

**TURKEY POINT NUCLEAR GENERATING UNITS 3 AND 4 (TURKEY POINT)
SUBSEQUENT LICENSE RENEWAL APPLICATION (SLRA)
REQUESTS FOR ADDITIONAL INFORMATION (RAIS)
SAFETY - SET 2**

1. Fire Protection – Scoping and Screening

Regulatory Basis:

The plant-specific CLB must be maintained during the subsequent 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, defines the scope of license renewal as those plants' SSCs, as well as the process used to identify the SSCs that are subject to an AMR, 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. 10 CFR 54.4(a)(3) requires all systems, structures, and components 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 the managing the effects of aging during the period of extended operation, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB. In order to complete its review and enable making a finding under

10 CFR 54.29(a), the staff requires additional information in regard to the matters described below.

RAI 2.3.3.12-1

Background:

For Turkey Point Nuclear Generating, Units 3 and 4, the staff reviewed the SLRA, SLR boundary drawings, NUREG-1759, NFPA 805 DBDs, UFSAR Section 9.6.1, and NFPA 805 safety evaluation, which describe the fire protection program at Turkey Point Nuclear Generating, Units 3 and 4, and how it complies with the requirements of 10 CFR 50.48 and 10 CFR 50.48(c).

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):

<u>LRA Drawing</u>	<u>Systems/Components</u>	<u>Location</u>
5610-M-3016, Sheet 3	Remote Filling Station	B3
5610-M-3016, Sheet 3	Piping, Valve, and Drain	C2, C7, D3, G7
5610-M-3016, Sheet 5	Test Connection	C2, C8, E4, E6
5610-M-3016, Sheet 3	Fire Department Connection	G8

Request:

Verify whether the fire protection systems/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 AMR 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 AMR, the staff requests that the applicant provide justification for the exclusion.

RAI 2.3.3.12-2

Background:

For Turkey Point Nuclear Generating, Units 3 and 4, the staff reviewed the SLRA, SLR boundary drawings, NUREG-1759, NFPA 805 DBDs, UFSAR Section 9.6.1, and NFPA 805 safety evaluation which describe the fire protection program at Turkey Point Nuclear Generating, Units 3 and 4, and how it complies with the requirements of 10 CFR 50.48 and 10 CFR 50.48(c).

Issue:

Table 2.3.3-12 of the SLRA does not include the following fire protection components:

- diesel driven fire pump engine silencer
- sprinklers
- valves body
- fire hose stations, fire hose connections, hose racks
- standpipe risers
- seismic support for standpipes system piping
- floor drains for removal of fire water
- halon fire suppression system storage cylinders

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 AMR 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 AMR, the staff requests that the applicant provide justification for the exclusion.

2. Engineered Safety Features Scoping and Screening

RAI 2.3.2.6-1

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. ...

Issue:

Sheet 1 of the Unit 3 SLRA Drawing for System 094 [P&ID 5613-M-3094] displays the 1" Stainless Steel (SS) Tubing and valve "3-11-034" to Containment penetration P-33 [Coordinate A-2] as not being subject to AMR. Similarly, Sheet 1 of the Unit 4 SLRA Drawing for System 094 [P&ID 5614-M-3094] displays the 1" Stainless Steel Tubing and valve "4-11-034" to Containment penetration P-33 [Coordinate A-2] as not being subject to AMR. During Modes 1, 2, 3 and 4 of reactor operation these SS tubes and valves support the function of routing the sampling influent from the Normal Containment

Coolers discharge ducts, to the Unit 3 and Unit 4 radiation detectors (e.g., RD-3-11 and RD-3-12).

In contrast, SLRA Section 2.3.2.6 “Containment Post-Accident Monitoring and Control” under the subheading “System Intended Functions” reads in part:

Safety-related functions (10 CFR 54.4(a)(1)):

- (1) ...
- (2) Provide control of radioactive releases by isolating the containment purge and instrument air bleed lines in any abnormal event that results in excessive radiation releases to the containment. Additionally, provide a signal to isolate the control room ventilation system (CRVS) and thus prevent the potential ingress of radioactivity into the control room.

