From:	Brady, Bennett
To:	michaelp.gallagher@exeloncorp.com
Cc:	Oesterle, Eric; Bloom, Steven; Alley, David; Martinez Navedo, Tania; Mitchell, Jeffrey; Medoff, James; Hoffman, Keith; Fu, Bart; Jenkins, Joel; Huynh, Alan; Cheruvenki, Ganesh; Min, Seung; Gavula, James; Holston, William; Gardner, Tony; Wittick, Brian; Cuadrado de Jesus, Samuel; Buford, Angela; Prinaris, Andrew; Lehman, Bryce; Allik, Brian; Rezai, Ali; Hovanec, Christopher; Chereskin, Alexander; Drucker, David; Rogers, Bill; Gibson, Lauren; Hoang, Dan; Yoder, Matthew; Fitzpatrick, BOB; Sadollah, Mohammad; Nguyen, Duc; Brimfield, Terrence; Whitman, Jennifer; Khan, Nadim; Iqbal, Naeem; Patel, Amrit; Parks, Benjamin; Wu, Angela; Rogers, Bill; Comar, Manny; Lopez, Juan; Thomas, George; Yoo, Mark; Sheng, Simon; Krepel, Scott; Mitchell, Jeffrey
Bcc:	Bennett Brady (Bennett.Brady@nrc.gov)
Subject:	REQUESTS FOR ADDITIONAL INFORMATION FOR THE SAFETY REVIEW OF THE PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 SUBSEQUENT LICENSE RENEWAL APPLICATION – SET 2
Date:	Friday, May 03, 2019 2:18:00 PM
Attachments:	Peach Bottom RAIs Set 2 (Rev 2).pdf

Mr. Gallagher,

By letter dated July 10, 2018, (Agencywide Documents Access and Management System (ADAMS) Package 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, Units 2 and 3 (Peach Bottom).

The NRC staff is reviewing the information contained in the subsequent license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review.

Clarification calls were held on each of the RAIs that were requested by your staff.

These requests for additional information were discussed with David Distel of your staff, and a mutually agreeable date for the response is within 30 days from the date of this email.

If you have any questions, please contact me by e-mail Bennett.brady@nrc.gov.

Sincerely,

/RA/
Bennett M. Brady
Senior Project Manager
Division of License Renewal
Office of Nuclear Reactor
Regulation O 11 – D8
301-415-2981

50-277 and 50-278

Enclosure:
Requests for Additional Information

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 (PEACH BOTTOM)
SUBSEQUENT LICENSE RENEWAL APPLICATION (SLRA)
REQUESTS FOR ADDITIONAL INFORMATION (RAIS)
L-2018-RNW-0012

SAFETY - SET 2

Regulatory Basis:

10 CFR § 54.21(a)(3) requires an applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation.

1. SLRA Section B.2.1.34 Structures Monitoring

RAI B.2.1.34-1

Background

SLRA Section B.2.1.34 states that the Structures Monitoring Program will be consistent with the ten [program] elements of GALL-SLR Report AMP XI.S6, "Structures Monitoring". As described in the SRP-SLR and to ensure compliance with the 10 CFR 54.21(a)(3) requirements, for those programs that the applicant claims are consistent with the GALL-SLR Report, the NRC staff will verify that the applicant's programs are consistent with those described in the GALL-SLR Report and/or with plant conditions and operating experience (OE) during the performance of an AMP audit and review.

In SLRA Section B.2.1.34, Exelon included enhancement No. 6 to the Structures Monitoring Program to demonstrate consistency with the "scope of program," "parameters monitored or inspected," and "detection of aging effects" program elements of the GALL-SLR Report AMP XI.S6. This enhancement states, in part, that groundwater chemistry from locations that are representative will be monitored and adverse results will be entered in the corrective action program. The enhancement also states that engineering evaluation will be developed to evaluate the water chemistry results, assess its impact, and determine if additional actions are warranted. Also the SLRA states that inaccessible areas will be inspected when they become accessible.

During the audit the staff reviewed Exelon's Report Nos. 17L0736, 17D0989 and 18B1256, and noted that several monitoring wells have recorded chloride levels above the GALL-SLR Report threshold (i.e., chlorides levels greater than 500 ppm) for aggressive groundwater/soil throughout the year; thus, structures near these locations may be exposed to a non-seasonal aggressive groundwater/soil environment.

For plants with aggressive groundwater/soil, the "detection of aging effects" program element of GALL-SLR Report AMP XI.S6, "Structures Monitoring," recommends the implementation of a plant-specific AMP that accounts for the extent of the degradation experienced to manage the concrete aging during the subsequent period of extended operation (SPEO). The GALL-SLR Report also states that this plant-specific AMP may include evaluations, destructive testing, and/or focused inspections of representative accessible (leading indicator) or below-grade, inaccessible concrete structural elements exposed to aggressive groundwater/soil, on an interval not to exceed 5 years.

Issue

The enhancement provided in SLRA Section B.2.1.34 which proposes future actions based on future groundwater/soil chemistry analysis is not consistent with the GALL-Report recommendations to implement plant-specific AMP actions to effectively manage concrete aging in structures exposed to an aggressive groundwater/soil environment. OE cited above demonstrates that an aggressive groundwater condition is noted to currently exist.

