UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 26, 2019

Mr. Michael Gallagher
Vice President, License Renewal
and Decommissioning
Exelon Generation Company, LLC
200 Exelon Way
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION UNITS 2 AND 3 - REPORT FOR THE OPERATING EXPERIENCE REVIEW AUDIT REGARDING THE SUBSEQUENT LICENSE RENEWAL APPLICATION REVIEW (EPID NO. L-2018-RNW-0012)

Dear Mr. Gallagher:

By letter dated July 10, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18193A689), the Exelon Generation Company, LLC, (Exelon) submitted to the U.S. Nuclear Regulatory Commission (NRC or staff) an application to renew the Renewed Facility Operating License Nos. DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station, Unit 2 and 3 (Peach Bottom), respectively. Exelon submitted the application pursuant to Title 10 of the *Code of Federal Regulations* Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," for subsequent license renewal. The NRC staff completed its operating experience review audit at the Excel Services Corporation offices in Rockville, Maryland, from September 17 through September 27, 2018, in accordance with the operating experience review audit plan (ADAMS Accession No. ML18249A280). The audit report is enclosed.

If you have any questions, please contact me by telephone at 301-415-2981 or by e-mail at Bennett.Brady@nrc.gov

Sincerely,

/RA/

Bennett Brady, Senior Project Manager
License Renewal Projects Branch
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosure:
Audit Report

cc w/encl: Listserv

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION UNITS 2 AND 3 - REPORT FOR THE OPERATING EXPERIENCE REVIEW AUDIT REGARDING THE SUBSEQUENT LICENSE RENEWAL APPLICATION REVIEW (EPID NO. L-2018-RNW-0012) DATED February 26, 2019

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ADAMS Accession No. ML19029B121 *concurred by email

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DATE	2/26/2019	2/20/2019	2/25/2019	2/25/2019

OFFICE	PM:MRPB:DMLR
NAME	BBrady
DATE	2/26/2019

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Audit Report

Operating Experience Review Audit Regarding the Peach Bottom Atomic Power Station Units 2 and 3, Subsequent License Renewal Application

September 17-27, 2018

Division of Materials and License Renewal
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Enclosure

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION, DIVISION OF MATERIALS AND LICENSE RENEWAL

Docket Nos:	50-277 and 50-278
License No:	DPR-44 and DPR-56
Licensee:	Exelon Generation Company, LLC
Facility:	Peach Bottom Atomic Power Station, Units 2 and 3
Location:	Rockville, Maryland
Dates:	September 17 through 27, 2018
Reviewers:	B. Allik, Materials Engineer, Division of Materials and License Renewal (DMLR) A. Buford, Structural Engineer, Division of Engineering (DE) A. Chereskin, Chemical Engineer, DMLR G. Cheruvenki, Materials Engineer, DMLR S. Cuadrado de Jesus, Structural Engineer, DE R. Fitzpatrick, Electrical Engineer, DE B. Fu, Materials Engineer, DMLR W. Gardner, Physical Scientist, DMLR J. Gavula, Mechanical Engineer, DMLR D. Hoang, Structural Engineer, DE K. Hoffman, Materials Engineer, DMLR W. Holston, Senior Mechanical Engineer, DMLR A. Hovanec, Materials Engineer, DMLR A. Huynh, Materials Engineer, DMLR J. Jenkins, Materials Engineer, DMLR A. Johnson, Materials Engineer, DMLR S. Jones, Sr. Reactor Systems Engineer, Division of Safety Systems N. Khan Electrical Engineer, DE B. Lehman, Structural Engineer, DE J. Lopez, Structural Engineer, DE S. Min, Materials Engineer, DMLR D. Nguyen, Electrical Engineer, DE A. Prinaris, Structural Engineer, DE A. Rezai, Materials Engineer, DMLR M. Sadollah, Electrical Engineer, DE G. Thomas, Senior Structural Engineer, DE

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Tania Martinez-Navedo, Chief
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Division of Engineering

Brian Wittick, Chief
Structural Engineering Branch
Division of Engineering

Report for the Operating Experience Review Audit
Peach Bottom Atomic Power Station, Units 2 and 3
Subsequent License Renewal Application

1. Introduction

The U.S. Nuclear Regulatory Commission (NRC or the staff) conducted an audit of Exelon Generation Company, LLC (Exelon) Peach Bottom Atomic Power Station (PBAPS) Units 2 and 3 (PB or the applicant's) plant-specific operating experience (OpE), as part of the staff's review of the Peach Bottom subsequent license renewal application (SLRA) at the EXCEL Services Corporation located in Rockville, Maryland, from September 17 through 27, 2018. The purpose of the audit was for the NRC staff to perform an independent review of plant specificplant-specific OpE to identify examples of age-related degradation, as documented in the applicant's corrective action program database. The regulatory bases for the audit was Title 10 of the Code of Federal Regulations, Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," (10 CFR Part 54). The staff also considered the guidance contained in NUREG-2192, Rev. 0, "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants" (SRP-SLR), dated July 2017, and NUREG-2191, Rev. 0, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report," dated July 2017.

The identified OpE examples will be further evaluated during the staff's subsequent technical review and auditing of aging management programs (AMPs), time-limited aging analyses (TLAAs) and aging management review (AMR) line items. The staff's identification and evaluation of pertinent OpE and additional related documentation, provides a basis for the staff's conclusions on the ability of the applicant's proposed AMPs and TLAAs to manage the effects of aging in the period of extended operation.

2. Audit Activities

The following sections discuss the areas reviewed by the staff and identified examples of pertinent OpE.

SLRA AMP B.2.1.1, ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "flaw," "age," "crack," "brittle," "weld," "bolt," "buried," "corrosion," "damage," "fracture," "leak," "scc," "piping," "rupture," "nickel-alloy," "min wall," "rust," "pwscc," "mechanical wear," "indication," "qualification," "thread," "through wall," "transgra," "vessel," "vessel internals," "wall loss," "wall thin," "wastage," "wear," and "pit."

The table below lists the documents that were reviewed by the staff and were found relevant to the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the (Safety Evaluation Report (SER).

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-02546998	ASME percentage limitations not met	08/27/2015
AR-04003429	ISI database descrepancies (reactor head stud bolting)	04/27/2017
AR-02564068	P3R20 ISI expanded scope requirements	10/01/2015
AR-01554519	PBAPS UNIT 3 RPV head weld flaw documentation	09/05/2013
AR-02704854	HPSW leak from pipe	08/16/2016
AR-00823513	P2R17 ISI indications in weld	9/28/2008
AR-01118530	P2R18 flaw indication on RPV head to flange weld	09/27/2010
AR-00919813	EOC piping examination for ESW root cause	05/14/2009
AR-01587735	U3 LR CIA need tracking for committment	11/20/2013
AR-01568638	Rejectable weld flaw FW-DD-25	10/07/2013
AR-00811174	P2R17 3 ISI weld examinations not scheduled	08/26/2008

SLRA AMP B.2.1.2, Water Chemistry

Audit Activities. The staff conducted an independent search of applicant's operating experience database using keywords: "chloride," "conductivity," crack," "dissolved oxygen," "fluoride," "HWC [hydrogen water chemistry]," "hydrogen water," "iron," "noble," "organic," "oxygen," "PWSCC [pressurized-water stress corrosion cracking]," "SCC [stress corrosion cracking]," "stress," "sulfate," and "zinc."

The table below lists the documents that were reviewed by the staff and were found relevant to the Water Chemistry program. These documents were identified in the staff's search of applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01410743	Electrochemical corrosion potential exceeded 230 millivolts for Unit 2 due to the Unit 2 refueling outage 19 shutdown	09/10/2012
AR-01468207	Relation between Unit 3 reactor water clean-up system and iron injection on chloride concentration	01/29/2013

Document	Title	Revision / Date
AR-01136659	Chemistry deep dive results and recommended actions	11/06/2010
AR-01697416	Chemistry department rated 'chronic yellow' by nuclear oversight	08/28/2014
AR-01691387	Unit 3 total organic carbon (TOC) above limit	08/11/2014
AR-01601996	Adverse trend – torus TOC	12/30/2013
AR-01601661	Unit 2 TOC above limit	12/29/2013

SLRA AMP B.2.1.3, Reactor Head Closure Stud Bolting

Audit Activities. During its audit, the staff had discussions with the applicant's staff and reviewed onsite documentation provided by the applicant. The table below lists Exelon documents that were reviewed by the staff and were found relevant to the audit.

The table below lists the documents that were reviewed by the staff and were found relevant to the Reactor Head Closure Stud Bolting program. These documents were identified in the staff's search of applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
PI-AA-115-1003	Processing OE evaluations	REV. 4
M-004-400	Reactor pressure vessel reassembly	REV. 43
M-004-400	Reactor pressure vessel disassembly	REV. 38
P2R18-168976-HE2-ISI	In-service inspection report for Peach Bottom Power Station	10/2010
P3R18-3Q11-NDE-2LO14H-ISI	In-Service inspection report for Peach Bottom Power Station	09/2011
H5814	Reactor head spare stud CMTR	REV. 0 11/08/1971
AR-003N9506	Peach Bottom Units 2 And 3, materials properties and test results for closure studs, nuts, washers and bushing	REV. 0 12/2016
AR-00834915	Stuck stud #80, lessons learned for refuel floor	09/15/2008

SLRA AMP B.2.1.4, BWR Vessel Id Welds

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Crack," "SCC," "Vessels," and "Weld."

No significant plant specificplant-specific operating experience associated with AMP B.2.1.4, BWR Vessel ID Welds was noted by the staff during its review.

SLRA AMP B.2.1.5, BWR Stress Corrosion Cracking

Audit Activities. The staff conducted an independent search of Exelon's operating experience database.

