) was identified for Exelon not correcting a condition adverse to quality concerning RCR contacts for valves associated with the RCIC system. Specifically, Exelon specified a CA from an October 18, 2013, Unit 3 RCIC EACE to replace RCR contacts after 12 years of service, however, the CA was not correctly implemented. As a result, on January 12, 2017, an RCR contact associated with the Unit 3 RCIC suppression pool suction valve remained in service for 15 years, and exhibited a high resistance failure during a surveillance which resulted in Unit 3 RCIC becoming inoperable.

Description. Peach Bottom's Unit 3 RCIC system is designed to provide makeup water to the reactor vessel during shutdown and/or reactor isolation conditions in order to prevent the release of radioactive materials to the environs as a result of inadequate core cooling. The RCIC system consists of a steam-driven turbine-pump unit and associated valves and piping capable of delivering makeup water to the reactor vessel. The RCIC pump can take suction from the Unit 3 condensate storage tank (CST) or from its safety-related source, the Unit 3 suppression pool.

During the performance of the Unit 3 RCIC quarterly surveillance on October 18, 2013, the Unit 3 RCIC discharge valve (MO-3-13-021) did not open as designed due to high RCR contact resistance. Exelon entered the issue into their CAP as IR 01573674 and performed an EACE. Exelon's EACE noted that the RCR degraded contact had been in service for 12 years, the median replacement age of the same type of contacts at PB that exhibited high resistance failures in the past. Exelon's EACE stated that the relays should perform reliably for 25 years since they are generally self-cleaning due to their mechanical motion. Running rated current through the contacts provides additional protection against corrosion. However, if the relay is not exercised regularly, oxidation and residue will build on the contact surfaces. Normally-closed RCR contacts also exhibit capillary action, drawing in contaminants, and potentially reducing their service life. In order to ensure long term reliability of the equipment, the EACE created a CA to implement a PM to replace the RCR contacts after 12 years of service.

Exelon completed CA 01573674-9 from the EACE on January 24, 2014, by initiating a preventive maintenance change request (PMCR) to create the new PM and replace the applicable contacts after 12 years of service. The CA and the subsequent PMCR were completed, however, the PM creator implemented Revision 0 instead of the current Revision 1 to procedure WC-AA-120, Attachment 2, "PM Change Review Form." The procedure had been previously revised to include an additional step to evaluate whether the new PM was past its initial frequency and, if so, perform a risk review. Since this step was not in the previous revision that the performer implemented, the risk review was not performed. Exelon did not recognize that 56 safety-related RCR contacts had already exceeded 12 years of service life and were susceptible to similar age-related failures. Therefore, corrective maintenance activities were not prioritized to ensure timely resolution.

On January 12, 2017, while performing the Unit 3 RCIC quarterly surveillance, the Unit 3 RCIC suction valve from the suppression pool (MO-3-13-039) failed to reposition to the open safety position. Following troubleshooting and investigation, Exelon concluded that the RCR contact had failed in a similar manner as the October 2013 RCR contact failure. Prior to the quarterly RCIC surveillance, MO-3-13-039 had stroked successfully on January 4, 2017, during a separate instrumentation and control test which involved the transfer of the RCIC pump suction from the CST to the suppression pool. Following the MO-3-13-039 RCR failure, Exelon initiated IRs 03962563 and 03977949, implemented CAs to replace the RCR contact, restored Unit 3 RCIC operability, and risk-informed their corrective maintenance schedule for replacing all RCR contacts that currently exceeded the recommended 12-year service life.

Analysis. Exelon's failure to recognize and correct a condition adverse to quality associated with certain RCR contacts in their Unit 3 RCIC system that had exceeded their 12-year service life, was a PD that was within their ability to foresee and correct and should have been prevented. The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone's objective to ensure the reliability of systems to respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, not recognizing that existing RCR contacts were installed in safety-related equipment beyond their 12-year service life resulted in the failure of the Unit 3 RCIC suppression pool suction valve. The inspectors evaluated the finding in accordance with Exhibit 2 of IMC 0609, Appendix A, "SDP for Findings At-Power," and determined the finding was of very low safety significance (Green) because it did not represent a loss of system function or represent an actual loss of function of at least a single train for longer than its TS allowed outage time of 14 days.