The staff notes that, when structures are exposed to an aggressive groundwater/soil, the monitoring and evaluation of groundwater chemistry and use of opportunistic inspections on its own may not be sufficient to ensure that all the aging effects associated with concrete structural degradations (e.g. cracking, loss of material due to rebar corrosion, etc.) are being adequately monitored, detected, and managed before any loss of function. The staff also notes that results from opportunistic inspections performed in other structures not exposed to an aggressive groundwater/soil environment may not be a representative indicator of those structures exposed to an aggressive groundwater/soil environment.

Request

1. Clarify the statement of consistency of SLRA Section B.2.1.34 that the Structures Monitoring Program will be consistent with the ten [program] elements of GALL-SLR Report AMP XI.S6, considering that the GALL recommended plant specific AMP associated with known aggressive groundwater has not been developed.
   If a plant specific AMP will be developed, describe the plant-specific program actions or enhancements that will be implemented to ensure that the aging effects associated with inaccessible concrete structural elements exposed to an aggressive groundwater/soil environment are adequately managed during the SPEO, or provide a technical justification for not implementing plant-specific actions.

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2. Scoping and Screening Review for Fire Protection Program

Regulatory Basis

The plant-specific current licensing basis (CLB) must be maintained during the subsequent license renewal term in the same manner and to the same extent as during the extended and original licensing term. In implementing these two principles, the rule in 10 CFR 54.4, “Scope,” defines the scope of license renewal as those plant SSCs, as well as the process used to identify the SSCs that are subject to an aging management review, as required by 10 CFR 54.21(a)(1); (a) that are safety-related; (b) whose failure could affect safety-related functions; and (c) that are relied on to demonstrate compliance with the NRC's regulations for fire protection, environmental qualification, pressurized thermal shock, anticipated transients without scram, and station blackout. In particular, Section 54.4(a)(3) of 10 CFR includes within the scope of license renewal all SSCs relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with Commission’s regulations for fire protection, 10 CFR 50.48.

In accordance with the criteria of 10 CFR 54.29(a), the staff must evaluate whether actions have been identified and have been or will be taken with respect to managing the effects of aging during the second period of extended operation, such that there is reasonable assurance that the activities authorized by the subsequent renewed license will continue to be conducted in accordance with the CLB.

To complete its review and enable making a finding under Section 54.29(a) of 10 CFR, the staff requires additional information regarding the matters described below.

RAI 2.3.3.14-1

Background:

For Peach Bottom Atomic Power Station, Units 2 and 3, the staff reviewed the subsequent license renewal application (SLRA); NUREG-1769, "Safety Evaluation Report Related to License Renewal of Peach Bottom Atomic Power Station, Units 2 and 3," March 2003, ADAMS Package Accession No. ML031010136; SLRA drawings, Updated Final Safety Analysis Report (UFSAR), Sections 7.1.6.2, 10.12, and fire protection program, and the following fire protection current licensing basis (CLB), documents listed in Peach Bottom Atomic Power Station, Units 2 and 3 license condition 2.C.4:

.Issue:

The following boundary drawings show the fire protection systems/components as not within the scope of license renewal (i.e., not colored in green):

LRA Drawing	Systems/Components	Location
SLR-PB-318, Sheet 1	Auxiliary Boiler Building Fire Suppression System	B8 and C8
SLR-PB-318, Sheet 1	West Side Dewatering Building Water Curtain	H6
SLR-PB-318, Sheet 10	Post Indicator Valves	E3, G6

Request:

Verify whether the fire protection systems and components listed above are within the scope of license renewal in accordance with 10 CFR 54.4(a) and whether they are subject to an aging management review in accordance with 10 CFR 54.21(a)(1). If they are not within the scope of license renewal and are not subject to an aging management review, the staff requests that the applicant provide justification for the exclusion.

RAI 2.3.3.14-2

Background:

For Peach Bottom Atomic Power Station, Units 2 and 3, the staff reviewed the subsequent license renewal application (SLRA); NUREG-1769, "Safety Evaluation Report Related to License Renewal of Peach Bottom Atomic Power Station, Units 2 and 3," March 2003, ADAMS Package Accession No. ML031010136; SLRA drawings, Updated Final Safety Analysis Report (UFSAR), Sections 7.1.6.2, 10.12, and fire protection program, and the following fire protection current licensing basis (CLB), documents listed in Peach Bottom Atomic Power Station, Units 2 and 3 license condition 2.C.4:

A pressure maintenance system or jockey pump is installed on fire water supply systems in order to maintain system pressure while tolerating small fluctuations so the main fire pump does not start until a fire is present. The pressure maintenance system prevents frequent starting of the main fire pumps by maintaining pressure in the fire water supply system.