The table below lists the documents that were reviewed by the staff and were found relevant to BWR Stress Corrosion Cracking. These documents were provided by Exelon or were identified in the staff's search of Exelon's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED DURING THE AUDIT

Document	Title	Revision / Date
AR-04014529	"P3R20 ISI: RWCU Weld 12-I-1C Limited Coverage" the licensee identified that an inspection coverage of 84.2% of the area was obtained in lieu of the required amount of 90%	06/13/2017
AR-02582071	ISI scope IGSCC weld RWCU in PBAPS,Unit 2. During a focused area self assessment (fasa) of ISI program it was identified as a total of 5 IGSCC Category D welds in the RWCU systems were erronesly not scheduled for re-examinations set at every 6 year interval	11/9/2015
AR-01479610	PBAPS Unit 2, had determined not to mitigate previously selected 15 IGSCC category D welds for MSIP treatment	06/14/2013
AR-04047787	3R21 RPV instrumentation nozzle examinations; a leakage was discovered during a leakage test in one of the water level instrumentation nozzles located on the top-of-active fuel at one of the BWR Units in the fleet	09/30/2017
AR-04068795	During the ISI inspections (P3R21) at PBAPS, Unit 3, two indications were identified in RWCU Weld 12-13-12	09/25/2018

SLRA AMP B.2.1.6, BWR Penetrations

Audit Activities. The staff conducted an independent search of Exelon's operating experience database.

No significant plant-specific operating experience associated with the BWR Penetrations was noted by the staff during its review.

SLRA AMP B.2.1.7, BWR Vessel Internals

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "crack," "SCC," "vessels," and "weld."

The table below lists the documents that were reviewed by the staff and were found relevant to the BWR Reactor Water Vessel Internals. These documents were identified in the staff's search of the applicant's operating experience database. The results of the review of relevant operating experience is documented in the In Office Audit Report.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-2738604	"P2R16 jet pump 17" in outage P2R21, the licensee reevaluated indications in weld DF-2 that were first identified in P2R16. There was a reduction in limiting flaw length acceptance criterion	11/08/2016
AR-2734507	"2R21 IVVI replacement steam dryer" the licensee identified cracked welds in the replacement steam dryer hold down rods. This condition report is referenced in the report titled "results of visual inspection of Unit 2 replacement steam dryer" dated December 7, 2016 (ADAMS No. ML16342b621) which was required by Operating License Condition 2.c(15)(g)	10/30/2016
AR-2570717	"3R20 Core Shroud UT Exam" the licensee found atypical indications identified as possible IGSCC during the UT exam of Weld H4; further evaluation proposed by licensee	10/14/2015
AR-1265631	"P3R18 core spray sparger bracket" the licensee identified unreportable indications of length about 1 inch during IVVI examinations	09/20/2011
AR-1117134	"P2R18 Reexam UT Indication," the licensee identified 2 possible IGSCC indications during the reexam of the tee box weld; total indication length was about 7.5 inches but there had been no growth since initial discovery	09/23/2010
AR-1114823	"P2R18 IVVI Core Spray Piping" the licensee identified two possible IGSCC indications in the reexam of weld P3B1; total indication length was about 3.4 inches; one indication appeared slightly longer than when previously evaluated	09/18/2010
AR-970611	"Jet Pump 9_10 Weld" the licensee identified a crack of unknown cause during the reexam of weld RS-1; total indication length was about 2.4 inches but there had been no growth since the previous exam	09/25/2009
AR-968920	"Jet Pump Main Wedge Wear" the licensee identified new wear during the exam of main wedges on jet pumps 3 and 9; BWRVIP-41 R1 requires scope expansion	09/23/2009

Document	Title	Revision / Date
AR-821459	“P2R17 Core Spray Piping” the licensee identified possible IGSCC indications in the exam of weld P3B1	09/23/2008
AR-820446	“P2R17 Steam Seperator Gusset” the licensee identified possible IGSCC indications during the IVVI exam of several gussets; new indications were found on 4 gussets and change or growth of indications were found on 5 gussets; the licensee identified that this is a non-safety related component not required to be inspected by BWRVIP or ASME; examinations were performed to provide industry OpE	09/21/2008
AR-798768	“Deviation From BWRVIP” the licensee identified a deviation from BWRVIP-76 when the examination frequency for Weld H1 was extended from 6 to 10 years; the licensee resolved the deviation by performing a plant specific evaluation	07/21/2008
AR-2735052	“2R21 Exam Of Steam Dryer Support” the licensee identified new wear during the reexam of steam dryer support brackets	10/31/2016
AR-1392477	“2012 INPO BWRVIP Review” the licensee identified that HWC (hydrogen water chemistry) availability was good, but recommended modifications to improve availability	07/24/2012
AR-4067342	“Jet Pump 9 Aux Wedge Overtravel” the licensee identified significant wear in the vessel side auxiliary wedge. the licensee recommended removal to prevent further damage to the jet pump	10/26/2017
AR-2737278	“2R21 Exam Of Jet Pumps 13 and 18” the licensee identified minor wear during the exam of aux wedges JP13VS and JP18SS; the licensee determined the condition to be acceptable	11/04/2016
AR-2736160	“2R21 Indications Of Shroud” the licensee identified fillet weld breaks and potential for loose parts during IVVI of the jet pumps. the licensee stated this damage was most likely caused during inspection and recommended removal of broken brackets	11/02/2016
AR-2735819	“2R21 Scope Adds And Descopes” the licensee identified several jet pump welds to be added or removed from inspection scope based on updated guidance from BWRVIP-41 R3	11/02/2016
AR-2667801	“2016 BWRVIP FASA Deficiency 1” the licensee identified that several hidden welds were not in accordance with BWRVIP-41 for leakage evaluation; the licensee recommended that core spray and jet pump flaw evaluations be revised to assume leakage from inaccessible welds	05/10/2016
AR-2565404	“3R20 Jet Pump 09 Auxilliary Wedge” the licensee identified new wear on the vessel side aux wedge that would require a scope expansion to the main wedge	10/04/2015
AR-2737370	“2R21 Jet Pump A Loop Adapt” the licensee identified several indications in backing rings during the IVVI of the AD-1 welds. The licensee stated that there was no evidence that the structural weld was degraded	11/04/2016

Document	Title	Revision / Date
AR-2736876	"2R21 Expanded Scope On RS-1" this condition report was written in conjunction with Condition Report 02736616 (see below) and clarifies the expanded scope to meet BWRVIP-41.	11/03/2016
AR-2736616	"2R21 Jet Pump 11-12 RS-1" the licensee identified an indication during IVVI of weld RS-1; the licensee recommended that a determination be made if scope expansion was warranted. Another Condition Report (AT-2736876) discussed scope expansion	11/03/2016
AR-2734940	"2R21 Re-exam Of Core Spray Piping P3B1" the licensee identified no apparent changes in the indications that were identified in previous outages; (Condition Report AR-1265631 documents these indications during previous outage P3R18)	10/31/2016
AR-2734935	"2R21 Jet Pump Adapter Backing Ring" the licensee identified several indications in backing rings during the IVVI of the AD-1 welds; the licensee stated that there was no evidence that the structural weld was degraded	10/31/2016

SLRA AMP Section B.2.1.8, Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "cast," "thermal aging," "CF8," "pump casing," "N-481," "flaw," and "flaw tolerance."

The table below lists the document that was reviewed by the staff and was found relevant to the Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS) Program. This document was provided by Exelon. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-2455499	P2R21 ISI Scope – PIMS AR for ISI inspection of Pump B	02/18/2015

SLRA AMP B.2.1.9, Flow-Accelerated Corrosion

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "cavitat," "CHECWORK," "erosi," "FAC," "flow-accelerated," and "min wall."

The table below lists the documents that were reviewed by the staff and were found relevant to the Flow-Accelerated Corrosion program. These documents were provided by Exelon or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-04079500	Historical maintenance rule failure	11/30/2017
AR-02656237	FAC [flow-accelerated corrosion] scope selection of P3R21 UT piping inspections	04/15/2016
AR-02615405	HPCI turbine inlet drain HI level alarm received	01/21/2016
AR-02568865	Steady stream leak from 3C RHR heat exchanger	10/10/2015
AR-02561767	Erosion in piping and components inspection below t minimum	09/28/2015
AR-02573389	OE review of IER L3-15-31, Unexpected Flow-Accelerated Corrosion	10/19/2015
AR-02392700	FAC FASA DEF No. 2 checworks unexpected output pH value	10/08/2014
AR-01646140	Erosion in piping and component program change management	04/11/2014
AR-01621291	Flow element/flow orifice FAC inspections	02/14/2014
AR-01386703	Benchmarking of FAC Chug meeting June	07/09/2012
AR-00984517	Piping material differs from expected	10/26/2009

SLRA AMP B.2.1.10, Bolting Integrity

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "leak," "cap screw," "SCC," "stress corrosion cracking," "crack," "torque," "preload," "bolt," "moly," and "corro."

The table below lists the documents that were reviewed by the staff and were found relevant to the Bolting Integrity Program. These documents were provided by Exelon or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00877922	Large packing leak on ECW pump discharge valve	02/08/2009
AR-03972629	Small packing leak from HV-3-19-ISC	02/10/2017

Document	Title	Revision / Date
AR-02418492	Packing leak HPSW in the 2D RHR room	11/29/2014
AR-01510178	Verify torque on PSD-3-23-007 flanges	05/03/2013
AR-04033375	Flange leak on MO-3-48-3804B	07/19/2017
AR-00915882	MO-502A Bonnet Bolts Potentially under-torqued	05/05/2009
AR-00820405	P2R17 ISI loose bolts on Unit 2 HPCI suction strainer	09/21/2018
AR-01086963	Torus Dewatering Tank (TDT) drain valve found degraded	07/01/2010
WO C023395	Replace existing valve with new	08/05/2010

SLRA AMP B.2.1.11, Open-Cycle Cooling Water System

Audit Activities. The staff conducted an independent search of Exelon's operating experience database using keywords: "emergency service water (ESW)," "high pressure service water (HPSW)," "emergency cooling water (ECW)," "GL 89-13," "crack," "biofoul," "heat transfer," and "corrosion."