The inspectors determined that the finding has a cross-cutting aspect in Human Performance, Procedure Adherence, because Exelon did not validate that the correct revision of procedure WC-AA-120, Attachment 2, "PM Change Review Form," was used when creating a new PM to replace RCR contacts. [H.8]

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI states that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above requirement from October 18, 2013 to January 12, 2017, Exelon did not establish measures to assure that a condition adverse to quality associated with the replacement of RCR contacts within their 12-year service life were corrected. Specifically, measures were not established to prioritize the replacement schedule according to risk ranking in accordance with Exelon procedure WC-AA-120.

Because this finding was of very low safety significance and was entered into Exelon's CAP as IRs 03962563 and 03977949, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy, **(05000278/2017002-01, Corrective Action Not Implemented Correctly for Replacement of RCIC RCR Contacts)**

1R18 Plant Modifications (71111.18 – 2 samples)

Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed two temporary plant modifications to determine whether the modifications affected the safety function of systems that are important to safety. The inspectors reviewed 10 CFR 50.59 documentation and post-modification testing results, and conducted field walkdowns of the modification to verify that the temporary modification did not degrade the design bases, licensing bases, and performance capability of the affected systems.

- Unit 2 drywell high radiation monitor alarm temporary modification on June 2, 2017
- Unit 2 and Unit 3 engineering change for flow test of emergency service water (ESW) to emergency core cooling system (ECCS) coolers on June 15, 2017

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 5 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests (PMTs) for the maintenance activities listed below to verify that procedures and test activities tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with the information in the applicable licensing basis and/or design basis documents, and that the test results were properly reviewed and accepted and problems were appropriately documented. The inspectors also walked down the affected job site, observed the pre-job brief and post-job critique where possible, confirmed work site cleanliness was maintained, and witnessed the test or reviewed test data to verify quality control hold point were performed and checked, and that results adequately demonstrated restoration of the affected safety functions.

- Unit 2 and Unit 3 E-3 EDG liner replacement on April 6 – 7, 2017
- Unit 2 and Unit 3 2SU startup offsite power source system outage window (SOW) on May 18, 2017
- Unit 3 'A' CS SOW on June 6, 2017
- Unit 2 hydraulic control unit (HCU) 18-07 diaphragm replacement on June 9, 2017
- Unit 2 RCIC system valve testing on June 27, 2017

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 5 samples)a. Inspection Scope

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

- Unit 2 elevated reactor coolant system (RCS) leakage April 5, 2017 (RCS)
- Unit 2 and Unit 3 emergency cooling tower functional testing on April 14, 2017 (IST)
- Unit 2 'A' CS loop pump, valve, and flow testing on April 18, 2017
- Unit 3 CS time delay relay safety injection initiation testing on April 27, 2017
- Unit 2 and Unit 3 reactor protection system (RPS) testing on May 30, 2017

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness1EP6 Drill Evaluation (71114.06 – 1 sample)Emergency Preparedness Drill Observationa. Inspection Scope

The inspectors evaluated the conduct of a routine emergency drill on April 17, 2017, to identify any weaknesses and deficiencies in the classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the control room simulator and technical support center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the station drill critique to compare inspector observations with those identified by Exelon staff in order to evaluate Exelon's critique and to verify whether the Exelon staff were properly identifying weaknesses and entering them into the CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 RCS Specific Activity and RCS Leak Rate (4 samples)

a. Inspection Scope

The inspectors reviewed Exelon's information submitted for the RCS specific activity and RCS leak rate performance indicator (PIs) for both Unit 2 and Unit 3 for the period of April 1, 2016 through March 31, 2017. To determine the accuracy of the PI data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment PI Guideline," Revision 7. The inspectors also reviewed RCS sample analysis and control room logs of daily measurements of RCS leakage, and compared that information to the data reported by the PI. Additionally, the inspectors observed surveillance activities that determined the RCS identified leakage rate, and chemistry personnel taking and analyzing an RCS sample.

