



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

September 13, 2018

Mr. Michael P. Gallagher  
Vice President, License Renewal  
and Decommissioning  
Exelon Nuclear  
200 Exelon Way  
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3, PLAN FOR  
THE OPERATING EXPERIENCE AUDIT REGARDING THE SUBSEQUENT  
LICENSE RENEWAL APPLICATION REVIEW

Dear Mr. Gallagher

By letter dated July 10, 2018 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML18193A689), Exelon Generation Company, LLC (Exelon) submitted to the U.S. Nuclear Regulatory Commission (NRC) an application to renew the Renewed Facility Operating License Nos. DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station, Units 2 and 3 (Peach Bottom).

The NRC staff plans to conduct the operating experience audit at the Excel Services Corporation offices in Rockville, Maryland, from September 17 through September 28, 2018, in accordance with the enclosed operating experience audit plan and audit needs list. If you have any questions, please contact me at 301-415-2981 or by e-mail at [Bennett.Brady@nrc.gov](mailto:Bennett.Brady@nrc.gov).

Sincerely,

/RA/

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

Docket Nos. 50-277 and 50-278

Enclosures:

1. Audit Plan
2. Audit Needs List

cc w/encls: Listserv

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3, PLAN FOR  
THE OPERATING EXPERIENCE AUDIT REGARDING THE SUBSEQUENT  
LICENSE RENEWAL APPLICATION REVIEW DATED SEPTEMBER 13, 2018

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## **Audit Plan**

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

**September 17 - 28, 2018**

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

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

**September 17 - 28, 2018**

**1. Background**

By letter dated July 10, 2018 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML18193A689), 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, Units 2 and 3 (Peach Bottom) licenses for an additional 20 years beyond the current renewed 60-year current license terms, which expire on August 8, 2033, for Unit 2 and July 2, 2034, for Unit 3. The staff of the U.S. NRC performs an independent review of plant-specific operating experience to identify examples of age-related degradation, as documented in the applicant's corrective action program database.

**2. Regulatory Audit Bases**

License renewal requirements are specified in Title 10 of the *Code of Federal Regulations* (10 CFR), Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants." Guidance is provided 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.

**3. Regulatory Audit Scope**

The scope of this SLR regulatory audit of Peach Bottom is the NRC staff's independent review of plant-specific operating experience. The review is performed to identify pertinent examples of age-related degradation, as documented in the applicant's corrective action program (CAP) database. The results of the audit will be used to support the NRC staff's further review of aging management programs (AMPs), time limited aging analyses (TLAAs) and aging management review (AMR) items to provide a basis for the NRC staff's conclusions on the ability of the applicant's proposed AMRs, AMPs and TLAAAs to manage the effects of aging in the subsequent period of extended operation.

The NRC staff will use risk insights to focus the breadth and depth of its review of plant-specific operating experience. However, the NRC staff's review is not limited to risk-significant systems and components because 10 CFR Part 54 is a deterministic rule. The NRC staff must conclude that there is reasonable assurance that activities will continue to be conducted in accordance with the current licensing basis and the effects of aging will be managed during the period of extended operation for all structures and components within the scope of 10 CFR Part 54.

**4. Information and Other Material Necessary for the Regulatory Audit**

As described in the Audit Needs List in Enclosure 2.

## 5. Team Assignments

Area of Review	Assigned Auditors (include, but not limited to)
Documentation of plant-specific operating experience as described in the Peach Bottom Atomic Power Station Units 2 and 3 CAP database. Disciplines include mechanical, materials, structural and electrical systems.	Allik, Brian Brimfield, Terrence Buford, Angela Chereskin, Alexander Cheruvenci, Ganesh Cuadrado de Jesus, Samuel Fitzpatrick, Robert Fu, Bart Gardner, William Gavula, James Hoang, Dan Hoffman, Keith Holston, William Huynh, Alan Iqbal, Naeem Jenkins, Joel Johnson, Andrew Jones, Steve Khan, Nadim Lehman, Bryce Lopez, Juan Min, Seung Mitchell, Jeff Nguyen, Duc Nold, David Prinaris, Andrew Rezai, Ali Rogers, Bill Sadollah, Mohammad Thomas, George

## 6. Logistics

The audit will be conducted on location at the Excel Services Corporation offices in Rockville, Maryland, from September 17 - 28, 2018. Entrance and exit briefings will be held at the beginning and end of this audit, respectively.