The table below lists the documents that were reviewed by the staff and were found relevant to the Open-Cycle Cooling Water System Aging Management Program. These documents were identified in the staff's search of Exelon's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-04097435	As part of initiative to centralize engineering programs, Generic Letter (GL) 89-13 implementation moved from site engineering programs role to fleet engineering, systems engineering	01/26/2018
AR-04056936	Peach Bottom raw water/GL 89-13 programs credit raw water program NDE work requests towards meeting annual GL 89-13 piping integrity monitoring expectations per ER-AA-340. Raw water program engineer identified inspections previously planned for completion have not been executed during year(s) credited by GL 89-13	09/28/2017
AR-01534045	Stem/disc connection failure on valve HV-V-3-33-503 in April 2013 has prevented flow of service water into ESW. Biocide added to service water is cited in GL 89-13 response as method for complying with Action 1 of GL 89-13. Unit 3 ESW has gone without biocide since early April.	07/10/2013

Document	Title	Revision / Date
AR-01444838	Leak was identified in 'A' ESW supply piping during engineering walkdown. Engineering selected locations to evaluate areas of similar risk in ESW piping	11/27/2012
AR-00721798	GI 89-13 had two consecutive yellow quarters (3rd/4th 2007). Completing check-in assessment by 11/14/2008 will meet ER-AA-1100 requirement to check-in by one year after first yellow quarter	03/14/2008
AR-00871970	2C core spray room cooler heat transfer test performed was evaluated to be unsatisfactory. Recommended action to clean and perform retest	01/26/2009
AR-01039055	Chemistry has not optimized raw water strategy to efficiently monitor and control corrosion in service water systems (e.g., since April 2009, an increase in chlorination with intent to control microbiological growth led to increased corrosion on brass components due to overchlorination)	03/05/2010
AR-1039055-35	Copper corrosion rate in goal since April 2010 for Unit 3 and since May 2010 for Unit 2. Chlorine concentration typically within goal, but sometimes exceeds upper limit and will likely continue until online chlorine monitoring system is installed	12/30/2010
AR-1039055-39	2016 WANO Raw Water AFI cites ineffective chlorination in raw water. "some of the raw water piping is not provided chemical treatment"	09/01/2016
AR-00759277	Circulating water chemistry data indicates that target free residual chlorine concentration was achieved 36% of the time in March 2008	04/04/2008
AR-01020991	2B RHR room cooler evaluated to be unsatisfactory	01/25/2010
AR-03987883	ESW mild steel corrosion inhibitor NALCO 3DT124 becoming obsolete. Vendor offered similar alternative NALCO 3DT424. Chemistry reviewed technical literature and active ingredients are the same, but the polymer is changing.	03/21/2017
AR-01232297	Peach Bottom raw water chemical treatment does not sufficiently protect against corrosion in HPSW system. Implementing biocide/corrosion inhibitor will increase asset protection	06/23/2011

LRA AMP B.2.1.12, Closed Treated Water Systems

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "bacteria," "clog," "cooler, "corros," "foul," "heat exch," "leak," "MIC," and "89-13."

The table below lists the documents that were reviewed by the staff and were found relevant to the Closed Treated Water Systems program. These documents were provided by Exelon or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

SLRA AMP B.2.1.13, Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems

Audit Activities. The staff conducted an independent search of Exelon's operating experience database using keywords: "crane," "corro," "defor," "deflect," "bolt," "crack," "fatigue," and "cycle."

The table below lists the documents that were reviewed by the staff and were found relevant to the Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems. These documents were provided by Exelon or were identified in the staff's search of Exelon's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-02527289	00H016 Gantry Crane Deficiencies	07/13/2015
AR-01361743	License renewal inspections for reactor building cranes	05/02/2012
PROCEDURE M-017-001	Periodic inspection of reactor building cranes	01/11/2013
AR-00901692	Perform inspections per NER-09-11-R	04/01/2009
AR-01653234	Defect identified on E4 EDG overhead crane	04/29/2014
AR-01253042	Deficiencies noted on turbine crane 0BH009	08/18/2011

SLRA AMP B.2.1.14, Compressed Air Monitoring

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "air," "aging," "moist," "chlorine," and "instrument."

No significant plant-specific operating experience associated with the Compressed Air Monitoring program was noted by the staff during its review.

SLRA AMP B.2.1.15, BWR Reactor Water Cleanup System

Audit Activities. The staff conducted an independent search of Exelon's operating experience database.

The table below lists the documents that were reviewed by the staff and were found relevant to BWR Reactor Water Cleanup System. These documents were provided by Exelon or were

identified in the staff's search of Exelon's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
PB-PBD-AMP-XI.M25	Program Basis Document - BWR Reactor Water Cleanup System	Revision 2
ML090930466	NRC letter dated September 15, 1995, "Reactor Water Cleanup (RWCU) System Weld Inspections at Peach Bottom Atomic Power Station, Units 2 and 3 (TAC Nos. M92442 and M92443)"	09/15/1995
Plant OE - XI.M25	Plant OE - XI.M25 BWR reactor water cleanup system aging management program	
Implementing Documents - XI.M25	Implementing Documents - XI.M25 BWR reactor water cleanup system aging management program	
Plant Operating Experience – X1.M2	Water chemistry – plant operating experience – XI.M2 Water Chemistry Program	

SLRA AMP B.2.1.16, Fire Protection

Audit Activities. The staff conducted an independent search of Exelon's operating experience database using keywords: "penetration seal," "fire door," "fire damper," "insulation," "combustible," "carbon dioxide," "CO2," "wall," "ceiling," and "floor."

The table below lists the documents that were reviewed by the staff and were found relevant to the Fire Protection Aging Management Program. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00848237	Random walkdown of seismic gap penetration seals was performed; the seals did not meet acceptance criteria in DWG-3010, Revision 1 ("no voids greater than a depth of 1 inch in surface of seal," "shrinkage of foam away from pipes, tray, or barrier less than 1/8 inches"); the seals were evaluated for repair, compensatory actions, and extent of condition	11/21/2008
AR-04056797	NRC resident identified a link seal in penetration protruding from the wall about 1-2 inches, along with one bolt that was missing; the foam seal on other side is sufficient for fire containment; the link seal was recommended to be repaired or replaced	09/28/2017

Document	Title	Revision / Date
AR-04072454	Door #R31 was found to be leaking and letting excessive air flow through; immediately notified supervision and recommended repair or replacement of door seals	11/08/2017
AR-04059540	Latch on door #388 sticking and intermittently preventing door from latching; immediately notified supervision and recommended investigation and repair	10/05/2017
AR-03949290		12/05/2016
AR-01643697		04/06/2014
AR-01625690		02/25/2014
AR-01381458		06/25/2012
AR-01162732		01/14/2011
AR-00998614		11/26/2009
AR-00996858		11/22/2009
AR-00965783		09/16/2009
AR-00945934		07/26/2009
AR-00848118		11/21/2008
AR-03994441	Door #307 in fan room 165 foot elevation “sticks” when attempting to close due to malfunctioning door handle. Recommend fixing door; immediately posted sign and generated IR	04/05/2017
AR-03801968	Door so rusted that door started to cave in; door will have to be replaced (01/28/2007). Door replacement scheduled for 2012; work was not performed (09/28/2012) Door replacement was not completed in 2012 due to lack of engineering support (10/26/2012).	01/28/2007
AR-02734298	Door would not unlatch when carding out.	10/29/2016
AR-02565724	Door #149 will not latch; took immediate compensatory measures in accordance with SY-PB-101-102; recommended investigation and repair.	10/05/2015
AR-02696748	One cinder block detached from mortar, creating a void around the block. The wall is not an Appendix R fire barrier required for safe shutdown, but it does separate plant computer rooms; evaluated condition such that there is reasonable assurance that the wall will perform intended function.	07/26/2016
AR-01422732	Two deficiencies in fire barrier wall TB2-150-302-S; (1) upper west end corner has 30-40 pound chunk of concrete hanging in place; additional concrete lying below (2) penetration seal 3015 and 3015A-N exhibiting mild inward deterioration; recommend evaluation/inspection of loose concrete and deteriorating penetration material to determine appropriate action	10/05/2012
AR-01342499	Five of seven fire extinguishers available for operations to use as replacements were identified as “no good”	03/19/2012

Document	Title	Revision / Date
AR-02619638	Appearance of leakage near roof along DDFP exhaust header back down in to DDFP room. Recommend scheduling roof inspection to verify insulation and flashing intact in order to avoid risk of roof fire as previously experienced on one of EDGS	01/31/2016
AR-01259015	Fire insulation material was knocked off a steel column. Recommendations made to reapply the fire insulation material to the steel column and inspect the area to identify/fix any other steel that may be missing insulation	09/02/2011
AR-00888533	RB3-091-040-2510 fire barrier penetration failed inspection per its installation detail	03/04/2009
AR-00842348	E-2 EDG room ceiling louver failed and fell out of the ceiling. The resulting opening is a 36” x 4” hole in ceiling. In addition to repair, recommendations made to check all louvers for extent of condition.	11/08/2008
AR-01188313	NRC resident identified caulk was missing or partially missing from the gap around the concrete covers above manholes 16, 17, 18, 40. Caulk is a required part of fire barrier seal	03/16/2011
AR-03947643	Enhancement to E-1400, Sh. 9. E-1400 Sh. 9 describes requirements for cable fire proofing, but does not specify whether cables are to be wrapped as a bundle or as a single cable. Recommend revision to include invididual wrapping requirements up to penetration seal.	11/30/2016
AR-01020308	Several cable trays in overhead have black tape/wrapping with fire proofing material that is peeling and coming off.	01/23/2010
AR-00878889	Approximately 24 feet of fire system piping in each unit circulation pump bay requires insulation to prevent freezing.	02/10/2009
AR-01194716	Maintenance instructions in the field need to include guidance to assess and replace oil contaminated insulation. Enhance procedures and training on risk associated with insulation contaminated with oil.	03/30/2011

SLRA AMP B.2.1.17, Fire Water System

Audit Activities. The staff conducted an independent search of the applicant’s operating experience database using keywords: “biofoul,” “biological,” “block,” “break,” “clog,” “damage,” “deposits,” “drainage,” “fail,” “flow restrict,” “foul,” “hole,” “indication,” “lined,” “lining,” “masonry,” “mortar,” “recur,” “rupture,” “sediment,” “silt,” and “sprinkler.”