- Unit 2 RCS Activity (BI01)
- Unit 3 RCS Activity (BI01)
- Unit 2 RCS Leakage (BI02)
- Unit 3 RCS Leakage (BI02)

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 2 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Exelon entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended condition report screening meetings. The inspectors also confirmed, on a sampling basis, that, as applicable, for identified defects and non-conformances, Exelon performed an evaluation in accordance with 10 CFR Part 21.

b. Findings

No findings were identified.

.2 Annual Sample: Main Stack Radiation Monitor Reliability Issues (1 sample)

a. Inspection Scope

The inspectors performed an in-depth review of Exelon's IRs that identified reliability issues related to the main stack radiation monitor. These IRs reflected a variety of issues including, but not limited to, ventilation problems, inadequate sample flow through the monitor, trouble alarms, and communications problems. The inspectors assessed Exelon's problem identification threshold, cause analyses, extent of condition reviews, compensatory actions, and the prioritization and timeliness of Exelon's CAs to determine whether Exelon was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed CAs were appropriate. The inspectors compared the actions taken to the requirements of Exelon's CAP and 10 CFR 50, Appendix B. In addition, the inspectors interviewed personnel and observed activities to assess the effectiveness of the implemented CAs.

b. Findings and Observations

No findings were identified.

The main stack radiation monitoring system (RMS) is non-safety related and includes equipment that monitors the main stack effluent (normal range on Channel A, RI(Y)-0-17-050A) and the main stack effluent (wide range on Channel B, RI(Y)-0-17-050B). The main stack effluent normal and wide range radiation monitor detects the radioactivity of the main stack effluent during normal operating conditions. The radiation is continuously indicated and recorded, and abnormal conditions are annunciated in the control room. If an abnormal condition is detected, the radiation monitoring system provides an input to PCIS, which is used in the containment purge valve closure circuitry. The 'A' main stack radiation monitor indicating scale is limited to events that would be classifiable as up to an Unusual Event. The 'B' main stack radiation monitor is considered a Category 1 instrument per EP-AA-121-F-07, since its indicating scale would identify events up to the General Emergency Event classification.

The inspectors reviewed IRs dating back to 2013 to assess the reliability of both main stack radiation monitors and to identify any discernible performance trends. The inspectors noted a myriad of different issues identified in these IRs ranging from, but not limited to, inadequate or erratic main stack dilution flow alarms, communications issues, inadequate sample flow and/or loss of the operate lights for the monitors in the control room.

A review of IRs pertaining to inadequate or erratic dilution flow alarms shows that the vast majority of these alarms were momentary and generally reset quickly. These alarms occur whenever indicated main stack ventilation flow drops below 11,200 scfm. Troubleshooting was not always successful in identifying a cause. For example, IR 02512479 documented a case in which the red pen for FRS-0470 was momentarily less than 11,200 scfm and then quickly returned to 12,500 scfm and the alarm reset. There was no change in ventilation configuration during this event. However, some of these changes in flow were attributed to rapid changes in atmospheric conditions.

Regarding communications issues, IRs 2438913 and 2453111 documented these types of problems that were eventually traced to bad RMS high voltage and low voltage power supplies, which were subsequently replaced. Initial component troubleshooting was unsuccessful at correcting the problem. However, once the power supplies were replaced, the main stack monitors began to operate more reliably.

The last category of IRs identified issues with inadequate sample flow and/or loss of the operate lights for the stack monitors in the control room. Many of the IRs were in this category. IR 01538726 describes a problem of this type with the 'B' main stack monitor.

A sample flow rate of at least 0.5 scfm is required for RI(Y)-0-17-050B to maintain accurate indication of concentration and release rate. If sample flow drops below 0.5 scfm in the sample line, a "main stack rad monitor trouble/bypass" alarm will be received in the control room and the green operate lights on RI(Y)-0-17-050B will extinguish notifying operators of a degraded condition. If the alarm stays in for more than 60 seconds, a microprocessor for RY-0-17-050B will turn the sample pump off disabling the monitor and causing it to become inoperable.