The staff notes that Technical Specification 3/4.3.2 Functional Unit 3.c “Containment Ventilation Isolation” (4) of Table 3.3-2 “Engineered Safety Features Actuation System Instrumentation” list an “Applicable Modes” “1,2,3 4” and aligns with Safety-Related function (2).

Accordingly, it can be concluded that the SS tubing and valve on the subject Unit 3 and Unit 4 SLRA Drawings directly support the accomplishment of Safety-Related function (2) during Plant Modes 1, 2, 3 and 4.

Request:

Please identify where the SLRA addresses the AMR for the SS tubing and valve on the subject Unit 3 and Unit 4 SLRA Drawings associated with the Containment Post-Accident Monitoring and Control System. If not addressed elsewhere, provide a justification for not including these “Component Types” and their associated “Environments” in the aging management program.

RAI 2.3.3.11.1-1

Regulatory Basis:

10 CFR 54.4(a) “Scope” reads in part “... (2) All nonsafety-related systems, structures, and components whose failure could prevent satisfactory accomplishment of any of the functions identified in paragraphs (a)(1)(i), (ii), or (iii) of this section. ...”

NUREG 2192 [Published: July 2017] “Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants” “Table 2.1-5 Typical ‘Passive’ Structure-Intended Functions” describes the “Intended Function” “Leakage Boundary (Spatial)” as “Nonsafety-related component that maintains mechanical and structural integrity to prevent spatial interactions that could cause failure of safety-related SSCs”

Section 3.3 “Aging Management of Auxiliary Systems” of NUREG 2192 reads in part:

This review plan section also includes structures and components in nonsafety-related systems that are not connected to safety-related systems, structures, and components (SSCs) but have a spatial relationship such that their failure could adversely impact the performance of a safety-related SSC intended function. Examples of such nonsafety-related systems may be plant drains, liquid waste processing, potable/sanitary water, water treatment, process sampling, and cooling water systems.

Issue:

SLRA Section 2.3.3.11.1 “Auxiliary Building and Electrical Equipment Room Ventilation” (page 2.3-86) indicates that there are no Non-safety-related ventilation components that could affect safety-related functions (10 CFR 54.4(a)(2)) within the Electrical Equipment Room. However, SLRA Table 2.3.3.16-3 “Component Intended Functions for 10 CFR 54.4(a)(2) Components in the Auxiliary Building Subject to Aging Management Review” and Table 2.3.3-11 “Plant Ventilation Components Subject to Aging Management Review” indicates just the opposite for the “Component Types” within the Electrical Equipment Room having an “Intended Function” of “Leakage boundary (spatial).” These non-safety related (NSR) components are displayed as being subject to AMR on Sheet 3 of System 060 SLRA Drawing for Turkey Point Nuclear Units 3 & 4 [P&ID 5610-M-3060-SH3 “Auxiliary Building Ventilation Electrical Equipment Room” (Coordinate F-4 & F-5)].

As displayed on Sheet 3 of System 060 SLRA Drawing, NSR components of the Auxiliary Building Ventilation System (i.e., bolted connections; V78 cooler housing; heat exchanger tubes; piping; & valves) are located inside the electrical equipment room alongside the safety related components.

SLRA Table 2.3.3-11 and SLRA Table 3.3.2-11 “Auxiliary Building and Electrical Equipment Room Ventilation — Summary of Aging Management Evaluation” identify an “Intended Function” of “Leakage Boundary (Spatial)” for the following “Component Types”:

- Bolting
- Heat Exchanger (tubes)
- Piping
- Valves

The staff notes that the heat exchanger condensate drain lines from each of the three Air Handling Units V76, V77 and V78 are neither displayed nor represented as being subject to AMR on Sheet 3 of System 060 SLRA Drawing. It stands to reason that if the heat exchanger tubes of these Air Handling Units represent a leakage boundary (spatial) threat to nearby safety related, then too at least portions of, if not all, the condensate drain lines could represent a similar hazard.