The table below lists the documents that were reviewed by the staff and were found relevant to the Fire Water System program. These documents were identified in the staff’s search of the applicant’s operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-791182	A sprinkler head is leaking in the operations manager's office at a rate of one drop every 2 – 3 minutes.	06/7/2008
AR-812251	A sprinkler head is leaking in the third floor northeast corner of the site management building.	08/29/2008
AR-815694	The diesel-driven fire pump (DDFP) y-strainer cooling water inlet is clogged with dirt and debris.	09/9/2008
AR-850043	A one gallon per minute leak was detected in the fire water piping near the Unit 2 condensate pump pit.	11/26/2008
AR-868307	A break in the fire water system sprayed water on the 2C circulating water pump motor exciter cabinet; causing a Unit 2 transient.	01/18/2009
AR-915059	A sprinkler is leaking in the administrative building at a rate of one drop per second.	05/2/2009
AR-935435	A through-wall leak was detected on the DDFP cooling piping.	06/25/2009
AR-936777	A small leak was detected in an elbow for the sprinkler piping near turbine bearing number 5.	06/29/2009
AR-937457	Two piping leaks were detected in the 1-1/2-inch piping associated with the DDFP.	06/30/2009
AR-946274	There is a one drop per minute pinhole leak on the flange weld associated with hand valve, HV-0-57C-12444.	07/27/2009
AR-1031495	A partially blocked main drain was detected during main drain testing.	02/17/2010
AR-1074273	A sprinkler head is leaking in the high bay warehouse at a rate of 15 – 20 drops per minute.	05/27/2010
AR-1087814	A pinhole leak was detected at hand valve, HV-037D-12300.	07/5/2010
AR-01094142	A leak in the fire water header was detected as evidenced by water spraying in the vicinity of 3A moisture separator area.	07/25/2010
AR-1114191	Corrosion was noted on a sprinkler in the moisture separator area.	09/17/2010
AR-1135415	A leak in the discharge piping of the motor-driven fire pump (MDFP) resulted in piping replacement.	11/3/2010
AR-1140078	A pinhole leak was detected downstream of BS-0421 [basket strainer]; spraying 16 milliliters/minute.	11/14/2010
AR-1175779	Four pinhole leaks were detected downstream of HV-037D-12300.	02/15/2011

Document	Title	Revision / Date
AR-1201388	The DDFP has nine small leaks from a downstream elbow.	04/12/2011
AR-1277329	A fire water system leak was detected in the Unit 3 Turbine Building-135, north end.	10/17/2011
AR-1343009	One sprinkler head is leaking in a rebuild area at a rate of 32 drops per minute.	03/20/2012
AR-1349054	One nozzle had very low flow during a deluge system test, RT-O-37B-356-2.	04/2/2012
AR-1357329	One sprinkler head is leaking on the third floor of the administration building at a rate of less than one drop per minute	04/23/2012
AR-1387581	DDFP cooling line y-strainer clogging	07/11/2012
AR-1397594	DDFP cooling line y-strainer clogging	08/5/2012
AR-1446739	A pinhole leak associated with the relief valve for the MDFP was detected, which is leaking at a rate of 30 drops per minute	11/30/2012
AR-1489948	Two sprinkler heads are leaking in the vice president's office, which are leaking at a rate of 1 drop per minute	03/19/2013
AR-1663767	A sprinkle head is leaking in the Unit 2 main turbine lube oil room at a rate of 3 drops per minute	05/23/2014
AR-2382429	Point defects were detected in the internal mortar lining of the fire water system main; there was no evidence of piping damage or corrosion	09/17/2014
AR-2412210	The main drain test procedure, RT-O-37B-2, does not record static and dynamic pressure	11/13/2014
AR-2458840	A sprinkler head is leaking in the administrative building.	02/25/2015
AR-2488219	The DDFP cooling water inlet pressure indicator, PI-0281, is trending downwards	04/19/2015
AR-2500757	A sprinkler head in the instrument and controls manager's office is dripping at a rate of one drop per minute	05/14/2015
AR-2612224	A pinhole leak was detected downstream of hand valve, HV-037D-12300 associated with the DDFP	01/14/2016
AR-2669950	Two sprinkler heads in a manager's office were leaking at a rate of 10 to 15 drops per minute	05/16/2016
AR-2692153	The DDFP sensing line continues to clog	07/13/2016
AR-2724449	PI-0281, associated with the DDFP cooling water supply, continues to trend downward.	10/5/2016

Document	Title	Revision / Date
AR-4005626	A small pinhole leak was detected downstream of HV-037D-12300; associated with the DDFP.	05/2/2017
AR-4010971	One deluge nozzle was clogged for the Unit 2 startup and emergency auxiliary transformer; there was no impact on the fire water protection function for the transformer.	05/15/2017
AR-4026398	There have been frequent instances of pinhole leaks occurring in the relief valve piping for the MDFP.	06/27/2017
AR-4044061	Several fire hydrants failed the flush test criteria due to failure to drain.	08/21/2017
AR-4055356	Two sprinkler heads are dripping water	09/24/2017
AR-4071934	Fire system piping was leaking in the location of the turbine T9 bearing. Five feet of pipe was replaced.	11/2/2017
AR-4071773	A deluge nozzle failed testing because water was trickling from the head instead of spraying for the C main turbine deluge system.	11/7/2017
AR-4077706	One sprinkler head failed on the Unit 3 main turbine operating floor	11/24/2017

SLRA AMP B.2.1.18, Outdoor and Large Atmospheric Metallic Storage Tanks

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "crack," "through-wall," "pinhole," "leak," "tank," "blister," "delamination," "coatings," "rust," "holiday," "corrosion," "insulation," "refueling water storage tank (RWST/RST)," and "condensate storage tank (CST)."

The table below lists the documents that were reviewed by the staff and were found relevant to the Outdoor and Large Atmospheric Metallic Storage Tanks Aging Management Program. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01523775	Lessons learned from tank inspection include using more appropriate lighting, qualifying other coatings at the site, qualifying other contractrs to perform inspections and repairs, qualifying tank cleaning service, and identifying responsible parties for tank inspections in a more timely manner	06/11/2013
AR-02561237	Weeds were found growing in the joints of Unit 3 CST moat. Indication of lack of complete integrity of secondary containment.	09/27/2015

Document	Title	Revision / Date
AR-02524605	Please generate Pims AR for Unit 2 CST internal recoating.	07/07/2015
AR-02416582	During RFO 20, volumetric floor inspection of U2 CST (20T010) was attempted using Magnetic Flux Leakage (MFL). MFL tooling popped blisters as rolled across the floor; popping blisters expected, water behind blisters was not.	11/24/2014
AR-04022739	Unit 2 CST floor should be scheduled for proactive repair due to indications found during RFO 21. Repair law Tank Code API653	06/16/2017
AR-03965638	During RFO 21, 12 indications identified as below screening wall thickness and would need to be evaluated	01/23/2017
AR-00792787	Water absorbed into Unit 2 moat floor; moat floor is sealed and should not absorb water	07/02/2008
AR-01003942	Water leak at heating steam pipe connection to Unit 2 CST. Water is leaking from insulation where heating steam condensate return line exits the tank.	12/10/2009
AR-01282227	An inspection of moat integrity was performed as an EOC review. Inspection of CST/RST moat identified that the sealant in a vertical seam where the moat wall meets the Unit 2 reactor building railroad airlock shows minor degradation.	10/27/2011
AR-00761933	20T010 CST tank very rusty at bottom of tank; it appears water accumulates in moat in this area.	04/11/2008
AR-02586319	Identified coating either peeling or rusting away in small areas around the tank (RST) heating steam and condensate return connections at horizontal welds	11/12/2015
AR-01455775	Actions recommended to proactively verify RST tank bottom integrity during next RST PM	12/26/2012
AR-00844188	Sealing activities for Unit 3 CST and TDT moat will not take place in 2008. 20T010 Unit 2 CST/RST moat was completed, but all remaining moats will be re-sealed in 2009	11/12/2008
AR-01455775	Tritium found in hatch groundwater; actions recommended to verify Peach Bottom RST tank bottom integrity during next RST; RST is coated carbon steel on mildly corrosive ground; cathodic protection in proximity insufficient	12/26/2012

SLRA AMP B.2.1.19, Fuel Oil Chemistry

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "biofuel," "biological," "MIC," "bacteria," "sample," "fuel oil," and "diesel."

The table below lists the documents that were reviewed by the staff and were found relevant to the Fuel Oil Chemistry program. These documents were identified in the staff's search of the

applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00842578	E-1 main fuel contains small amount of water	11/09/2008
AR-00856075	E1 FO tank water/ sediment found in tank	12/14/2008
AR-00856080	E4 FO tank water/sediment found in tank	12/14/2008
AR-00926496	E4 EDG main fuel oil STOR TK has high bacteria	06/01/2009
AR-01206734	Water found in E3 fuel oil sample	04/23/2011
AR-01306107	ODT038 E4 EDG fuel oil tank sediments	12/22/2011
AR-01418484	E2 DG main FO storage tank upward trend in particulate	09/26/2012
AR-01479030	E3 EDG fuel oil storage tank bacteria	02/22/2013
AR-01510201	EDG fuel oil tank long term health plan	05/03/2013
AR-01681817	Buried E1 diesel piping guide wave 2014	07/14/2014
AR-02691462	Sludge and biological growth found in DDFP day tank	07/11/2016

SLRA AMP B.2.1.21 One-Time Inspection

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "blister," "break," "clam," "coat," "corro," "crack," "damage," "delamin," "fail," "flaw," "hole," "holiday," "rust," and "scal."

The table below lists the documents that were reviewed by the staff and were found relevant to the One-Time Inspection Program. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00921199	Torus item	05/18/2009
AR-04024041	Torus coating inspection frequency	06/21/2017

Document	Title	Revision / Date
AR-2571658	3R20 containment coating inspection results	10/16/2015
AR-02413128	Coating defects and pinpoint rust in torus belly band area	11/17/2014
AR-01603399	P2R20 – torus coating inspection	01/03/2014
AR-02407173	Pit with depth of 126 mils	11/05/2014
AR-01206713	'A' boiler tube leak creating waste water disposal expense	04/23/20111
AR-01542130	Raw water inspection program process improvements	08/01/2013

SLRA AMP B.2.1.22, Selective Leaching

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "bronze," "graphiti," "dealloy," "degraph," "zinc," "leach," "dealum," and "cast."

The table below lists the documents that were reviewed by the staff and were found relevant to the Selective Leaching program. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01257959	License renewal fire system testing for selective leaching	08/30/2011

SLRA AMP B.2.1.23, ASME Code Class 1 Small-Bore Piping

Audit Activities. The staff conducted an independent search of Exelon's operating experience database.

The table below lists documents that were reviewed by the staff and were found relevant to the audit. These documents were provided by Exelon or were identified in the staff's search of Exelon's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
XI.M35 References Part 1	Basis for weld counts, second license renewal project	REV. 0
AR-04065691	Steam leak at weld	10/23/2017
AR-04067473	EOC review for failed weld	10/26/2017
AR-00856352	Inspection of RI-ISI piping socket welds	12/15/2008
AR-04078978	Maintenance rule system 04 recommendation	11/29/2017
AR-00479492	Maintenance rule system 04-1-1 performance criteria exceeded	11/30/2017
AR-02732688	Main steam D flow instrument lines small-bore piping	10/25/2016

SLRA AMP B.2.1.24, External Surfaces Monitoring of Mechanical Components

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "corros," "drip," "drop," "leak," "rust," and "wall thin."