Issue:

Section 2.3.3.14 and Table 2.3.3-14 of the SLRA does not include a pressure maintenance system or jockey pump within the scope of subsequent license renewal in accordance with 10 CFR 54.4(a) and subject to an aging management review in accordance with 10 CFR 54.21(a)(1)

Request:

Verify whether a pressure maintenance system or jockey pump is in the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an aging management review in accordance with 10 CFR 54.21(a)(1). If it is excluded from the scope of license renewal and not subject to an aging management review, the staff requests that the applicant provide justification for the exclusion.

RAI 2.3.3.14-3

Background:

For Peach Bottom Atomic Power Station, Units 2 and 3, the staff reviewed the subsequent license renewal application (SLRA); NUREG-1769, "Safety Evaluation Report Related to License Renewal of Peach Bottom Atomic Power Station, Units 2 and 3," March 2003, ADAMS Package Accession No. ML031010136; SLRA drawings, Updated Final Safety Analysis Report (UFSAR), Sections 7.1.6.2, 10.12, and fire protection program, and the following fire protection current licensing basis (CLB), documents listed in Peach Bottom Atomic Power Station, Units 2 and 3 license condition 2.C.4:

Issue:

Table 2.3.3-14 of the SLRA does not include the following fire protection components:

- diesel engine jacket water heat exchanger and portions of the diesel fuel oil system and
- starting air system supplied by a vendor on a diesel generator skid including heat exchanger and muffler
- fire hose connections, hose racks
- flexible hoses
- standpipe risers
- restricting orifice, flow elements, metal flex connection
- seismic support for standpipes system piping
- floor drains for removal of fire water
- fire wraps
- radiant heat shields
- seismic gap covers
- structural steel fire proofing

Request:

Verify whether the fire protection components listed above are within the scope of license renewal in accordance with 10 CFR 54.4(a) and whether they are subject to an aging management review in accordance with 10 CFR 54.21(a)(1). If they are not within the scope of

license renewal and are not subject to an aging management review, the staff requests that the applicant provide justification for the exclusion.

3. **SLRA Table 3.5.2-5 Cracking Due to Stress Corrosion Cracking (SCC) For Stainless Steel (SS) Refueling Bellows Assemblies**.

Regulatory Basis

10 CFR § 54.21(a)(3) requires an applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation.

RAI 3.5.2.2.1.6-1

Background

SLRA Table 3.5.2-5, "Containment Structure," as amended by Exelon's letter dated January 23, 2019, credits the One-Time Inspection Program to manage cracking due to stress corrosion cracking (SCC) for stainless steel (SS) refueling bellows assemblies. Exelon associated these Table 2 AMR items with GALL-SLR Report item III.B2.T-37a, and cited generic note A to state that the AMR line items are consistent with the GALL-SLR Report item for the component, material, environment and aging effect.

GALL-SLR Report item III.B2.T-37a is associated with SRP-SLR Table 3.5-1, item 100, which recommends that aluminum or SS support members, welds, bolted connections, or support anchorage to building structure components be managed for loss of material due to pitting and crevice corrosion, and cracking due to SCC by either the One-Time Inspection Program, the Structures Monitoring Program, or the External Surfaces Monitoring of Mechanical Components Program. SRP-SLR Section 3.5.2.2.2.4, associated with Table 3.5-1, item 100, recommends a further evaluation of the program to ensure that an adequate program is credited to manage the aging effects.

Issue

For the AMR items associated with SS refueling bellows assemblies in SLRA Table 3.5.2-5, the staff identified the following issues:

1. The SLRA AMR line items credit the SLRA One-Time Inspection Program to manage cracking due to SCC and loss of material due to pitting and crevice corrosion for SS refueling bellows assemblies, however the SLRA does not provide sufficient information to demonstrate how the program will adequately manage the aging effects for these components to ensure that the intended function(s) will be maintained consistent with the current licensing basis. The staff notes that the proposed new One-Time inspection program uses general visual inspections to detect aging effects in order to demonstrate that unacceptable degradation is not occurring (or leads to management of aging effects if present). However, it is not clear whether cracking due to SCC can be reliably identified through a general visual examination as opposed to a more detailed examination. Therefore, the staff needs additional information to assess whether the One-Time inspection

program is acceptable to address the aging effect of cracking due to SCC for refueling bellows assemblies.

2. The SLRA AMR line items cite generic Note A, indicating that they are consistent with GALL-SLR for component, material, environment and aging effect. However, it does not appear that these items are consistent with the identified GALL-SLR Report item III.B2.T-37a for the component type. The staff notes that the associated GALL-SLR Report item addresses structural components with a structural support function (e.g. support members, welds, bolted connections, etc.), and was not intended to generally address other components having a different type of function (e.g. bellows that function as a water retaining/boundary). The staff also notes that other SRP-SLR Table 3.5-1 items, associated with the further evaluation in Section 3.5.2.2.1.6, may address this type of component and function (e.g. Table 1 items 10, 27, 39, etc.).

Request

1. Describe how the SLRA One-Time Inspection Program will adequately manage the aging effects for refueling bellows components so that the intended functions will be maintained consistent with the current licensing basis through the subsequent period of extended operations.

2. Clarify the statement of consistency with regards to component type for the refueling bellows components that cited generic note A in SLRA Table 3.5.2-5, and the associated SLRA Sections 3.5.2.2.2.4 and/or 3.5.2.2.1.6.