## **7. Special Requests**

The NRC staff requests that Exelon staff at the audit perform special searches of the CAP database as requested by NRC staff. The NRC staff requests a suitable facility for the audit team to caucus during the audit and to hold meetings between NRC staff and Exelon personnel.

## **8. Deliverables**

An audit report should be issued within 90 days from the end of the audit.

## **Operating Experience Audit Regarding the Peach Bottom Atomic Power Station Unit Nos. 2 and 3, Subsequent License Renewal Application Audit Needs List**

### **1. Corrective Action Program Database**

The U.S. Nuclear Regulatory Commission (NRC) staff requests that Exelon Generation Company, LLC (Exelon) staff, using Exelon equipment, perform searches of the Exelon's corrective action program (CAP) database as requested by NRC staff during the Operating Experience (OpE) Audit.

### **2. License Renewal Portal**

The NRC staff requests electronic access, using their own equipment, to the Exelon license renewal portal.

### **3. Prepared Operating Experience Keyword Review Results**

The NRC staff requests that 10 years of plant-specific CAP entries be compiled into an excel workbook, organized by keywords. The data entered would be all CAP entries (e.g., issue reports, condition reports) that cite one of the keywords in the table below. This spreadsheet will be used by the staff during the OpE Audit. The parameters for the database should be as follows.

- The CAP entries should be compiled with an individual datasheet for each term. Some CAP entries could appear in multiple datasheets due to the use of multiple search terms when the CAP entry was initiated.
- At a minimum, each entry should include the CAP entry number, date of initiation, and the title of the CAP entry or a brief summary. The efficiency of the staff's screening review is increased with more details in the Excel spreadsheet. For example, a simple title might result in the CAP entry appearing to be an applicable age-related issue; however, when the full entry is reviewed, it may be noted that the degradation was not age-related (e.g., damage during excavating buried pipe, damage to internal coatings as a result of scaffold installation).
- For efficiency, it would be helpful to the staff if the CAP entries include the plant system number. This is not required, but it can improve the efficiency of the staff's review process. Specifically, generic search terms such as "corros," "indication," "pit," etc., provide a large number of entries and the staff's search time can be significantly reduced if the plant system is identified.

The staff requests electronic access, using Exelon equipment, to the results of the operating keyword list query of Exelon's corrective action database. The results are expected to be in an Excel workbook, organized by keywords.

In preparation for the OpE audit, the Project Manager will forward the following key words to the applicant. The applicant will create a searchable database containing these terms and all associated CAP entries that cite the term. The applicant typically provides 10 years of CAP data.

For terms enclosed in quotation marks, the intent is that when compiling the database, only CAP entries where the term is used independently are included. For example, for "age," CAP entries would not be included where "age" was used in package or signage.

It would be helpful to the staff to have one datasheet which incorporates all of the entries associated with the OpE key word terms. This datasheet would be used by staff to search for CAP entries that might not be associated with a specific OpE search term, but is of interest due to data reviewed by accessing the search terms.