The table below lists the documents that were reviewed by the staff and were found relevant to the External Surfaces Monitoring of Mechanical Components program. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-02634061	Air intake is 90 % clogged with dust and lint; review preventive maintenance work orders to determine if changes are needed to ensure screens are cleaned	03/01/2016
AR-02573369	Degraded RBCCW piping to recirc motor oil coolers	10/19/2015
AR-01635636	Walkdown of HPSW piping in Unit 3 RHR room	03/19/2014

SLRA AMP B.2.1.25, Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "aging," "biofoul," "block," "corro," "piping," "leak," "microbiologic," and "loss of."

No significant plant-specific operating experience associated with the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components progam was noted by the staff during its review.

SLRA AMP B.2.1.26, Lubricating Oil Analysis

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "lube," "oil," "lubricating," "wear," "sample," "water," and "intrusion."

No significant plant-specific operating experience associated with the Lubricating Oil Analysis program was noted by the staff during its review.

SLRA AMP B.2.1.27, Monitoring of Neutron-Absorbing Materials Other than Boraflex

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "blister," "Boral," "NETCO," "neutron absorb," and "neutron."

The table below lists the documents that were reviewed by the staff and were found relevant to the Monitoring of Neutron-Absorbing Materials Other than Boraflex program. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01542109	Fuel rack insert design documents not updated correctly.	08/01/2013
AR-01605678	NETCO inserts could not be installed in two Unit 2 spent fuel pool (SFP) locations.	01/08/2014
AR-02734159	SFP cell location DD-19 not useable during core shuffle 1B	10/29/2016
AR-04047328	Incorrect tolerance value in SFP criticality analyses.	08/30/2017

SLRA AMP B.2.1.28, Buried and Underground Piping and Tanks

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "aging," "buried," "coat," "corro," "wrap," "vault," "underground," "piping," "microbiologic," "loss of," "holiday," "flaw," "excavat," "galvanic," "chloride," and "leak."

The table below lists the documents that were reviewed by the staff and were found relevant to the Buried and Underground Piping and Tanks program. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-02382429	PBAPS buried fire protection pipe internal conditions	09/17/2014
AR-01279994	External coating damage on buried emergency service water (ESW) piping	10/22/2011
AR-04056450	PBAPS buried piping corrosion results	09/27/2017
AR-04055916	Subsequent License Renewal (SLR) buried condensate storage pipe requires coating for slr	09/26/2017
AR-01137854	Pin hole leak identified on a ESW supply in excavation #2	11/09/2010
AR-01561817	Operating Experience (OPEX) program action for buried fire protection corrosion	09/20/2013
AR-01255154	Coating degradation/external corrosion on buried pipe site #7	08/24/2011
AR-02513031	PBAPS buried pipe coating conditions near FLEX building	06/10/2015

SLRA AMP B.2.1.29, Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "blister," "coat," "block," "delamin," "flak," "flaw," "holiday," "leak," "lined," "lining," "peel," and "spall."

The table below lists the documents that were reviewed by the staff and were found relevant to the Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks program. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-04049466	SLR Residual Heat Removal (RHR) heat exchanger water box coating not present	09/06/2017
AR-02524605	AR required to do condensate storage tank (CST) internal recoat	07/06/2015
AR-02414144	CST coating blisters popped while inspecting floor	11/16/2014

SLRA AMP B.2.1.30, ASME Section XI, Subsection IWE

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "bellows," "blister," "bolt," "coat", "containment," "corro," "crack," "degrad," "downcomer," "drywell," "rust," "shell," "torus," "scal," "moisture barrier," "pit," and "loss of material." "vent," "header."

The table below lists the documents that were reviewed by the staff and were found relevant to the LRA AMP B.2.1.30, ASME Section XI, Subsection IWE. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01098438	Nos ID containment inspection issues not entered into cap	08/05/2010
AR-01113597, 01113593, 01113594	Inadequate thread engagement on bolts for Unit 2 N-110E, N-110A, N110-AC, Hatch	09/15/2010 (ALL)
AR-02571658	P3R20 Containment Coating Inspection results – Unit 3	10/15/2015
AR-02417863	P2R20 Containment Coating Inspection results – Unit 2	11/25/2014
AR-02407173	Pit with depth of 126 mils metal loss, Unit 2 torus underwater IWE inspection	11/5/2014
AR-02569613	P3R21 CISI repair – repair floor coating	10/9/2015
AR-01562169	Coating damage on inside diameter of drywell head Unit 3	09/19/2013
AR-02400490	P2R20 CNF-007 – coating damage on floor and wall of drywell	10/22/2014
AR-00820200	P2R17 CISI – peeling of moisture barrier	09/20/2008
AR-01563175	FME: containment general visual results P3R19 - downcomers	09/24/2013
AR-00970529	P3R17 VT-3 inspection of downcomers submerged surfaces	09/25/2009
AR-00974909	P3R17 CISI documentation of condition of downcomers	10/5/2009
AR-01391214	P2R20 torus downcomers – perform asbestos abatement and recoat	07/20/2012
WO C0236452	P3R19 torus lining project (AR-1696762)	11/13/2013
WO C0240807	P2R19 torus lining project (AR-1753580)	12/5/2012

SLRA AMP B.2.1.31, ASME Section XI, Subsection IWF

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "bolt," "degrad," "crack," "corro," "struct," "rust," "SCC," "hanger," "support" and "IWF."

The table below lists the documents that were reviewed by the staff and were found relevant to the ASME Section XI, Subsection IWF program. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-4030738	Online ISI – inadequate thread engagement on 23HB-H23	07/11/2017
AR-04013046	MS clamp missing bolting	05/20/2017
AR-0257497	Broken hanger found on MSL drain line	10/23/2015
Project PEA-21158	Failure analysis of stud from a main steam line drain line	12/11/2015
AR-02737268	P2R21 ISI CNF-015 – spring can out of tolerance	11/04/2016
W/O 04768628	23-DBN-H51; P2R22 – spring cans out of tolerance	04/06/2018
W/O C0259988	23-DBN-H51 exam	11/14/2016
AR-02735294	Dual spring can, size, load scale, bolting	11/01/2016
AR-02648629	ISI inspection of 10HB-S10 (RHR support)	03/31/2016
AR-01421162	P2R19 ISI scope – PIMS AR for additional ISI inspections	10/02/2012
AR-02733492	ISI scope change – RHR hangers	10/27/2016
W/O C0263353	NDE 10HB-H25 10HB-25(IA)	11/16/2016
AR-02401934	P2R20 ISI CNF-015 – 12DCN-H150 hanger out of tolerance	10/27/2014
AR-02733492	ISI scope change – RHR hangers	10/27/2016
AR-02402207	P2R20 ISI expanded scope for 12DCN-H150	10/28/2014
AR-02402431	P2R20 ISI expanded scope correction	10/28/2014
AR-01475216	P2R20 ISI scope – PIMS AR for isi inspection of 12DCN-H150	02/14/2013

Document	Title	Revision / Date
M-00618	Nuclear safety related specification for fabrication installation and inspection of critical pipe supports, hangers and restraints at Peach Bottom Atomic Power Station Units 2 and 3	REV 4 01/23/15

SLRA AMP B.2.1.32, 10 CFR Part 50 Appendix J

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "LLRT," "ILRT," and "Pressure-Boundary."

The table below lists the documents that were reviewed by the staff and were found relevant to the 10 CFR Part 50, Appendix J Program. These documents were identified in the staff's search of Applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01632412	Through wall HPSW leak identified during ST-O-032-635-3	03/12/2014
AR-01638733*	Unit 2 ILRT activities	03/26/2014
AR-01639839	Low wall reading on former Unit 3 a HPSW ILRT line	03/28/2014
AR-01646381	Unit 3 "A" HPSW piping, ILRT extent of condition	04/11/2014
AR-02418132	Packing leak on RTV-2-14-036D	11/27/2014
AR-02418238	RTV-2-07B-2503B packing leaks	11/28/2014
AR-02418617	"As found ILRT" UNSAT for ST-J-07A-600-2	11/30/2014
AR-02720162	Nos programs assessment roll up for lessons learned	09/26/2016
AR-02718721	Nos id: U2 ilrt critique comments not dispositioned	09/22/2016
AR-02463849	LLRT results exceed normal leakage values	03/05/2015
AR-02530466	SV-2-07D-2671D failed off scale during LLRT	07/20/2015
AR-02684409	SV-3-07D-3671G exceed admin limit during LLRT	06/22/2016
AR-02667246	SV-2-07D—2978G exceed admin limit during LLRT	05/09/2016
AR-02667062	SV-3-07D-3978C exceed admin limit	05/09/2016
AR-02659549	Exceeded SVLC for SV-3-07D-3671E during ST/LLRT 30.07D.05	04/22/2016
AR-02649404	A low level trend in inaccurate classification of IRS by SOC	04/01/2016

Document	Title	Revision / Date
AR-02640532	SV-3-07D-3671A thru valve leakage, failed ST/LLRT30.07.01	03/15/2016
AR-02571383	Elevated leakage on AO-3-20-0833	10/15/2015
AR-02561375	Main steam line drain LLRT results	09/28/2015
AR-02561049	“A” inboard MSIV did not pass LLRT	09/26/2015
AR-02558419	AO-3-20-83 LLRT failure	09/21/2015
AR-00827484	CRD hatch failed LLRT	10/07/2008
AR-00826622	Assess P2R17 LLRT results	10/04/2008
AR-00826137	AO-2-20-083 failed off-scale as-left LRRT	10/03/2008
AR-00824880	ST/LLRT 20.20B.01 revealed leakage past valves	10/01/2008
AR-00824871	ST/LLRT 20.20B.01 revealed leakage past valves	10/01/2008
AR-00823017	MO-2-10-26A failed high leakage during LLRT	09/26/2008
AR-00818517	“C” MSIV line high leakage during LLRT	09/16/2008
AR-01112867	AO-20-7B-2502B failed LLRT ST/LLRT 20.07b.05 off scale high	09/14/2010
AR-04070394	Nos QV ID: indication on fitting	11/03/2017
AR-00742879	DW penetration N-3 not IAW ASME XI exam, exemption requirements	02/29/2008

SLRA AMP B.2.1.33, Masonry Walls

Audit Activities. The staff conducted an independent search of the applicant’s operating experience database using keywords: “block,” “masonry,” “crack,” “concrete,” “spall,” “mortar,” “wall,” and “steel.”