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4 SLRA Section 4.3.6.1 BWR reactor vessel internal (RVI) fatigue analyses

Regulatory Basis

In accordance with 10 CFR 54.21(c)(1), a list of time-limited aging analyses, as defined in 10 CFR 54.3, must be provided. The applicant shall demonstrate that: (i) the analyses remain valid for the period of extended operation; (ii) the analyses have been projected to the end of the period of extended operation; or (iii) the effects of aging on the intended function(s) will be adequately managed for the period of extended operation.

RAI 4.3.6.1-1

Background

SLRA Section 4.3.6.1 addresses the generic fatigue analyses for various BWR reactor vessel internal (RVI) components as a time-limited aging analysis (TLAA). In the section, the applicant projected the reactor vessel internal fatigue analyses through the subsequent period of extended operation and dispositioned the TLAA in accordance with 10 CFR 54.21(c)(1)(ii).

SLRA Section 4.3.6.1 also indicates that the generic 40-year design cumulative usage factor (CUF) values are based on the severities of various normal, upset, emergency, or faulted transients and numbers of the transient cycles. The applicant further stated that the 40-year CUF values were multiplied by two to obtain 80-year CUF (non-environmental) values since the units would have to experience twice as many actual transient cycles than originally assumed for the 40-year operation.

Note 1 of SLRA Tables 4.3.1-1 and 4.3.1-2 indicates that transient cycle numbers 1 through 28 are based on the original GE reactor thermal cycle diagrams. Note 1 of the SLRA tables also indicates that transient numbers 29 through 33 were added since the transients are associated with other transients that contribute to fatigue usage. Transient numbers 29, 30, 31, 32 and 33 are the following transients: No. 29, "SRV [safety relief valve] LIFT;" No. 30, "Loss of RWCU [reactor water cleanup] and Restart of RWCU;" No. 31, "Operating-Basis Earthquake;" No. 32, "Faulted Condition – Safe Shutdown Earthquake;" and No. 33, "FW [feedwater] Temp Reduction."

Issue

Given the addition of transient numbers 29 through 33 to the original design transients (GE reactor thermal cycle diagrams), the staff found that the transients analyzed in the generic RVI fatigue analyses may not have considered the effects of PBAPS transient numbers 29 through 33 on RVI fatigue.

Request

Please clarify whether the TLAA evaluation for the generic BWR RVI fatigue analyses considers the effects of PBAPS transient numbers 29 through 33 on RVI fatigue. If the effects of these transients are not considered, provide justification for the omission.

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5. SLRA Section 2.3.2 Engineered Safety Features and Section 2.3.3 Auxiliary Systems

Regulatory Basis

10 CFR 54.4(a) "Scope" reads in part:

> (a) Plant systems, structures, and components within the scope of this part are--
>
> (1) Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis events (as defined in 10 CFR 50.49 (b)(1)) to ensure the following functions--
>
> (i) The integrity of the reactor coolant pressure boundary;
>
> (ii) The capability to shut down the reactor and maintain it in a safe shutdown condition; or
>
> (iii) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in § 50.34(a)(1), § 50.67(b)(2), or § 100.11 of this chapter, as applicable. …

54.21(a) "Contents of application--technical information" reads in part:

> Each application must contain the following information:
>
> (a) An integrated plant assessment (IPA). The IPA must--

(1) For those systems, structures, and components within the scope of this part, as delineated in § 54.4, identify and list those structures and components subject to an aging management review. Structures and components subject to an aging management review shall encompass those structures and components--

(i) That perform an intended function, as described in § 54.4, without moving parts or without a change in configuration or properties.

5a Secondary Containment System (SLRA Section 2.3.2.7)

RAI 2.3.2.7-1

Issue

Sheet 1 "*Unit 2 & Common*" and Sheet 2 "*Unit 3*" of SLRA Drawing SLR-PB-M-391 and displays four occurrences on each Sheet:

"Unit 2 & Commons"	"*Unit 3*"
Valves AO-20452 / 3 Coordinate F-7	Valves AO-30452 / 3 Coordinate F-7
Valves AO-20457 / 8 Coordinate E-7	Valves AO-30457 / 8 Coordinate E-7
Valves AO-20459 /-20460 Coord D-7	Valves AO-30459 /-30460 Coord D-7
Valves AO-20461 / 2 Coordinate F-4	Valves AO-30461 / 2 Coordinate F-4

where:

I. the inboard piping penetrating the Reactor Building wall (i.e., Secondary Containment Boundary) from each set of two Safety Related (SR) Secondary Containment Isolation Valves (SCIVs) is not indicated as being subject to Aging Management Review (AMR). In addition,
II. the connected piping/ductwork on the outboard side of each set of two SR SCIVs is also not indicated as being subject to AMR.

It appears that the inboard piping all the way through Reactor Building wall (i.e., Secondary Containment penetration) is an integral part of the Secondary Containment Boundary. It also appears that the outboard piping fits the scoping criterion entitled "Connected to and Provide Structural Support for Safety-Related SSCs" as contained in LRA Section 2.1.5.1 "Nonsafety-Related Affecting Safety-Related – 10 CFR 54.4(a)(2)."