In this case, the cause was determined that the local indicator received a low flow signal (loss of isokinetic flow) for more than 60 seconds which caused the indicator to shut off the sample pump as expected per the design. Based on the troubleshooting results documented in A1944423 and interview with technicians who worked on the radiation monitor following the event, there was no direct evidence of the cause of the loss of isokinetic flow condition. Moisture intrusion in the sample line was the suspect cause, but was never definitively proven. After troubleshooting, the system was restored to an operable status.

Additional problems occurred with inadequate sample flow and/or loss of the operate lights for the stack monitors in the control room. Because of this, Exelon decided to replace the sample pumps in February 2017 and the inspectors noted that there have not been any instances since then related to inadequate sample flow and/or loss of the operate lights for the stack monitors in the control room.

The inspectors also conducted a walk down of the main stack RMS which resides in a small building adjacent to the main stack. The walk down identified no deficient conditions with either the sample pumps or the sample tubing which was properly mounted to its design supports. There were no system leaks nor were there any signs of previous leakage (stains, etc.). The area was well lit and appeared to be well maintained. No deficiencies were identified.

In conclusion, a number of IRs written to document issues with the main stack RMS. Many of these issues involved short duration or temporary conditions that were either self-correcting or corrected with minimal troubleshooting. Replacement of the sample pumps in February 2017 has significantly reduced the most frequent issues related to inadequate sample flow and/or loss of the operate lights for the stack monitors in the control room. A walk down of the system showed good material condition with no deficiencies being identified. Based on these actions, it appears that Exelon has taken reasonable actions to maintain the reliability of the main stack RMS.

.3 Semi-Annual Trend (1 sample)

a. Inspection Scope

The inspectors performed a semi-annual review of site issues to identify trends that might indicate the existence of more significant safety issues. As part of this review, the inspectors included repetitive or closely-related issues that were documented by Exelon in trend reports, site PIs, major equipment problem lists, system health reports, MR assessments, and maintenance or CAP backlogs.

The inspectors also reviewed Exelon's CAP database for the past two quarters to assess IRs written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRC's daily IR review (Section 4OA2.1). The inspectors reviewed the Exelon quarterly trend reports for the past two quarters to verify that Exelon personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings were identified.

The inspectors evaluated a sample of IRs generated during the past two quarters by departments that provide input to the quarterly trend reports. The inspectors determined that, in most cases, the issues were appropriately evaluated by Exelon staff for potential trends and resolved within the scope of the CAP. The problem identification and resolution inspection team (IR 2017007) and the resident inspectors identified an adverse trend of untimely CAs for known degraded conditions adverse to quality.

The inspectors identified that, in general, conditions adverse to quality had been appropriately identified in the field and documented in the CAP. However, multiple examples had been identified where the CAs had been mischaracterized as enhancements (ACITs) or the CAs had not been implemented in a timely manner to resolve conditions adverse to quality. Specific examples included: local leak-rate test (LLRT) failure trend on CAC/CAD, '2C' CS elevated motor vibrations, design inputs to safety-related intake structure level instruments, and feedwater check valve PM deferrals. The station acknowledged the trend and initiated IR 3992162 to review this matter. Exelon implemented prompt CAs, which included enhanced CAP oversight, additional CAP action tracking mechanisms, and fleet-wide benchmarking to improve CAP performance.

The inspectors discussed these issues with various station personnel, including station management. Station management acknowledged the issues, and verified they were captured in the CAP. The inspectors determined that Exelon has implemented CAs commensurate with the safety significance. The inspectors will continue to evaluate the long term effectiveness of the CAs in addressing the adverse trend.

b. Findings

No findings were identified.

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

(Closed) Licensee Event Report (LER) 05000277; 278/2017-001-00: EDG Exhaust Stacks Nonconforming Design for Tornado Missile Protection

a. Inspection Scope

On January 9, 2017, it was determined that PB's EDGs do not conform with the licensing basis for protection against tornado-generated missiles. The exhaust stacks for the four on-site EDGs extend approximately seven feet above the roof of the EDG building. In the event of a tornado, debris generated from the tornado could strike the exhaust stacks and, if at a sufficient mass and velocity, could crimp the exhaust stacks in a manner that would affect EDG operation.