Request:

The staff requests information about:

- a) Why SLRA Section 2.3.3.11.1 concludes that there are no NSR ventilation components that affect safety-related functions (10 CFR 54.4(a)(2)) within the Electrical Equipment Room when the staff's observations above indicate the opposite?
- b) Please identify where the SLRA addresses the AMR for the condensate drain lines for each of the Air Handling Units V76, V77 and V78. If not addressed elsewhere, provide a justification for not including internal "Environment" of "Condensation (int)" for the "Component Type" of "Piping" in the aging management program documented in SLRA Table 3.3.2-11 for the Auxiliary Building And Electrical Equipment Room Ventilation System.
- c) The staff notes that RAI 2.3.3.11.4-2 for Turbine Building Ventilation System documents a similar issue relating to condensate drains lines from cooler and air handling units. In that particular case, both the LRA drawing notes and the lack of identification of the drain lines as being subject to AMR within the Turbine Building Load Center and Switchgear Rooms documents an apparent case of non-conformance to the guidance of NUREG 2192, Section 3.3. Given that the staff's SLRA review has identified two instances of where it appears that this guidance has not been followed, please provide the staff with the details of how the Applicant applied this guidance holistically throughout the SLRA.

RAI 2.3.3.11.2-1

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. ...

Issue:

Sheet 3 of the SLRA Drawing for System 025 [P&ID 5610-M-3025] displays HVAC supply and return ducts to the roof top Air Handling Units (AHUs) of components South Unit E-16F [Coordinate B-3] and North Unit E-16E [Coordinate B-6]. This HVAC ductwork appears as being exposed to Outside Air as an external environment.

In contrast, SLRA Table 3.3.2-12 "Control Building Ventilation – Summary of Aging Management Evaluation" does not list "Air – Outdoor (ext)" as an environment.

SLRA Table 3.0-1 "Service Environments for Mechanical Aging Management Reviews" describes the "Environment" of "Air – outdoor" as "The outdoor environment consists of atmospheric air, salt-laden air, ambient temperature and humidity, and exposure to precipitation."

Request:

Please identify where the SLRA addresses the AMR for these supply and return ducts with an external environment of "Air – Outdoor (ext)." If not addressed elsewhere, provide a justification for not including the external environment of "Air – Outdoor (ext)" for this "Component Type" in the aging management program.

RAI 2.3.3.11.2-2

Regulatory Basis:

10 CFR 54.4(a) "Scope" reads in part "... (2) *All nonsafety-related systems, structures, and components whose failure could prevent satisfactory accomplishment of any of the functions identified in paragraphs (a)(1)(i), (ii), or (iii) of this section. ...*"

NUREG 2192 [Published: July 2017] "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants" "Table 2.1-5 Typical 'Passive' Structure-

Intended Functions” describes the “Intended Function” “Leakage Boundary (Spatial)” as *“Nonsafety-related component that maintains mechanical and structural integrity to prevent spatial interactions that could cause failure of safety-related SSCs”*

Issue:

Sheet 3 of the SLRA Drawing for System 025 [P&ID 5610-M-3025] displays as not subject to AMR the exhaust ducts from Battery Room 4B [FA 102] and Battery Room 3A [FA 103]. These exhaust ducts are routed through DC Equipment Room 4A [FA 108A] and DC Equipment Room 3B [FA 108B] to the Control Building Roof. Note 6 to this SLRA Drawing reads *“All components depicted on this drawing are within the Seismic/Q boundary, except for the components located on the Control Building roof.”*

The “Description” of SLRA Section 2.3.3.11.2 reads in part:

The dc equipment and inverter rooms are located east of the control room and the cable spreading room. This area comprises what is commonly called the control building annex. These rooms house the safety-related batteries, battery chargers, inverters, and dc load centers, in addition to other quality-related and non-safety related equipment.