The staff's review of SLRA Section 2.4.16 "Reactor Building" determined that the SLRA did not provide the reason(s) for not subjecting these components to AMR.

Request

Please identify where the SLRA addresses the AMR for the inboard and outboard piping and structural supports (i.e., where applicable) on the subject Unit 2 and Unit 3 SLRA Drawings. If not addressed elsewhere, provide a justification for not including these "Component Types" and their associated "Environments" in the aging management program.

5b. Standby Gas Treatment System (SLRA 2.3.2.8}

RAI 2.3.2.8-1

Issue

Sheet 1 "*Unit 2 & Common*" and Sheet 2 "*Unit 3*" of SLRA Drawing SLR-PB-M-391 and displays two occurrences on each Sheet:

"Unit 2 & Commons"	"*Unit 3*"
Valves AO-20470-1 / -2 Coord. B-4	Valves AO-30470-1 / -2 Coord. B-4
Valves AO-20463 / 4 Coordinate E-2	Valves AO-30463 / 4 Coordinate E-2

where:

I. the piping/ductwork penetrating Refuel Floor from each set of two Safety Related (SR) SGTS Isolation Valves, (e.g. AO-20470-1/2) is not indicated as being subject to Aging Management Review (AMR).
II. the connected piping/ductwork on the outboard side of each set of two SR Secondary Containment Isolation Valves (SCIVs) (e.g. AO-20463/4) is also not indicated as being subject to AMR.

These piping/ductwork sections fit the scoping criterion entitled "Connected to and Provide Structural Support for Safety-Related SSCs" as contained in LRA Section 2.1.5.1 "Nonsafety-Related Affecting Safety-Related – 10 CFR 54.4(a)(2)." As such, it appears that these piping/ductwork sections are subject to AMR.

The staff's review of SLRA Section 2.4.16 "Reactor Building" determined that the SLRA did not provide the reason(s) for not subjecting these components to AMR.

Request

Please identify where the SLRA addresses the AMR for these piping/ductwork sections and structural supports on the subject Unit 2 and Unit 3 SLRA Drawings. If not addressed elsewhere, provide a justification for not including these "Component Types" and their associated "Environments" in the aging management program.

5c Battery and Emergency Switchgear Ventilation System (SLRA Section 2.3.3.3)

RAI 2.3.3.3-1

Issue

SLRA Section 2.3.3.3 reads in part: "*3. Relied upon in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for Fire Protection (10 CFR 50.48). The Battery and Emergency Switchgear Ventilation System is relied*

upon to be operable during and following a fire event for explosion protection. 10 CFR 54.4(a)(3)"

Sheet 1 "*Unit Common Only*" of SLRA Drawing SLR-PB-M-399 "License Renewal Drawing Emergency Switchgear, Battery Room, Laboratory Supply & Exhaust" shows Component Types such as:

a) Heat Exchanger Housings (@ Coordinates C-5 and F-5 – 0AE073 & 0BE073); and

b) Filter Housing & Instrument Tubing (@ Coordinate D-7 – Roll Filter 00F043).

Items "a" & "b" are indicated as being subject to Aging Management Review. In contrast, Table 2.3.3-3 "Battery and Emergency Switchgear Ventilation System - Components Subject to Aging Management Review" does not list these "Component Types" and the respective "Intended Function."

With respect to Item "a)", based on the staff's review of SLRA Table 3.3.2-1 "Auxiliary Steam System -- Summary of Aging Management Evaluation" does not appear to address the internal/external surfaces of the heat exchanger housings. The SLRA Drawing contains Note 5 which reads "*The Heating Coils Consists of Heating Coils Located in The HVAC Housing. The Heating Coils Are Evaluated with The Auxiliary Steam System for Aging Management Review. The Air Side Components Do Not Perform an Intended Function and Are Not in Scope for License Renewal."* The Air Side Components would appear to consist of the external tube side of the heating coil and the HVAC housing. Table 3.3.2-1 addresses the aging management of the external tube side of the heating coil but not the internal/external surfaces of the HVAC housing which could have an Intended Function of "Pressure Boundary" with respect to the Battery and Emergency Switchgear Ventilation System. Preserving the "Pressure Boundary" of the HVAC heater housing is important to the Battery and Emergency Switchgear Ventilation System function of eliminating explosive gases by ventilating the battery rooms with fresh outside air (i.e., free of potentially toxic smoke and/or chemical vapors from internal the internal chambers of the power block).

From the staff's review of the electronic documents 1 "Aux Steam Screening, Rev. 0" and #3 'Batt Sw HVAC Screening rev 2" on the Exelon portal no line item exists with appropriate internal and external environments for the heater coil HVAC housings of 0AE073 & 0BE073

With respect to Item "b)", The SLRA Drawing contains Note 3 which reads "*The Filter Media Is Periodically Replaced, And Therefore Are Short Lived and Not Subject to Aging Management Review*". This note is applicable to the filter media of Item "b".