89-13	COAT	FIRE BARRIER
"AGE" <sup>1</sup>	COMPONENT COOLING	FLAK
"AGED" <sup>1</sup>	WATER RADIATION	FLAW
AGING	MONITOR	FLOW ACCELERATED
ALUMINUM	CONCRETE	FLOW ACCELERATED
ARC	CONDUCTIVITY	CORROSION
ARCING	CONNECTION	FLOW RESTRICT
BAC	CONTAMINATED CABLE	FLOW RESTRICTOR
BIOFOUL	COOLER	FLOW-ACCELERATED
BIOLOGICAL	COPPER	FLOW-ASSIST
BLISTER	CORONA CAMERA	FLUORIDE
BLOCK	CORRO	FOUL
BOLT	CORROS	FRACTURE
BORAL	CRACK	FUEL HANDLING
BORIC	CRACKED CABLE	BUILDING RADIATION
BREAK	CRANE	MONITOR
BRITTLE	CREVICE	FUEL OIL
BRITTLE CABLE	CYCL	FUSE HOLDER
BRITTLE INSULATION	DAMAGE	GALVANIC
BRONZE	DAMPER	GROUT
BRYOZOA	DEALLOY	HALON
BURIED	DEALUM	HANGER
BUS	DEGRAD	HARDEN
CABLE	DEGRADED CABLE	HEAT EXCH
CABLE BURNED	DEGRAPH	HEAT SINK
CABLE BUS	DELAMIN	HEAT TRANS
CABLE BUS –	DEPOSITS	HIGH RANGE
EXTERNAL SURFACE –	DETECTION	CONTAINMENT AREA
CORROSION – PITTING	DETERIORATED CABLE	MONITOR
CABLE BUS – REDUCED	DEZINC	HIGH RANGE
ELECTRICAL	DISSOLVED OXYGEN	RADIATION MONITOR
INSULATION	DRAINAGE	HIGH VOLTAGE
CABLE CONTAMINATION	DRIP	INSULATOR
CABLE DEGRADATION	DROP	HIGH VOLTAGE
CABLE DISCOLORED	DUG	INSULATOR – CRACKS –
CABLE INSULATION	EPR	FOREIGN DEBRIS
CABLE REPLACED	EQ	HIGH VOLTAGE
CABLE RESIDUE	EQ AUDIT	INSULATOR –
CABLE TESTING	EQ INSPECTION	MECHANICAL WEAR-
CARBON DIOXIDE	EQ REANALYSIS	CORROSION
CAST	EQ SELF ASSESSMENT	HIGH VOLTAGE
CAVITAT	EROSI	INSULATOR – REDUCED
CHECWORK	ETHYLENE PROPYLENE	ELECTRICAL
CHLORIDE	RUBBER	INSULATION
CLAM	EXCAVAT	HIGH VOLTAGE
CLEVIS	EXCORE	INSULATOR – SALT –
CLOG	FAC	DUST – COOLING
CLOSURE STUD	FAIL	TOWER PLUME –
CMU	FATIGUE	CONTAMINATION
CO2	FEEDWATER NOZZLE	HOLE

HOLIDAY  
HWC  
HYDROGEN WATER  
CHEMISTRY  
IMPINGE  
INDICATION  
INFRARED INSPECTION  
INSTRUMENT AIR  
INSULATION  
INSULATION  
RESISTANCE  
INSULATOR  
INTERG  
INTERMITTENT  
IRON  
JACKET  
LEACH  
LEAK  
LINED  
LINING  
LITHIUM  
LOSS OF MATERIAL  
MAIN CONTROL ROOM  
RADIATION MONITO  
MANHOLE  
MASONRY  
MEB  
MEDIUM VOLTAGE  
CABLE  
METAL ENCLOSED BUS  
MIC  
MICROBIOLOGIC  
MIN WALL  
MOLLUSK  
MOLY  
MORTAR  
NEUTRON ABSORB  
NEUTRON FLUX  
NEUTRON FLUX  
DETECTOR  
NEUTRON-ABSORB  
NICKEL-ALLOY  
NOBLE  
NODUL  
OIL ANALYSIS  
ORGANIC  
OXIDATION  
OXYGEN  
PARTIAL DISCHARGE  
PEEL  
PERFORAT

PIPING  
PIT  
POLYMER  
POLYMER HV  
INSULATORS  
PRELOAD  
PWSCC  
Q LIST  
QUALIFICATION  
RADIATION  
MONITORING  
RECUR  
REDU  
RESIDUE  
RETURN LINE NOZZLE  
RUPTURE  
RUST  
SCALE  
SCALING  
SCC  
SEDIMENT  
SEEP  
SERVICE WATER  
SHELL  
SILICONE RUBBER  
SILT  
SIR  
SPALL  
SPRAY  
SPRINKLER  
STEEL  
STRESS  
STRESS CORROSION  
CRACKING  
STRUCTURAL SUPPORT  
STUCK  
SUBMERGED CABLE  
SULFATE  
SUMP  
SUMP PUMP  
SWITCHYARD  
TAN DELTA  
TANK  
TERMINATION  
THERMAL  
THERMOGRAPHY  
THREAD  
THROUGH WALL  
TRACKING  
TRANSGRA

TRANSIENT  
MONITORING  
TRANSMISSION  
CONDUCTOR – LOSS OF  
STRENGTH -  
CORROSION  
TRANSMISSION  
CONNECTORS –  
OXIDATION – LOSS OF  
PRELOAD  
TRANSMISSION LINE  
UNDERGROUND  
VAULT  
VESSEL INTERNALS  
VIBRATION  
VOLTAGE  
WALL LOSS  
WALL THICK  
WALL THIN  
WASTAGE  
WASTED  
WATER INTRUSION  
WEAR  
WELD  
WORN  
WRAP  
ZINC