The table below lists the documents that were reviewed by the staff and were found relevant to the Masonry Walls program. These documents were identified in the staff’s search of the applicant’s operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01645153	Hairline crack in concrete block wall Unit 2 CPS pump room	04/09/2014
AR-02390129	Void found in block wall	09/30/2014
AR-02657801	Large cracks in masonry wall TB3 135 elevation	04/18/2016

SLRA AMP B.2.1.34, Structures Monitoring

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "rebar," "degrad," "crack," "corro," "struct," "manhole," "concrete," "rust," "SCC," "tank," "underground," "leak," "efflor," "leach," and "excav."

The table below lists the documents that were reviewed by the staff and were found relevant to the Structures Monitoring Program. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
ROOM 1 – ROOM X26	Maintenance rule walkdowns datasheet (site structures monitoring program walkdowns database)	1997-LATEST
AR-4114053	Additional scope for HPSW east exterior wall repair (circulating water pump structure parapet)	03/12/2018
AR-2561844	Moisture barrier degradation (drywell)	09/28/2015
AR-2448766	Cracked concrete at 3a RHR north wall requires repair – evaluated per AR-243612312-03	02/16/2015
AR-4047174	Effloresce build-up on concrete wall – water intrusion	08/30/2017
AR-2482098	Reactor building concrete wall spalling	04/08/2015
AR-0745523	Multiple bolting IRS identified at Peach Bottom	03/06/2008
AR-4066929	SLR: clarify cathodic protection in UFSAR for structural piles	10/25/2017
AR-4033732	Broken grout under switch yard supports	07/20/2017
AR-2482098	Reactor building concrete wall spalling	04/08/2015
AR-0864007	Groundwater intrusion deficiency identified during walkdowns	01/08/2009

Document	Title	Revision / Date
AR-1332710	Spalled concrete	02/27/2012
AR-17D0989	Peach Bottom water samples (second license renewal samples) for AR-3965485	05/15/2017

SLRA AMP B.2.1.35, Inspection of Water Control Structures Associated with Nuclear Power Plants

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "steel," "concrete," "crack," "coroson," "loosing bolt," and "spall,"

The table below lists the documents that were reviewed by the staff and were found relevant to the Inspection of Water Control Structures Associated with Nuclear Power Plants. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-04032918	Excessive cracking & spalling on exterior pump structure	07/14/2014
AR-02702731	The wall/ceiling is chipping off in 2B CCW room	08/10/2016
AR-01668542	Concrete degrading at door C16 inner screen building	06/06/2014
AR-0656538	Manhole 77 has damaged concrete	05/06/2014
AR-3014280	Crack on emergency cooling tower and reservoir wall	06/03/1997
AR-3894011	Degradation from replacement of 2A circulating screen	03/10/2017
AR-3406097	HV-2-30-23427A, 2A sluice gate deficiencies	06/11/2012
AR-3406099	HV-3-30-33427B-3B sluice gate deficiencies	06/11/2012

SLRA AMP B.2.1.36, Protective Coating Monitoring and Maintenance

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "blister," "coat," "delamin," "lined," "lining," "peel," and "perforat."

The table below lists the documents that were reviewed by the staff and were found relevant to the Protective Coating Monitoring and Maintenance program. These documents were identified

in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-04047208	Coating Check-In and Re-Baseline.	08/30/2017
AR-04024041	Update torus inspection frequency for Subsequent License Renewal.	06/21/2017
AR-03952615	Drywell coatings not captured in unqualified coatings logs.	12/13/2016
AR-02571658	Unit 3 refueling outage 20 containment coating inspection results.	10/16/2015
AR-02417863	Unit 2 refueling outage 20 containment coating inspection results.	11/26/2014
AR-02413128	Coating defects and pinpoint rust in torus belly band area.	11/17/2014
AR-02399188	Duane Arnold torus coating delamination operating experience review.	10/22/2014
AR-02176881	Part 21 – coating failure to meet specified irradiation during test.	09/10/2014
AR-01570061	Unit 3 torus coating application non-compliance.	10/09/2013
AR-01567612	Unit 3 torus surface preparation non-compliance.	10/04/2013
AR-01691387	Unit 3 torus TOC above limit.	08/11/2014
AR-01601996	Adverse trend in torus TOCs.	12/30/2013
AR-01601661	Unit 2 torus water above limit for TOC.	12/29/2013
AR-1420875	Containment visible on blasted surface.	10/01/2012
AR-01192421	Main steam safety relief valve discharge piping temperature is greater than the torus coating qualified temperature.	03/25/2011
AR-01431174	Torus relining project increased unqualified coatings.	10/25/2012
AR-01423337	Coating application non-conformance reports.	10/06/2012

SLRA AMP B.2.1.37, Electrical Insulation for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using the keywords: "cable," "embrittlement," "cracking," "discoloration," "melting," "swelling," "surface contamination," "insulation," and "adverse localized," and searching by system numbers.

The table below lists the documents that were reviewed by the staff and were found relevant to the Electrical Insulation for Electrical Cables and Connections Not Subject to 10 CFR

Section 50.49 Environmental Qualification Requirements. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-03955141	E/S-7139-1 power cord outer jacket is bad due to dry rot. Conductors fine. Tape applied to cable jacket. No further action noted.	12/20/2016
AR-02627247	Cable inside starter cabinet 2A for the drywell chillers showing heat degradation. Heat source: control power transformer. Transformer relocated. Cable deemed to not need repair. [AR also references same conditions found on 3C drywell chiller and the A control room chiller.]	02/17/2016
AR-02620248	Cable inside starter cabinet 3C for the drywell chillers showing heat degradation. Heat source: control power transformer. Suggested course of action: repair cable and move transformer. Status: transformer not relocated and cable repair in next work window. Per the ar, cable repair on hold.	02/01/2016
AR-01502003	480V A24 bus and B24 bus ageing issues. The secondary contact connection separations in both switchgear are brittle and breaking. Suggested course of action: look at repairing or replacing if the cooling towers will be required after the study. No further details. AR closed.	04/15/2013
AR-01570557	Potential degradation of 480V MCC 4R4-R-B feeder cable. Discovered as part of investigation of faulted 480V MCC 3R4-R-B feeder cable due to close proximity to main steam lines in moisture separator area.	10/09/2013
AR-01516504	Documentation of 3SU cable repair/replacement plan. Subject cable is part of the aging monitoring process but the AR provides detailed insight into the actual plan followed.	05/21/2013

SLRA AMP B.2.1.38, Electrical Insulation for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements used in Instrumentation Circuits

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "intermediate range monitor," "power range monitor," "source range monitor," "instrumentation circuit," "neutron flux," "radiation monitor," "thermal transient," "moisture intrusion," "electrical insulation," "sensitive circuit," "high voltage circuit," "low-level current signal," "calibration," and "surveillance test."

The table below lists the documents that were reviewed by the staff and were found relevant to the Electrical Insulation for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements used in Instrumentation Circuits. These documents

were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01118854	During performance of the source calibration, the 2D main steam line radiation monitor failed downscale. Maintenance I&C found scaffolding erected for the calibration was removed and the cables running to the 'C' & 'D' radiation elements were not as uniform as the 'A' & 'B.' the cause of the failure was due to failed connectors and cable disturbance.	10/28/2010
AR-01557269	During calibration check on PS-3-02-071L there were 11 cables found to be bad. Cable and connector will need to be replaced. PS-3-02-071L will need to be retested.	10/12/2013
AR-02410383	The 2D MSL rad monitor drifted from 11 mr/hr to 'downscale' over an approximately 3 hour period. The 2 A/B/C rad monitors remained constant at 11-12 mr/hr during this time. The detector drifted downscale due to the nature and energy levels of gamma radiation.	12/11/2014

SLRA AMP B.2.1.39, Electrical Insulation for Inaccessible Medium-Voltage Power Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "cable," "manhole," "submerge," "insulation," "sump pump," "tan delta," "degraded cable," and "vault."

The table below lists the documents that were reviewed by the staff and were found relevant to the Electrical Insulation for Inaccessible Medium-Voltage Power Cable Not Subject to 10 CFR 50.49 EQ Requirements. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-2537689	2B Condensate pump cables were tan delta tested in 2004. Cable 2H0206A phase C tested "further study required" (IR 2412081). This is 2 years after the last test, which would satisfy the requirement of an increased frequency testing.	08/04/2015
AR-4087039	Water level in MH-069 was found 7.1" below water level sensor. The threshold was 11" below the water level sensor. Applicant initiated a CR to pump out water.	12/23/2017
AR-2537706	2C condensate pump cable were tan delta tested in 2014. Cable 2H0207A phase C tested "further study" required (IR2412089). This is 2 years after the last test, which would satisfy the requirement of an increased test frequency.	08/04/2015

Document	Title	Revision / Date
AR-1093787	This issue is written to create an AR-to perform work required by Rev.1 of OP evaluation 10-002. The power cable feeding 0CX026 shall be tan delta tested, removed and sent to a lab for analysis. A new cable shall be installed in its place.	07/23/2010
AR-4094210	Per mysmart cover website MH-106 has a high level advisory. An applicant staff notified shift supervisor and water was pumped out.	01/16/2018

SLRA AMP B.2.1.40, Electrical Insulation for Inaccessible Instrument and Control Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "cable," "manhole," "submerge," "insulation," "sump pump," "degraded cable," and "vault."

The table below lists the documents that were reviewed by the staff and were found relevant to the Electrical Insulation for Inaccessible Instrument and Control Cables Not Subject to 10 CFR 50.49 EQ Requirements. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-4087254	Water level in MH-042 was found 25.8" below the water level sensor. The threshold was 26.0" below the water level sensor. Applicant initiated a CR to pump out water.	12/25/2017
AR-4087039	Water level in MH-069 was found 7.1" below water level sensor. The threshold was 11" below the water level sensor. Applicant initiated a CR to pump out water.	12/23/2017
AR-4094210	Per mysmart cover website, MH-106 has a high level advisory. An applicant staff notified a shift supervisor. Water was pumped out.	01/16/2018
AR-4095189	Water level in MH-042 was found 20.4" below water level sensor. Applicant pumped water out.	01/10/2018
AR-4087163	Water level in MH-062 was found 13" below the water level sensor. The threshold was 24" below the water level sensor. Applicant initiated a CR to pump out water.	12/25/2017

SLRA AMP B.2.1.41, Electrical Insulation for Inaccessible Low-Voltage Power Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "cable," "manhole," "submerge," "insulation," "sump pump," "tan delta," "degraded cable," and "vault."