However, the Note does not preclude the need to manage the aging effects of the filter housing and the instrument tubing to "DPI00018" and "DPS00018" to preserve the "Intended Function" of "Pressure Boundary." From the staff's review of the above documents, a line item for the "Component Type" of "Ducting and Components" exists with appropriate internal and external environments for the Roll Filter 00F043 housing. However, the SLRA Drawing does not indicate that the upstream and downstream instrument tubing associated with this filter is subject to AMR with an Intended Function of "Pressure Boundary." Preserving the "Pressure Boundary" of the systems ductwork and its connected instrument tubing is important to the Battery and Emergency Switchgear Ventilation System function of eliminating explosive gases by ventilating the battery rooms with fresh outside air (i.e., free of potentially toxic smoke and/or chemical vapors from internal the internal chambers of the power block). From the staff's review of Document #3, the line items associated with the Component Type "Piping, piping components" could (i.e., not conclusive) address the subject instrumentation tubing. The

instrumentation tubing also appears to perform the function of controlling rotation of the filter drums.

Request

a) Please identify where the SLRA addresses the aging management of the "Component Types" identified above with respect to SLRA Drawing SLR-PB-M-399, Sheet 1. If not addressed elsewhere, provide a justification for not including these heating coil HVAC housings and their associated "Environments" and "Intended Functions" in an aging management program.
b) The staff requests clarification whether the pressure boundary integrity of the instrumentation tubing and rotation of the filter drums is necessary to ensure minimum flow requirements and the System's 10 CFR 54.4(a)(3) Fire Protection function are satisfied for the battery rooms. If so, revise the SLRA as appropriate.

RAI 2.3.3.3-2

Issue

Sheet 4 "*Unit 2, 3 & Common Only*" of SLRA Drawing SLR-PB-M-399 "License Renewal Drawing Emergency Switchgear, Battery Room, Laboratory Supply & Exhaust" indicates that the Control Room Roof (Coord. G-1) and Radwaste Building Roof (Coord. B-3) ventilation exhaust hoods as not being subject to Aging Management Review (AMR).

In apparent conflict, both SLRA Section 2.3.3.3 and PBAPS UFSAR Section 10.14.3.1 "Emergency Switchgear and Battery Rooms" indicate that both exhaust hoods are located on the radwaste building roof.

These exhaust hoods shelter the ventilation exhaust ductwork from the Unit 2 & Unit 3 Battery Rooms and the Emergency Switchgear Rooms, respectively, which may be necessary to prevent blockage that would interfere with the temperature control and combustible gas control intended functions of the system. The staff notes that neither exhaust hood is shown as being subject to AMR on the SLRA Drawing. The staff notes that for the "Intended Function" of "Pressure Boundary" and the Component Type "Ducting and Components" as contained in SLRA Table 3.3.2-3 "Battery and Emergency Switchgear Ventilation System - Summary of Aging Management Evaluation", there is an external environment [i.e., Air – Outdoor (External)] for "Galvanized Steel" that correlates to a roof top environment. In addition, the staff notes that "Peach Bottom Atomic Power Station, Units 2 and 3 Screening Report, Document #3 "Battery and Emergency Switchgear Ventilation System", Revision No. 2" on the portal, does contain line items for the "Ducting and Components" pertaining to "*Exhaust hood on R/W Bldg roof per M-447*."

Request

Please provide additional clarity to SLRA and UFSAR. Please affirm that the SLRA addresses the aging management of both Exhaust Hoods as identified above on SLRA Drawing SLR-PB-M-399, Sheet 4. If both Exhaust Hoods are not addressed in SLRA Table 3.3.2-3 or elsewhere, provide a justification for not including both Exhaust Hoods and their associated "Environment(s)" in an aging management program.

5d. Control Room Ventilation System (SLRA Section 2.3.3.7)

RAI 2.3.3.7-1

Issue

Sheet 1 "*For Common Only*" of SLRA Drawing SLR-PB-M-384 "License Renewal Drawing Control Room HVAC" shows the "Component Type" Heat Exchanger (i.e. HVAC) Housing (@ Coordinates D-7 – 0AE068).

Based on the staff's review, Table 3.3.2-1 "Auxiliary Steam System -- Summary of Aging Management Evaluation" does not address the internal/external surfaces of the heat exchanger housing. The SLRA Drawing contains Note 4 which reads "*The Control Room Fresh Air Supply Preheat Coil Consists of Heating Coils Located in The HVAC Housing. The Heating Coils Are Evaluated with The Auxiliary Steam System for Aging Management Review. The Air Side Components Do Not Perform an Intended Function and Are Not in Scope for License Renewal*." The Air Side Components would appear to consist of the external tube side of the heating coil and the HVAC housing. Table 3.3.2-1 addresses the aging management of the external tube side of the heating coil but not the internal /external surfaces of the HVAC housing which appears to have an Intended Function of "Pressure Boundary" with respect to the Control Room Ventilation System. The staff notes that the internal environment upstream and downstream sections of HVAC ducting for 0AE068 would operate at below atmospheric pressure and the ductwork maintains a pressure boundary function. Similarly, the air side of the 0AE068 heater housing would have an internal environment that operates at below atmospheric pressure and maintains a pressure boundary function. Due to this, the aging effects of the heater housing need to be managed during the period of extended plant operations, so as not to create a leakage bypass path around safety related radiation elements RE-070A/B/C/D and thereby impact assumed design basis accident system response times.