As a result of the non-conforming condition, on January 9, 2017, at 1530, all four EDGs were declared inoperable. Compensatory measures were put in place and, in accordance with NRC guidance contained in Enforcement Guidance Memorandum (EGM) 15-002, the EDGs were returned to an operable but non-conforming status. There are no actual consequences as a result of the non-conforming condition. This LER is closed.

b. Findings

Description. 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that the applicable regulatory requirements and the design basis for SSCs are correctly translated into specifications, drawing, procedures, and instructions. Contrary to the above, Exelon failed to correctly translate the design basis for protection against tornado-generated missiles into their specifications and procedures. Specifically, Exelon did not adequately protect Unit 2 and Unit 3's EDG exhaust stacks from tornado-generated missiles.

Exelon documented the condition adverse to quality in their CAP under IR 3961028 and took immediate compensatory actions. The inspectors evaluated Exelon's immediate compensatory measures, which included verifying that procedures are in place, equipment was appropriately staged, and training is current for performing actions in response to a tornado to preserve EDG operability.

Enforcement. Because this violation was identified during the discretion period covered by EGM 15-002, Revision 1, "Enforcement Discretion for Tornado Generated Missile Protection Non-Compliance," (ML16355A286) and because Exelon has implemented compensatory measures, the NRC is exercising enforcement discretion, is not issuing enforcement action, and is allowing continued reactor operation.

4OA6 Meetings, Including ExitQuarterly Resident Exit Meeting Summary

On July 14, 2017, the inspectors presented the inspection results to Mr. Pat Navin, Site Vice President, and other members of Exelon's staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION**KEY POINTS OF CONTACT**Exelon Generation Company Personnel

P. Navin, Site Vice President
 M. Herr, Plant Manager
 N. Alexakos, Emergency Preparedness Manager
 J. Armstrong, Regulatory Assurance Manager
 S. Belitsky, Assistant Maintenance Manager
 P. Breidenbaugh, Maintenance Director
 J. Chizever, Engineering Manager
 D. Dullum, Regulatory Assurance Engineer
 C. Dye, Senior Engineer
 S. Griffith, Manager Site Security
 E. Haupin, Senior Work Week Manager
 D. Henry, Engineering Director
 D. Hild, Shift Operations Superintendant
 B. Holmes, Radiation Protection Manager
 J. Koester, Fire Marshall
 P. Kester, Senior Engineer
 J. Mann, Senior Engineer
 H. McCrory, Radiation Protection Support Manager
 M. Retzer, Senior Engineering Manager
 D. Turek, Operations Director
 C. Weichler, Senior Manager Ops Support & Services
 M. Weidman, Work Management Director

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

05000278/2017002-01	NCV	Corrective Action Not Implemented Correctly for Replacement of RCIC RCR Contacts (Section 1R15)
---------------------	-----	---

Closed

05000277;278/2017-001-00	LER	EDG Exhaust Stacks Nonconforming Design for Tornado Missile Protection (Section 4OA3)
--------------------------	-----	---

LIST OF DOCUMENTS REVIEWED

* -- Indicates NRC-identified

Section 1R01: Adverse Weather ProtectionProcedures

OP-AA-108-107-1002, Interface Procedure Between BGE/COMED/PECO and Exelon Generation (Nuclear/Power) for Transmission Operations, Revision 10
 WC-AA-107, Seasonal Readiness, Revision 18 WC-AA-8003, Interface Procedure Between BGE/COMED/PECO and Exelon Generation (Nuclear/Power) for Design Engineering and Transmission Planning Activities, Revision 7

IRs

4006216 3996548 2660741 2700034

Drawings

A-490, Barrier Plans CW Pump Structure, Emergency Cooling Tower and EDG Building, Revision 5
 PS-815, Penetration Seal Locations, EDG Room 815, Revision 0
 PS-816, Penetration Seal Locations, EDG Room 816, Revision 0
 PS-817, Penetration Seal Locations, EDG Room 817, Revision 0
 PS-818, Penetration Seal Locations, EDG Room 818, Revision 0
 PS-819, Penetration Seal Locations, EDG Room 819, Revision 0