The “System Intended Functions” of SLRA Section 2.3.3.11.2 reads in part:

Nonsafety-related components that could affect safety-related functions (10 CFR 54.4(a)(2)):

- (1) Maintain integrity of nonsafety-related components such that no interaction with safety-related components could prevent satisfactory accomplishment of a safety function.

Request:

The staff requests clarification of whether these particular sections of exhaust ductwork are subject to AMR. If not subject to AMR, please provide a justification for not including these exhaust ducts in the aging management program.

RAI 2.3.3.11.2-3

Regulatory Basis:

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. ...

Issue:

Sheet 1 of the SLRA Drawing for System 025 [P&ID 5610-M-3025] displays two diversely oriented (i.e., south and north) emergency air intakes [Coordinates H-1 & H-2] for the Control Room Emergency Ventilation System CREVS mode of system operation. Note 10 on this SLRA Drawing reads "A bird screen is attached to the outside of the pipe inlet."

It appears that these "bird screens" provide an important passive system function in maintaining the operability of the CREVS by keeping the air intakes free of flow restrictions (i.e., birds et cetera and foreign debris).

SLRA Section 2.3.3.11.2 does not speak to the issue of the "bird screen". The SLRA Drawing does not present enough information to draw a conclusion that the "bird screen" is subject to AMR. While SLRA Table 3.3.2-12 "Control Building Ventilation – Summary of Aging Management Evaluation" does list the component types of "Strainer body" and "Strainer element," the listed Table environments are not applicable to a "Bird Screen."

Request:

Please identify where the SLRA addresses the AMR for the two "Bird Screens" associated with the Control Room Emergency Ventilation System. If these "Bird Screens" are included within the scope of subsequent license renewal (WSSLR) and subject to AMR, please address how aging is managed. If it has been determined that the "Bird Screens" are WSSLR but not subject to AMR, provide a justification for not including these components in the aging management program.

RAI 2.3.3.11.3-1

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. ...

Issue:

Sheet 1 of the SLRA Drawing for System 108 [P&ID 5614-M-3108] displays as being subject to AMR, the following "Component Types" associated with Control Panel Rooms 4A & 4B and Switchgear Rooms 3D & 4D:

- "Damper Housings" (i.e. Backdraft)
- "Fan housing"
- "Intake Hoods" (i.e. Roof Top)
- "Louvers"

In contrast, neither SLRA Table 2.3.3-11 "Plant Ventilation Components Subject to Aging Management Review" nor SLRA Table 3.3.2-13 "Emergency Diesel Generator Building Ventilation – Summary of Aging Management Evaluation" list the "Component Type" of "Louvers" or "Intake Hoods." In addition, SLRA Table 3.3.2-13 neither list the "Component Type" of "Damper housings" or "Fan housings" nor identifies an external environment of "Air-outdoor" for the "Component Types" of "Intake Hood" and "Louver."

SLRA Table 3.0-1 "Service Environments for Mechanical Aging Management Reviews" describes the "Environment" of "Air – outdoor" as "The outdoor environment consists of atmospheric air, salt-laden air, ambient temperature and humidity, and exposure to precipitation."

The staff also notes that another “Component Type” conspicuous by its absence in SLRA Table 3.3.2-13 is “Flex Connections” since these are commonly found in HVAC systems.

Request:

Please identify where the SLRA addresses the AMR for these “Component Types” and “Environment” associated with the Emergency Diesel Generator Building Ventilation System. If not addressed elsewhere, provide a justification for not including these “Component Types” and “Environment” in the aging management program.

RAI 2.3.3.11.3-2

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. ...