The table below lists the documents that were reviewed by the staff and were found relevant to the Electrical Insulation for Inaccessible Low-Voltage Power Cables Not Subject to 10 CFR 50.49 EQ Requirements. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-4087254	Water level in MH-042 was found 25.8" below the water level sensor. The threshold was 26.0" below the water level sensor. Applicant initiated a CR to pump out water.	12/25/2017
AR-4087039	Water level in MH-069 was found 7.1" below water level sensor. The threshold was 11" below the water level sensor. Applicant initiated a CR to pump out water.	12/23/2017
AR-4094210	Per mysmart cover website, MH-106 has a high level advisory. An applicant staff notified his shift supervisor. Water was pumped out.	01/16/2018
AR-1093787	This issue is written to create an AR to perform work required by Rev.1 of OP evaluation 10-002. The power cable feeding OCX026 shall be tan delta tested, removed and sent to a lab for analysis. A new cable shall be installed in its place.	07/23/2010
AR-4087163	Water level in MH-062 was found 13" below the water level sensor. The threshold was 24" below the water level sensor. Applicant initiated a CR to pump out water.	12/25/2017

SLRA AMP B.2.1.42 Metal Enclosed Bus

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "enclosed bus," "electrical bus," "connections," "elastomers," "gaskets," "MEB," "cable bus," and "metal enclosed bus."

The table below lists the document that was reviewed by the staff and was found relevant to the Metal Enclosed Bus program. This document was provided by the applicant or was identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00871272	3B transformer to isophase bus transition piece and flex links were found degraded. Parts were replaced as needed and an extent of condition IR-873040 was created.	02/23/2009

SLRA AMP B.2.1.43 Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "cable connection," "increased resistance," "loose connection," "discoloration," "thermal cycling," "thermography," "ohmic heating," "chemical contamination," "corrosion," "vibration," and "oxidation."

The table below lists the documents that were reviewed by the staff and were found relevant to the Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements program. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00813174	Thermography on turbine building crane identified anomalies. Connections were tightened and monitoring was increased.	10/02/2018
AR-01513403	Motor control center (MCC) load side connection showed a delta temperature (T) of 22 degrees. Per MA-AA-716-230-1003, delta T of 14 to 50 is blue action level. Connections were tightened and rescanned.	06/12/2013
AR-01129217	Discovered overheating of circulating water pump 3A. Developed a list of other motors that may have similar field connections.	10/20/2010
AR-01118854	Checked cables and connectors of 2D main steam line radiation monitor and replaced connector.	10/28/2010
AR-01112568	Found a burnt motor connection insulation. Cause found to be one-bolt connection instead of two. Also dielectric grease was not used. Installed belleville washers and two bolts. Also affects other motors in core spray, EDG, service water systems.	01/26/2011

SLRA AMP XI.S6, Concrete / Inaccessible Areas

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "concrete," "froz," "freeze," "thaw," "elevated temperature," "crack," "expan," "pattern," "leach," "settle."

The table below lists the document that was reviewed by the staff and was found relevant to the concrete and inaccessible areas. This document was provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01341413	ECT has calcium like deposits leaching out of building	03/15/2012

SLRA AMP B.2.4.1 Pressurizer Surge Line Fatigue

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "surge line," "through wall," "thermal," "pressurizer," "fatigue," "cracking," "leakage," "failure," and "weld."

The table below lists the documents that were reviewed by the staff and were found relevant to the Pressurizer Surge Line Fatigue program. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Description	Revision / Date
AR-00417806	Insurge during pressurizer bubble collapse (Unit 4)	04/11/2005
AR-00514901	Problem with oxygen removal from the pressurizer (Unit 4)	05/05/2008
AR-00453780	PCV-4-455A pressurizer spray valve has an active packing leak (Unit 4)	04/30/2008
AR-02102753	Current procedures do not count pressurizer fatigue cycles	01/14/2016
AR-02130519	RCS/pressurizer pressure oscillating (Unit 3)	05/08/2016

SLRA AMP B 3.1.1, Fatigue Monitoring Program

Audit Activities. The staff conducted an independent search of applicant's operating experience database using keywords: "Fatigue Monitoring," "FatiguePro," "cycles," "fatigue usage," "cumulative usage" and "usage factor."

The table below lists the documents that were reviewed by the staff and were found relevant to the Fatigue Monitoring Program. These documents were provided by applicant or identified in the staff's search of applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00915984	Update of PB fatigue monitoring program	04/28/2012
AR-01555998	RPV fatigue monitoring program documentation	05/25/2019
AR-04021824	SLR: improper close out of FLR FMP commitment	01/09/2018
AR-03952475	Fatigue & transient monitoring program deficiencies	03/28/2017
AR-04067104	Fatigue monitoring program recommendations	07/28/2018

SLRA 3.1.2.2.5, Reactor Pressure Vessel Underclad Cracking

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Crack," "SCC," "Vessels," and "Weld."

No significant plant-specific operating experience associated with Reactor Pressure Vessel Underclad Cracking was noted by the staff during its review.

SLRA AMP B.3.1.3, Environmental Qualification of Electric Equipment

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "EQ," "environmental qualification equipment," "environmental qualification component," and "environmental qualification – aged related degradation."

The table below lists the documents that were reviewed by the staff and were found relevant to the Environmental Qualification of Electric Equipment. These documents were provided by the applicant or were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-4095189	It was recommended that the static O-ring pressure switch, model N-AA3, be replaced as soon as reasonable possible and not to approach the maximum EQ adjusted qualified life. Because no EQ preventive maintenance existed for replacement due to extensive EQ period.	01/19/2018
AR-4021418	Applicant has identified that the bendix connectors associated with 3AC872 and 3BC872 (drywell/torus CAC/CAD analog PNL. A/B) have not been replaced within the EQ qualified life of 14.86 years per EQ binder PB-037A. Work order history indicated the bendix connectors were last replaced in 1994. Applicant created an assignment to EQ engineer to determine from the temperature data if there was a basis for providing an extended qualified life and replaced all eight bendix connectors as soon as possible.	06/12/2017
AR-4025572	As described in IR 4005664, PS-9087F did not have an EQ maintenance task to replace the subject pressure switch before the end of 45 year EQ life. Applicant wrote an IR and created work order to replace the pressure switch.	06/26/2017
AR-4095177	Applicant identified during plant extension per IR 3997737-02-03, pressure switches must be replaced per EQ requirements. Applicant would create an IR for each PS-2(3)10-120A/B/C/E/F/G/H switch for EQ replacement.	01/19/2018
AR-2480628	As the result of recent revision to EQ life calculation, the qualified life of 8 relays have been reduced from 25 years to 19.31 years. Initial investigation has determined that these components were last replaced under their respective PMS in 1989. Based on the new EQ life calculations, these relays were due for replacement in June of 2008. Design engineering to determine actual EQ life of these components and provide due dates for replacement.	04/06/2015

SLRA TLAA 4.2.1, Neutron Fluence Analyses

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Crack," "SCC," "Vessels," and "Weld."

No significant plant-specific operating experience associated with TLAA 4.2.1, "Neutron Fluence Analyses," was noted by the staff during its review.

SLRA TLAA 4.2.3, Reactor Vessel Adjusted Reference Temperature (ART) Analyses

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Crack," "SCC," "Vessels," and "Weld."

No significant plant-specific operating experience associated with TLAA 4.2.3, “Reactor Vessel Adjusted Reference Temperature (ART) Analyses.” was noted by the staff during its review.

SLRA TLAA Section 4.2.4, Reactor Vessel Pressure-Temperature (P-T) Limits

Audit Activities. The staff conducted an independent search of the applicant’s operating experience database using keywords: “pressure-temperature,” “P-T,” and “PTLR.”

No significant plant-specific operating experience associated with TLAA Section 4.2.4, “Reactor Vessel Pressure-Temperature (P-T) Limits,” was noted by the staff during its review.

SLRA TLAA Section 4.2.5, Reactor Vessel Circumferential Weld Failure Probability Analyses

Audit Activities. The staff conducted an independent search of the applicant’s operating experience database using keywords: “circumferential weld,” “shell weld,” “14R-51.”

No significant plant-specific operating experience associated with TLAA Section 4.2.5, “Reactor Vessel Circumferential Weld Failure Probability Analyses,” was noted by the staff during its review.

SLRA TLAA Section 4.2.6, Reactor Vessel Axial Weld Failure Probability Analyses

Audit Activities. The staff conducted an independent search of the applicant’s operating experience database using keywords: “axial weld,” “shell weld,” “14R-51.”

The table below lists the documents that were reviewed by the staff and were found relevant to TLAA Section 4.2.6, “Reactor Vessel Axial Weld Failure Probability Analyses.” These documents were identified in the staff’s search of the applicant’s operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-02458945	P3R20 scope add – RPV Shell welds	03/27/2015
AR-02510740	P2R21 IVVI executive challenge action items	12/30/2015
AR-02570753	3R20 ISI – UT exam results of RPV shell welds	11/21/2015

SLRA TLAA 4.2.7, Reactor Vessel Reflood Thermal Shock Analysis

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Crack," "SCC," "Vessels," and "Weld."

No significant plant-specific operating experience associated with TLAA 4.2.7, 'Reactor Vessel Reflood Thermal Shock Analysis," was noted by the staff during its review.

SLRA TLAA 4.2.8, Core Shroud Reflood Thermal Shock Analysis

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Crack," "SCC," "Vessels," and "Weld."

No significant plant-specific operating experience associated with TLAA 4.2.8, "Core Shroud Reflood Thermal Shock Analysis," was noted by the staff during its review.

SLRA TLAA Section 4.2.13, Replacement Core Plate Plug Extended Life Irradiation – Enhanced Stress Relaxation

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "core plate," "mandrel spring," "plugs."