Section 1R04: Equipment AlignmentProcedures

COL 13.1.A-2, RCIC System, Revision 24
 SO 10.1.B-3 COL, RHR Common Valve Set Up for Automatic Operation, Revision 4
 SO 13.1.A-2, RCIC System Alignment for Automatic or Manual Initiation, Revision 14
 SO 14.1.A-3B COL, CS System Loop B, Revision 11
 SO 52A.1.A, Diesel Generator Lineup for Automatic Start, Revision 14
 SO 52A.1.A-1 COL, E-1 Diesel Generator Normal Standby, Revision 13
 SO 52A.1.A-2 COL, E-2 Diesel Generator Normal Standby, Revision 15
 SO 52A.1.A-3 COL, E-3 Diesel Generator Normal Standby, Revision 14
 ST-O-013-350-2, RCIC Valve Alignment and Filled and Vented Verification, Revision 5

IR

3966560

Drawings

M-362, CS Cooling System, Revision 3
 6280-M-111, Radwaste Bldg. Elevation 116', Revision 28
 6280-M-359, RCIC Systems, Revision 50
 6280-M-360, RCIC Pump Turbine Details, Revision 56
 6280-M-360, RCIC Pump – Turbine Details Lube Oil and Control System, Revision 47

Section 1R05: Fire Protection

Procedures

FSG-031, Establishing Battery Room and Switchgear Room Ventilation, Revision 0
OP-AA-201-009, Control of Transient Combustible Material, Revision 19

IR

3973134

Miscellaneous

PM-0736, Battery Room Hydrogen Concentration, Revision 2

Section 1R06: Flood Protection Measures

AR

02651755

IR

3963696

Drawings

Drawing A-484, Barrier Plans Elevation 91'6", Revision 8
Drawing PD-25, Sheet Number 1, Typical Penetration Seal Detail Link Seals, Revision 0

Miscellaneous

DBD No. P-T-09, Internal Hazards, Revision 11

Section 1R07: Heat Sink Performance

Procedure

ER-AA-340-1002, Service Water HX Inspection Guide, Revision 6

IRs

2717440 1656431

Miscellaneous

A2024528

Section 1R11: Licensed Operator Requalification Program

Procedure

GP-5-2, Power Operations, Revision 4

Miscellaneous

EP Drill Scenario for April 17, 2017 Drill
May 2017 Summer Readiness Load Profiles for Unit 2 and Unit 3
WW1720 Unit 3 SR SLO Load Drop Activities

Section 1R12: Maintenance Effectiveness

Procedures

ER-AA-450, Structures Monitoring, Revision 6
ER-PB-450-1006, PB Structures Monitoring Instructions, Revision 4

IRs

1454054 2716197 3995751 *4002437 4029618

Work Request (WR)

1343237

Miscellaneous

MR Walkdown Sheet, Building 801 & 803, June 2017
System 7, Torus Level Control MR Data Sheets and System Health Reports

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

ER-AA-600, Risk Management, Revision 7
ER-AA-600-1042, On-Line Risk Management, Revision 10
OP-AA-201-012-1001, Operations On-line Fire Risk Management, Revision 1
OP-PB-108-101-1002, PB Protected Equipment Tracking Sheet, Attachment A
OP-PB-108-117-1000, PB Protected Equipment Program, Revision 0
OP-PB-108-117-1000, PB Protected Equipment Program, Revision 3
SO 32.1.A-2, HPSW System Startup and Normal Operations, Revision 19
WC-AA-101, On-Line Work Control Process, Revision 26
WC-AA-101-1006, On-Line Risk Management and Assessment, Revision 2
WC-AA-104, Integrated Risk Management, Revision 23