Issue:

The subtitle “Boundary” of SLRA Section 2.3.3.11.3 “Emergency Diesel Generator Building Ventilation” reads in part “*The subsequent license renewal boundaries for the 4A and 4B EDG rooms are at the inlet and exhaust of louvers L2A and L2B*”

Sheet 1 of the SLRA Drawing for System 108 [P&ID 5614-M-3108] displays exhaust louvers rated at “*211926 CFM Diesel Running*” for both the Diesel Generator Room 4A and the Diesel Generator Room 4B. The exhaust louver “*L2A*” for Room 4A (Coordinate E-5) and the exhaust louver “*L2B*” for Room 4B (Coordinate E-8) is identified as within the scope of subsequent license renewal (WSSLR) and subject to AMR.

The building intake louvers [openings? empty P&ID rectangle – component type unknown & unnumbered] are also rated at “*211926 CFM Diesel Running*” are located within the Air Receiver Room – Room 4A (Coordinate E-3) and the Air Receiver Room – Room 4B (Coordinate E-6). In contrast, these intake openings for Room 4A and Room 4B are neither identified as WSSLR nor subject to AMR on the SLRA Drawing.

SLRA Table 3.0-1 “Service Environments for Mechanical Aging Management Reviews” describes the “*Environment*” of “*Air – outdoor*” as “*The outdoor environment consists of atmospheric air, salt-laden air, ambient temperature and humidity, and exposure to precipitation.*”

The staff notes that these “Louvers” [room openings] appear to be exposed to an external environment of “*Outside Air*.” The staff also notes that exhaust “Louvers” “*L2A*” and “*L2B*” have attached “Screens” per the “Remarks” listed in the Table entitled “*Louvers*” as displayed on the SLRA Drawing.

In contrast, neither SLRA Table 2.3.3-11 “Plant Ventilation Components Subject to Aging Management Review” nor SLRA Table 3.3.2-13 “Emergency Diesel Generator Building Ventilation – Summary of Aging Management Evaluation” list the “Component Type” of “*Louvers*” or “*Screens*” associated with the external “*Environment*” of “*Air – outdoor*.”

Request:

Please identify where the SLRA addresses the AMR for these Unit 4 EDG Building Ventilation System supply [room openings] and return louvers with screens associated with an external environment of “*Air – Outdoor (ext)*.” If not addressed elsewhere, provide a justification for not including this external “*Environment*” for the “*Component Type*” of “*Louver*” with “*Screen*” in the aging management program.

RAI 2.3.3.11.3-3

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. ...

Issue:

SLRA Section 2.3.3.11.3 "Emergency Diesel Generator Building Ventilation" reads in part:

Unit 3 EDG building ventilation system is a rather simple system consisting of wall-mounted, axial flow exhaust fans and short runs of discharge ductwork through the Unit 3 EDG radiator area. There is one fan for each EDG, and the fans operate to maintain cooling in the rooms when the EDGs are running to ensure room temperature is less than that specified for the EDG horsepower

rating. There is no system description for the Unit 3 EDG building ventilation system in the Turkey Point UFSAR.

In addition SLRA Section 2.3.3.11.3 indicates that there is no SLRA P&ID Drawing that reflects the SLR boundaries for the Unit 3 EDG building ventilation system.

Given the paucity of information presented in the SLRA and UFSAR pertaining to the Unit 3 EDG Building Ventilation System, the staff notes that SLRA Table 3.3.2-13 "Emergency Diesel Generator Building Ventilation – Summary of Aging Management Evaluation" does not list the "Component Type" of "Fan housing."

Other Unit 3 EDG Building Ventilation System "Component Types" and "Environment" conspicuous by their absence from SLRA Table 3.3.2-13 include:

- "Flex Connections";
- "Louvers" (i.e. EDG Building intake and exhaust for the EDG rooms);
- "Screens"; and
- "Air – Outdoor" (i.e. associated with the Louvers)

since these would parallel those that exist in the Unit 4 EDG Rooms.

Request:

Please identify where the SLRA addresses the AMR for these "Component Types" and "Environment" associated with the Unit 3 Emergency Diesel Generator Building Ventilation System. If not addressed elsewhere, please provide a justification for not including these "Component Types" and "Environment" in the aging management program or amend the SSLRA accordingly.