Request

Please identify where the SLRA addresses the aging management of the "Component Type" Heat Exchanger Housing identified above for SLRA Drawing SLR-PB-M-384, Sheet 1. If not addressed elsewhere, provide a justification for not including these "Component Types" and their associated "Environments" in an aging management program.

RAI 2.3.3.7-2

Issues:

a) Sheet 3 "Unit 2, 3 & Common" of SLRA Drawing SLR-PB-M-384 "License Renewal Drawing Control Room HVAC" shows Control Room Ventilation ducts that penetrate the Control Room Envelope (CRE) Boundary but not subject to Aging Management Review. Similarly, the instrument tubing "Open to the Control Room" to "PE-00636" (@ from Coordinates D-5 to C-5) is not indicated as subject to Aging Management Review. It appears that these ducts and in-line components [e.g. filter housings (Coord. C-3), cooling coil housings (Coord. C-3), fan housings (Coord. C-4)] and instrument tubing represent extensions of the CRE Boundary "Pressure Boundary."

b) The staff notes that SLRA Section 2.4.4.20 "Turbine Building and Main Control Room Complex" neither addresses the issue of the CRE nor how the aging management of the

structural components that comprise the CRE were specifically and comprehensively identified in the SLRA. Section 2.4.4.20 reads in part"

> Components not included in the evaluation boundary of the Turbine Building and Main Control Room Complex are roofing, roof hatches, roof downspout drains, component supports, electrical enclosures (conduit, cable trays, cabinets, enclosures, racks, frames and panels for electrical equipment and instrumentation), the building cranes, other miscellaneous cranes and hoists, hazard barriers (doors, dampers, fire rated barriers and enclosures, fire proofing material, penetration seals and sleeves, walls and slabs), and ventilation dampers. Roofing, penetration seals, doors and other seals are evaluated with the Hazard Barriers and Elastomers commodity group. Louvers, vents, roof scuttles, platforms, hatches, and other miscellaneous steel are evaluated with the Miscellaneous Steel commodity group. Roof downspouts drains are evaluated with the Plant Equipment and Floor Drain license renewal system, and discharge to the storm drain system. Component Supports are evaluated in the Component Supports commodity group. Conduit, cable trays, cabinets, enclosures, racks, frames and panels for electrical equipment and instrumentation are evaluated in the Electrical and Instrumentation Enclosures and Raceways commodity group. The building crane and other miscellaneous cranes and hoists are evaluated with the Cranes and Hoists System. Fire barriers (doors, dampers, fire rated enclosures, fire proofing material, penetration seals, fire barrier function of walls and slabs) are evaluated with the Fire Protection System.

Request

a) Please identify where the SLRA addresses the aging management of the "Component Types" identified above on SLRA Drawing SLR-PB-M-384, Sheet 3. If not addressed elsewhere, provide a justification for not including these "Component Types" and their associated "Environments" in an aging management program.
b) Based in the apparent exclusion of CRE ductwork and instrument tubing of the Control Room Ventilation System during the development of the SLRA; the staff requests that the applicant demonstrate that appropriate consideration for all the structural components that comprise the CRE has been given per the requirements of 10 CFR 54.4(a) and 54.21(a).

RAI 2.3.3.7-3

Issue

Sheet 3 "For Unit 2, 3 & Common" of SLRA Drawing SLR-PB-M-384 "License Renewal Drawing Control Room HVAC" at Coordinate H-2 indicates the "Control Rm. Ventilation Reheat Coil 00E072" as subject to AMR in support 10 CFR 54.4(a)(2) for structural support or spatial interaction.

The SLRA Drawing contains Note 5 which reads "*The Control Room Reheat Coil Consists of Heating Coils Located in The HVAC Housing. The Heating Coils Are Evaluated with The Auxiliary Steam System for Aging Management Review. The Air Side Components Do Not Perform an Intended Function and Are Not in Scope for License Renewal*."

The Air Side Components would appear to consist of the external tube side of the heating coil and the HVAC housing. Based on the staff's review, Table 3.3.2-1 "Auxiliary Steam System -- Summary of Aging Management Evaluation" does not address the internal/external surfaces of the heat exchanger housing. Table 3.3.2-1 addresses the aging management of the external tube side of the heating coil but not the internal/external surfaces of the HVAC housing which would have an Intended Function of "Pressure Boundary" with respect to the Control Room Ventilation System.

The staff notes that the internal environment upstream and downstream sections of HVAC ducting for 00E072 would operate at above atmospheric pressure and the ductwork maintains a pressure boundary function. Similarly, the air side of heating coil 00E072's housing would have an internal environment that operates at above atmospheric pressure and maintains a pressure boundary function. Due to this, the aging effects of the heating coil housing need to be managed during the period of extended plant operations, so as not to create a leakage path that diverts radiologically filtered supply air from the Control Room Envelope (CRE). The age-related degradation of the heating coil's housing cannot be allowed to negate the assumed CRE design basis accident leakage rate and the integrity of the Peach Bottom CRE Habitability Program (i.e., Technical Specification 5.5.13 "Control Room Envelope Habitability Program").