Miscellaneous

Protective Equipment Tracking Sheets

1R15: Operability Determinations and Functionality Assessments

Procedures

ER-AA-200, PM Program, Revision 2
MA-AA-716-010-1015, Planning Operational Critical Component (OPCC) Tasks, Revision 4
WC-AA-120, PM Database Revision Requirements, Revision 1
WC-AA-120, PM Database Revision Requirements, Revision 0

Drawings

M-1-S-42, Sheet 12, Electrical Schematic Diagram RCIC, Revision 75
6280-M-359, RCIC System, Revision 50
6280-M-360, RCIC Pump Turbine Details, Revision 56

AR

A0152396

WR

254367

IRs

1537143 1573674 3962563 3966838 3971347
3977949 3985185 3985974 3992833 3993428
*4000929 4003596 4005178 4013582 4020964

Miscellaneous

Information Notice 2017-03, Anchor/Darling Double Disc Gate Valve Wedge Pin and Stem-Disc Separation Failures, June 15, 2017

Part 21 Report and Initial Notification for Nova Machine Products Hex Cap Screws Produced from One Heat of Material

TP17-1-112, Recommendations to Resolve Flowserve 10 CFR Part 21 Notification Affecting Anchor Darling Double Disc Gate Valve Wedge Pin Failures, Revision 2

Section 1R18: Plant ModificationsProcedures

AD-PB-101-1003, Temporary Changes to Approved Documents and Partial Procedure Use, Revision 14

AO 33.5.A, RHR CS HPCI RCIC Room Cooler Flush, Revision 2

CC-AA-102, Design Input and Configuration Change Impact Screening, Revision 29

CC-AA-112, Temporary Configuration Changes, Revision 25

RT-I-033-632-2, CS Room Cooler ESW Heat Transfer Test, Revision 11

RT-O-033-600-2, Flow Test of ESW to ECCS Coolers and Diesel Generator Coolers, Revision 26

ST-O-033-300-2, ESW Valve Unit Cooler and ECT Fans Functional Inservice Test, Revision 42

IRs

*4001041 4008877

WO's

04598392 04605980

Miscellaneous

EC 618562, Defeat Nuisance Alarm Associated with Failed Drywell Hi Range Radiation Monitor RI-8103C, Revision 1

EC 619958, RT-O-033-600-2 Flow Test of ESW to ECCS Coolers and Diesel Generators Technical Evaluation for 2DE057 Flow Below Acceptance Criteria

TC 17-0037B, Flow Test of ESW Coolers and Diesel Generator Coolers

Section 1R19: Post-Maintenance TestingProcedures

M-003-200, Preventive Maintenance of HCU, Revision 42

MA-AA-716-012, PMT, Revision 23

SO 53.7.D App 10, Restoration of 2SU SWGR 00A003A, Revision 5

ST-M-014-601-3, 'A' CS LOOP Filled & Vented Verification, Revision 1

ST-O-003-450-3, Scram Discharge Vent and Drain Valve Functional Test, Revision 12

ST-O-013-301-2, RCIC Pump, Valve, Flow and Unit Cooler Functional and Inservice Test Revision 48

ST-O-052-213-2, E-3 Diesel Generator Slow Start Full Load and IST Test, Revision 21

ST-O-094-400-3(2), Stroke Time Testing of Valves for Pre-Maintenance or PMT Testing, Revision 5