RAI 2.3.3.11.3-4

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. ...

NUREG 2192 [Published: July 2017] "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants," Section 2.1.3.1.2 "Nonsafety-Related" reads in part:

The applicant's methodology is reviewed to ensure that nonsafety-related SSCs whose failure could prevent satisfactory accomplishment of any of the functions identified in 10 CFR 54.4(a)(1) are identified as being within the scope of SLR.

The scoping criterion under 10 CFR 54.4(a)(2), in general, is intended to identify those nonsafety-related SSCs that support safety-related functions. More specifically, this scoping criterion requires an applicant to identify all nonsafety-related SSCs whose failure could prevent satisfactory accomplishment of any of the functions identified under 10 CFR 54.4(a)(1). Section III.c(iii) of the SOC (60 FR 22467) clarifies the NRC's intent for this requirement in the following statement:

The inclusion of nonsafety-related systems, structures, and components whose failure could prevent other systems, structures, and components from accomplishing a safety function is intended to provide protection against safety function failure in cases where the safety-related structure or component is not itself impaired by age-related degradation but is vulnerable to failure from the failure of another structure or component that may be so impaired.

Issue:

As noted in RAI 2.3.3.11.3-3 (above) from review of SLRA Table 3.3.2-13 "Emergency Diesel Generator Building Ventilation – Summary of Aging Management Evaluation" it does not appear that the Unit 3 EDG Building Ventilation System components have been characterized WSSLR and then subsequently the passive components "screened in" as being subject to AMR.

SLRA 2.3.3.11.3 "Emergency Diesel Generator Building Ventilation" adds to this appearance. SLRA Section 2.3.3.11.3 reads in part:

"Description

Unit 3 EDG building ventilation system is a rather simple system consisting of wall-mounted, axial flow exhaust fans and short runs of discharge ductwork through the Unit 3 EDG radiator area. There is one fan for each EDG, and the fans operate to maintain cooling in the rooms when the EDGs are running to ensure room temperature is less than that specified for the EDG horsepower rating.

"System Intended Functions

Safety-related functions (10 CFR 54.4(a)(1)):

Unit 3

(1) None.

Unit 4

(1) Provide a temperature controlled environment for the 3D and 4D 4160V switchgear and the Unit 4 EDG control panels during emergency operations to ensure room temperatures are kept below the electrical equipment design temperature of 104°F."

Nonsafety-related components that could affect safety-related functions (10 CFR 54.4(a)(2)):

Unit 3 only:

(1) Maintain integrity of nonsafety-related components such that no interaction with safety-related components could prevent satisfactory accomplishment of a safety function.

The staff notes that based on the "Description" it is not definitive whether the Unit 3 EDG horsepower output would be significantly limited by high EDG room temperatures. Therefore, it appears that the Unit 3 EDG Building Ventilation System (e.g., exhaust fan, discharge ductwork etc.) could be WSSLR and subject to AMR because it satisfies either the criterion of 10 CFR 54.4(a) "Scope" (1) or the scoping criterion under 10 CFR 54.4(a)(2) [i.e. NUREG 2192 Section 2.1.3.1.2].

Request:

The staff requests additional information about the Unit 3 "System Intended Functions" described above. If these SLRA Unit 3 "System Intended Functions" cannot be justified as is, staff requests that the Applicant revise the SLRA accordingly.

RAI 2.3.3.11.4-1

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. ...

Issue:

(a) Sheets 1 & 2 of the SLRA Drawings System 070 [P&ID 5613-M-3070 & P&ID 5614-M-3070] displays as being subject to AMR, the following "Component Types" associated with the "Turbine Building Ventilation Load Center & Switch Gear Rooms Chilled Water System":

- "Tubing" -- Instrument
- "Piping*" -- Internal environment: Condensation or Air -- indoor uncontrolled"
- Wye "Strainers" -- Int. Environment: Treated Water; Ext. Environment: Condensation
- "Strainer element" -- Environment: Treated Water

* Expansion Tank -- Vents and Overflow Lines

In contrast, neither SLRA Table 2.3.3-11 "Plant Ventilation Components Subject to Aging Management Review" nor SLRA Table 3.3.2-14 "Turbine Building Ventilation -- Summary of Aging Management Evaluation" accurately reflect these "Component Types" and the appropriate environment.