Request

Please identify where the SLRA addresses the aging management of the air side of heating coil 00E072's housing identified above for SLRA Drawing SLR-PB-M-384, Sheet 3. If not addressed elsewhere, provide a justification for not including this housing and its associated "Environment" in an aging management program.

5e Pump Structure Ventilation System (SLRA 2.3.3.22)

RAI 2.3.3.22-1

Issue

Sheet 1 "Unit 2 & 3" of SLRA Drawing SLR-PB-M-392 "License Renewal Drawing Miscellaneous Buildings Ventilation Flow Diagram" does not show the Component Type "Bird Screens" with its Intended Function of "Filter."

Typically associated with Outside Air Intake Louvers are pest control screens (e.g. "Bird Screens) to prevent wild life from interfering with each ventilation system's operability. The staff notes that both component types "Bird Screens" or "Louvers" appeared in LRA Table 2.3.3-11 "Component Groups Requiring Aging Management Review Pump Structure Ventilation System" dated June 2001. From the staff's review of the "Peach Bottom Atomic Power Station, Units 2 and 3 Screening Report, Pump Structure Ventilation System, Revision No. 0" on the portal there is no evidence that this "Filter" function of the "Bird Screens" has been addressed. In contrast to the LRA, the aging management of the Component Type "Louvers" has been moved to SLRA Section 2.4.12 "Miscellaneous Steel" under the umbrella of "*Louvers, vents, roof scuttles, platforms, hatches, and other miscellaneous steel are evaluated with the Miscellaneous Steel commodity group*." Neither Table 3.5.2-12 "Miscellaneous Steel Summary of Aging Management Evaluation" nor its associated notes provides an explanation for the disappearance of the "Component Type" "Bird Screens."

While not “Noted” on the SLRA Drawing, the staff requires affirmation that “Bird Screens,” with an “Intended Function” of “Filter” were appropriately considered during the Scoping and Screening review.

Request

Please identify where the SLRA addresses the aging management of the “Component Type” “Bird Screens” identified above with respect to SLRA Drawing SLR-PB-M-392, Sheet 1. If not addressed elsewhere, provide a justification for not including this “Component Type” and its associated “Environment” and “Intended Function” in an aging management program.

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6. SLRA B.2.1.42 Metal Enclosed Bus

Regulatory Basis:

Section 54.21(a)(1) of 10 CFR requires the applicant to identify and list those structures and components subject to an aging management review. Section 54.21(a)(3) of 10 CFR requires the applicant to demonstrate that the effects of aging for structures and components within the scope of license renewal and subject to an AMR pursuant to 10 CFR 54.21(a)(1) will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. As described in SRP-SLR, an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing the GALL-SLR Report, and when evaluation of the matter in the GALL-SLR Report applies to the plant. Section 54.21(d) of 10 CFR requires an FSAR supplement to include a summary description of the programs and activities for managing the effects of aging.

RAI B.2.1.42-1

Background:

SLRA Section B.2.1.42, “Metal Enclosed Bus,” addressed the new metal enclosed bus program as consistent with GALL-SLR Report AMP XI.E4, “Metal Enclosed Bus.” Per this GALL-SLR Report AMP, accessible gaskets, boots, and sealants are inspected for surface cracking, crazing, scuffing, dimensional change (e.g., ballooning and necking), shrinkage, discoloration, hardening, loss of strength, or loss of material due to elastomer degradation that could permit water or foreign debris to enter the bus. For segments that are considered inaccessible due to close proximity to walls, ducts, cable trays, equipment or other structural elements, the applicant demonstrates that the inspections and testing of the accessible sections along with alternative analysis, inspection, test, or plant operating experience will continue to maintain all the components consistent with the current licensing basis.

SLRA Section B.2.1.42 stated that there will be no aging management performed for elastomers since PBAPS metal enclosed bus structures do not use gaskets, boots and sealants. SLRA Table 3.6.1 item 3.6.1-011 cited lack of elastomers in bus enclosures. Similarly, the proposed UFSAR supplement in SLRA section A.2.1.42, did not include any aging management activities for elastomers. The NRC staff reviewed the AMP basis document PB-PBD-AMP-XI.E4 and noted that this document also excluded elastomers from this program.

The NRC staff reviewed metal enclosed bus arrangement drawings and discussed with Exelon whether gaskets, sealants, or similar elastomeric material are employed in the enclosure joints

of the in-scope metal enclosed bus components. Upon further investigations, Exelon stated that elastomers are utilized in the construction of these structures.

Issue:

Elastomeric material aging management activities are not included in the SLRA Sections B.2.1.42, A.2.1.42, 3.6.1-011, as well as the associated AMP basis document.

Request:

Provide technical basis for not including aging management of elastomeric material used in in-scope metal enclosed bus structures or revise the SLRA and the associated basis documents to include such activities as recommended in GALL-SLR Report AMP XI.E4.