No significant plant-specific operating experience associated with TLAA Section 4.2.13, "Replacement Core Plate Plug Extended Life Irradiation - Enhanced Stress Relaxation," was noted by the staff during its review.

SLRA TLAA Section 4.2.14, First License Renewal Application Core Shroud IASCC and Embrittlement Analysis

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "core shroud," "IASCC," "embrittlement."

The table below lists the document that was reviewed by the staff and was found relevant to TLAA Section 4.2.14, "First License Renewal Application Core Shroud IASCC and Embrittlement Analysis." This document was identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00798768	Deviation from BWRVIP needed guidance	08/22/2008

SLRA TLAA 4.2.15, Unit 3 Core Spray Replacement Piping Bolting Loss Of Preload Evaluation

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Crack," "SCC," "Vessels," and "Weld."

No significant plant-specific operating experience associated with TLAA 4.2.15, "Unit 3 Core Spray Replacement Piping Bolting Loss of Preload Evaluation," was noted by the staff during its review.

SLRA AMP TLAA Section 4.3.1 "Metal Fatigue of Class 1 Components," 4.3.2 "Metal Fatigue of Piping Components," and 4.3.3 "Environmentally Assisted Fatigue"

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "design cycles," "CUF," "EAF" and "fatigue cracking."

No significant plant-specific operating experience associated with the TLAAs Section 4.3.1 "Metal Fatigue of Class 1 Components," 4.3.2 "Metal Fatigue of Piping Components," and 4.3.3 "Environmentally Assisted Fatigue," was noted by the staff during its review.

SLRA TLAA Section 4.3.4, Reactor Vessel Underclad Cracking

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using various combinations of the keywords: "reactor vessel," "RPV," "cladding," "crack," and "flaw."

No significant plant-specific operating experience associated with TLAA Section 4.3.4, "Reactor Vessel Underclad Cracking," was noted by the staff during its review.

SLRA TLAA 4.3.4, ASME Section III, Class 2, Class 3, and ANSI B31.1 Allowable Stress Analyses

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Stress" and "Fatigue."

No significant plant-specific operating experience associated with the ASME Section III, Class 2, Class 3, and ANSI B31.1 Allowable Stress Analyses was noted by the staff during its review.

SLRA TLAA Section 4.3.5, Reactor Coolant Pump Flywheel

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using the keyword: "flywheel."

No significant plant-specific operating experience associated with TLAA Section 4.3.5, "Reactor Coolant Pump Flywheel," was noted by the staff during its review.

SLRA TLAA Section 4.3.6.1, Generic BWR Fatigue Analyses for Various Reactor Vessel Internal Components

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "design cycles," "CUF," "EAF," "fatigue," and "flaw."

No significant plant-specific operating experience associated with TLAA Section 4.3.6.1, "Generic BWR Fatigue Analyses for Various Reactor Vessel Internal Components," was noted by the staff during its review.

SLRA TLAA Section 4.3.6.2, Generic BWR Fatigue Analyses for the Core Shroud

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "design cycles," "CUF," "EAF," "fatigue," and "flaw."

No significant plant-specific operating experience associated with TLAA Section 4.3.6.2, "Generic BWR Fatigue Analyses for the Core Shroud," was noted by the staff during its review.

SLRA TLAA Section 4.3.6.3, Core Shroud Support Fatigue Analysis Reevaluation

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "design cycles," "CUF," "EAF," "fatigue," and "flaw."

No significant plant-specific operating experience associated with TLAA Section 4.3.6.3, "Core Shroud Support Fatigue Analysis Reevaluation," was noted by the staff during its review.

SLRA TLAA 4.3.6.4, Jet Pump Diffuser/Core Shroud Support Plate Fatigue Analysis

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Fatigue" and "Stress."

No significant plant-specific operating experience associated with the TLAA 4.3.6.4, **"**Jet Pump Diffuser/Core Shroud Support Plate Fatigue Analysis," was noted by the staff during its review.

SLRA TLAA Section 4.3.6.5, Replacement Steam Dryer Stress Report and Fatigue Evaluation

Audit Activities. The staff conducted an independent search of Exelon's operating experience database.

During its audit, the staff reviewed onsite documentation provided by the applicant. The table below lists the documents that were reviewed by the staff and were found relevant to TLAA Section 4.3.6.5, "Replacement Steam Dryer Stress Report and Fatigue Evaluation." The staff will document its review of relevant operating experience in the SER

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
PB-TLAABD, PART 1	TLAA basis document – Part 1 – TLAA identification	Revision 0 / September 2017
PB-TLAABD, PART 2	TLAA basis document – Part 2 – TLAA evaluation, Section 4.3.6.5, replacement steam dryer stress report and fatigue evaluation	Revision 0
PACKAGE ADAMS ACCESSION NO. ML122860201	License amendment request (LAR) - extended power uprate (EPU) for Peach Bottom, Units 2 and 3	09/28/2012
EPRI REPORT NO. 3002010541	BWRVIP-139, Revision 1-A: BWR vessel and internals project, steam dryer inspection and flaw evaluation guidelines	11/2017

SLRA TLAA Section 4.5, Concrete Containment Tendon Prestress

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Liftoff," "Force," "Trending," and "Tendon Surveillance."

The table below lists the documents that were reviewed by the staff and were found relevant to the LRA Section TLAA Section 4.5, "Concrete Containment Tendon Prestress." These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER .

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-00438310	High as-found liftoff forces, tendon 12V06 of Unit 3 (force> 70% Guts)	03/02/2007
AR-00482549	Unable to achieve liftoff on tendon 56V20 of Unit 4	01/26/2007
AR-01747712	Vertical tendon (34V08) of Unit 3, unable to be stressed to overstress force	03/22/2012
AR-01748216	Dome tendon (1D12) of Unit 3, unable to be stressed to overstress force	03/24/2012
AR-01751146	Horizontal tendon (42H26) of Unit 3, unable to be stressed to 80% overstress	04/02/2012
AR-02190686	Results of Unit 4 during 45th year tendon surveillance	03/10/2017
AR-00437147	Buttonheads missing from tendon number 13H31 of Unit 3 (calculation of lift-off forces/trending)	01/30/2007

SLRA TLAA Sections 4.6, Primary Containment Fatigue Analyses; 4.6.1 Primary Containment Structures, Penetrations, and Associated Components with Fatigue Analyses; 4.6.2 Containment Process Line Penetration Bellows

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Fatigue," "Torus," "Penetration," and "Bellows."

The table below lists the documents that were reviewed by the staff and were found relevant to the TLAA Section 4.6, "Primary Containment Fatigue Analyses." These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-04031330	Rain water intrusion sealing suggestion	07/13/2017
AR-01086963	Torus dewatering drain valve found degraded	07/01/2010
AR-01398861	3C RHR HPSW return pipe penetration seal degraded	08/09/2012
AR-00742879	DW penetration N-3 not iaw ASME xi exam, exemption requirements	02/29/2008
AR-04067104	Fatigue monitoring program recommendation	10/26/2017
AR-01290273	GEH Part 21 SC 11-10: interruption/delay in RHR drywell SPR	11/14/2011
AR-04047489	3K srv bellows leak alarm	08/30/2017
AR-01175843	Penetration seal is being pushed out	02/16/2011

SLRA TLAA Section 4.7.1, Cranes Cyclic Loading Analyses

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "crane," "crack," "fatigue," "cycle," "defor," and "deflect."

No significant plant-specific operating experience associated with the TLAA Section 4.7.1, "Crane Cyclic Loading Analyses," was noted by the staff during its review.

SLRA TLAA Section 4.7.4, Fracture Mechanics Analysis of ISI Reportable Indications for Group I Piping: As-Forged Laminar Tear in a Unit 3 Main Steam Elbow Near Weld 1-B-3BC-LDO Discovered During Preservice UT

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "Stress" and "cracking."

No significant plant-specific operating experience associated with TLAA Section 4.7.4, Fracture Mechanics Analysis of ISI Reportable Indications for Group I Piping: As-Forged Laminar Tear in

a Unit 3 Main Steam Elbow Near Weld 1-B-3BC-LDO Discovered During Preservice UT," was noted by the staff during its review.

SLRA 147.05 TLAA Section 4.7.5, Unit 3 Core Spray Replacement Piping Fatigue and Leakage Assessment

Audit Activities. The staff conducted an independent search of Exelon's operating experience database.

The table below lists the documents that were reviewed by the staff and were found relevant to the TLAA Section 4.7.5, "Unit 3 Core Spray Replacement Piping Fatigue and Leakage Assessment." These documents were provided by Exelon or were identified in the staff's search of Exelon's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
GEH-004N3501	Peach Bottom Atomic Power Station Unit 3 piping replacement design life extension evaluation	Revision 0, August 2017

SLRA TLAA Section 4.7.6, Crane Load Cycle Limit

Audit Activities. The staff conducted an independent search of the applicant's operating experience database using keywords: "crane," "crack," "fatigue," "cycle," "defor," and "deflect."

No significant plant-specific operating experience associated with the TLAA Section 4.7.6, "Crane Load Cycle Limit," was noted by the staff during its review.

AMR Item OE Input Not Associated with an AMP

The table below lists the documents that were reviewed by the staff and were found relevant to the stainless steel, nickel alloy, and aluminum further evaluations. These documents were identified in the staff's search of the applicant's operating experience database. The staff will document its review of relevant operating experience in the SER.

RELEVANT DOCUMENTS REVIEWED

Document	Title	Revision / Date
AR-01273829	Unit 3 reactor core isolation cooling stainless steel tubing extent of cause investigation	10/06/2011

AR-01267439	High pressure coolant injection (HPCI) sensing line failure resulting from chloride contaminated material extent of cause investigation	09/24/2011
AR-1233016	Apparent cause report for leak on Unit 3 HPCI turbine steam supply pressure sensing line tubing	06/25/2011

3. Applicant Personnel Contacted During Audit

PARTICIPANTS	ORGANIZATION
John Hilditch	Exelon
Paul Weyhmuller	Exelon
John Hufnagel	Exelon
Michael Baker	Exelon
Brian Placido	Exelon
James Annett	Exelon
Leah Ritz	Exelon
Mary Kowalski	Exelon
Debora Spamer	Exelon
Scott Kauffman	Exelon
Peter Tamburro	Exelon

4. Exit Meeting

An exit meeting was held with the applicant on September 27, 2018, to discuss the results of the operating experience audit. The staff may issue requests for additional information to support completion of the staff's SLRA review.