(b) The staff also notes that the Unit 3 and Unit 4 Train A & Train B Chiller Packages are shown as being subject to AMR. However, SLRA Section 2.3.3.11.4 "Turbine Building Ventilation" and its relevant SLRA Tables do not address the aging management of

these chiller packages. If the chiller packages are treated as complex assemblies, SLRA Section 2.3.3.11.4 should so state.

Request:

(a) Please identify where the SLRA addresses the AMR for these “Component Types” and “Environments” associated with the Turbine Building Ventilation System. If not addressed elsewhere, provide a justification for not including this component in the aging management program.

(b) Please add clarity to the SLRA to address the aging management of the Unit 3 and Unit 4 Train A & Train B Chiller Packages.

RAI 2.3.3.11.4-2

Regulatory Basis:

10 CFR 54.4(a) “Scope” reads in part “... (2) All nonsafety-related systems, structures, and components whose failure could prevent satisfactory accomplishment of any of the functions identified in paragraphs (a)(1)(i), (ii), or (iii) of this section. ...”

NUREG 2192 [Published: July 2017] “Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants” “Table 2.1-5 Typical ‘Passive’ Structure-Intended Functions” describes the “Intended Function” “Leakage Boundary (Spatial)” as “Nonsafety-related component that maintains mechanical and structural integrity to prevent spatial interactions that could cause failure of safety-related SSCs”

Section 3.3 “Aging Management of Auxiliary Systems” of NUREG 2192 reads in part:

This review plan section also includes structures and components in nonsafety-related systems that are not connected to safety-related systems, structures, and components (SSCs) but have a spatial relationship such that their failure could adversely impact the performance of a safety-related SSC intended function. Examples of such nonsafety-related systems may be plant drains, liquid waste processing, potable/sanitary water, water treatment, process sampling, and cooling water systems.

Issue:

SLRA Table 3.0-1 “Service Environments for Mechanical Aging Management Reviews” describes “Condensation” as “Air and condensation on surfaces of indoor systems with temperatures below dew point; condensation is considered untreated water due to potential for surface contamination.”

The staff notes that for the “Component Type” of “Piping,” SLRA Table 3.3.2-14 “Turbine Building Ventilation – Summary of Aging Management Evaluation” does not list an “Environment” of “Condensation (int).”

Sheet 1 of the SLRA Drawings System 070 [P&ID 5613-M-3070 & P&ID 5614-M-3070] displays [Coordinate G-4] as not being subject to AMR, the routing of "Air Handling Unit" condensate drain lines to the nearest floor drain or header. Note 6 on these SLRA drawings reads "Only Exposed Drain Piping From AHU's Over The SWGR To Drain Is Insulated."

The staff also notes that SLRA Section 2.3.4.4 "Steam and Power Conversion Systems in the Scope of 10 CFR 54.4(a)(2) for Spatial Interactions" neither addresses the subject condensate drain lines nor lists as "SLR Boundary Drawings" the subject SLRA Drawings for System 070.

From the information presented in the SLRA it is not clear how the SLRA satisfies the guidance of NUREG 2192, Section 3.3 with respect to preventing leakage from these AHU condensate drain lines from spatially interacting with the safety related equipment.

Request:

Please identify where the SLRA addresses the AMR for the condensate drain lines for each of the Unit 3 and Unit 4 air handling units associated with the Load Center and Switchgear Rooms within the Turbine Building. If not addressed elsewhere, provide a justification for not including internal "Environment" of "Condensation (int)" for the "Component Type" of "Piping" in the aging management program for the Turbine Building Ventilation System.