Drawings

6280-M-359, RCIC System, Revision 50

WOs

04240503	04245346	04246919	04270498	04270503
04270516	04296583	04611913		

Section 1R22: Surveillance TestingProcedures

ER-AA-425-1001, Surveillance Test Interval STI Evaluation Form, Revision 1
 GP-32, Administrative Monitoring RCS Leakage, Revision 2
 LS-AA-2100, Monthly Elements for NRC RCS Leakage, Revision 5
 SI2M-60F-RTA-A2M2, Response Time Test of Unit 2 RPS Channels A1 and A2 Scram Relays, Revision 0
 SI2M-60F-RTB-B2M2, Response Time Test of Unit 2 RPS Channels B1 and B2 Scram Relays, Revision 0
 SI3K-14-TDR-B2C2, Calibration/Functional Check of 'D' CS Pump Start Time Delay Relays 14A-K19B and 14A-K20B, Revision 5
 SI3K-14-TDR-B1C2, Calibration/Functional Check of 'B' CS Pump Start Time Delay Relays 14A-K17B and 14A-K18B, Revision 5
 SI3M-60F-RTA-A2M2, Response Time Test of Unit 3 RPS Channels A1 and A2 Scram Relays, Revision 0
 SI3M-60F-RTB-B2M2, Response Time Test of Unit 3 RPS Channels B1 and B2 Scram Relays, Revision 0
 ST-O-014-301-2, CS Loop 'A' Pump, Valve, Flow, and Cooler Functional and Inservice Test, Revision 38
 ST-O-033-300-2, ESW, Valve, Unit Cooler, and ECT Fans Functional Inservice Test, Revision 42

IRs

2725800	3998048	3999530	3999563	3999705
---------	---------	---------	---------	---------

Drawings

M-1-S-40, Electrical Schematic CS, Sheet 17, Revision 57
 M-1-S-54, Electrical Schematic Diagram Reactor Protection System, Sheet 5, Revision 87

Miscellaneous

ST Interval Evaluation PB-15-03 – MSIV Partial Closure and RPS Input Functional Test
 TS 1.1 Definitions, Channel Functional Test
 UFSAR Section 7.2.3.9, RPS Instrumentation

Section 1EP6: Drill EvaluationMiscellaneous

EP Drill Scenario for April 17, 2017 Drill

Section 4OA1: Performance Indicator VerificationProcedures

GP-32, Administrative Monitoring RCS Leakage, Revision 2
 LS-AA-2100, Monthly Elements for NRC RCS Leakage, Revision 5
 ST-C-095-820-2, Determination of Dose Equivalent mCi/gm I-131 in Primary Coolant, Revision 5

Miscellaneous

NEI 99-02, Regulatory Assessment PI Guidance, Revision 7

Section 40A2: Problem Identification and Resolution

Procedures

PI-AA-120, Issue Identification and Screening Process, Revision 6

PI-AA-125, CAP, Revision 4

PI-AA-125-1001, Root Cause Evaluation Manual, Revision 2

PI-AA-1001, Performance Improvement Integrated Matrix, Revision 3

IRs

01538726	01628078	02438913	02453111	02453666
02454434	02454499	02456161	02457010	02457374
02457517	02457994	02458532	02460662	02473954
02479228	02481139	02490904	02491280	02504170
02512479	02523675	02588204	02604126	02605650
02652413	02668568	02678456	02681200	02682145
02682584	02698151			

Miscellaneous

Control Room Guide for Substitute Dilution Flow Values

Trend Report for the First and Second Quarters 2017

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

IRs

3961028	3961479
---------	---------

LIST OF ACRONYMS

AC	alternating current
ASD	adjustable speed drive
CA	corrective action
CAP	corrective action program
CFR	<i>Code of Federal Regulations</i>
CR	condition report
CS	core spray
CST	condensate storage tank
DG	diesel generator
EACE	equipment apparent cause evaluation
ECCS	emergency core cooling system
EDG	emergency diesel generator
ESW	emergency service water
HCU	hydraulic control unit
HPCI	high-pressure coolant injection
HX	heat exchanger
IMC	inspection manual chapter
IR	issue report
LER	licensee event report
LLRT	local leak rate test
MR	maintenance rule
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OD	operability determination
OOS	out of service
PARS	publicly available records
PB	Peach Bottom Atomic Power Station
PD	performance deficiency
PI	performance indicator
PM	preventive maintenance
PMCR	preventive maintenance change request
PMT	post-maintenance testing
RCIC	reactor core isolation cooling
RCR	reverse control relay
RCS	reactor coolant system
RPS	reactor protection system
RG	regulatory guide
RHR	residual heat removal
RMS	radiation monitoring system
RPS	reactor protection system
RTP	rated thermal power
SDP	significance determination process
SOW	system outage window
SSCs	structures, systems, and components
ST	surveillance test
TS	technical specification
UFSAR	Updated Final Safety Analysis Report
WOs	work orders