



September 13, 2021

L-2021-156
10 CFR 54.17

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
11545 Rockville Pike
One White Flint North
Rockville, MD 20852-2746

Point Beach Nuclear Plant Units 1 and 2
Dockets 50-266 and 50-301
Renewed License Nos. DPR-24 and DPR-27

**SUBSEQUENT LICENSE RENEWAL APPLICATION - AGING MANAGEMENT REQUESTS FOR
ADDITIONAL INFORMATION (RAI) SET 5 RESPONSES**

References:

1. NextEra Energy Point Beach, LLC (NEPB) Letter NRC 2020-0032 dated November 16, 2020, Application for Subsequent Renewed Facility Operating Licenses (ADAMS Package Accession No. ML20329A292)
2. U.S. Nuclear Regulatory Commission (NRC) Letter dated January 15, 2021, Point Beach Nuclear Plant, Units 1 and 2 - Determination of Acceptability and Sufficiency for Docketing, Proposed Review Schedule, and Notice of Opportunity to Request a Hearing Regarding the NextEra Energy Point Beach, LLC Application for Subsequent License Renewal (EPID No. L-2020-SLR-0002) (ADAMS Accession No. ML21006A417)
3. NRC Letter dated January 15, 2021, Point Beach Nuclear Plant, Units 1 and 2 - Aging Management Audit Plan Regarding the Subsequent License Renewal Application Review (ADAMS Accession No. ML21007A260)
4. US Nuclear Regulatory Commission Meeting with NextEra Energy Concerning the Point Beach Subsequent License Renewal Application Review – June 3, 2021 Public Meeting (ADAMS Accession No. ML21148A116)
5. NRC Email and Attachment dated August 12, 2021, Point Beach SLRA Safety RAIs Set 5 Final (ADAMS Accession Nos. ML21242A204, ML21242A203)
6. NRC Public Meeting Announcement, Meeting with NextEra Energy Point Beach, LLC (NextEra) to Discuss Subsequent License Renewal Application Proposed Aging Management Programs (ADAMS Accession No. ML21225A562)

NEPB, owner and licensee for Point Beach Nuclear Plant (PBN) Units 1 and 2, has submitted a subsequent license renewal application (SLRA) for the Facility Operating Licenses for PBN Units 1 and 2 (Reference 1). On January 15, 2021, the NRC determined that NEPB's SLRA was acceptable and sufficient for docketing (Reference 2), and on January 15, 2021 issued the regulatory audit plan for the aging management portion of the SLRA review (Reference 3). Based on the information exchanged and discussions held during the public meeting held on June 3, 2021 (Reference 4), the NRC issued its Set 5 RAIs to NEPB (Reference 5). Subsequent discussions were held with NRC staff and NEPB on September 2, 2021 (Reference 6) to further

NextEra Energy Point Beach, LLC

6610 Nuclear Road, Two Rivers, WI 54241

clarify certain Set 5 RAIs. The attachments to this letter provide responses to those initial and clarified information requests.

For ease of reference, the index of attached information is provided on page 3 of this letter. Attachments may include associated revisions to the SLRA (Enclosure 3 Attachment 1 of Reference 1) denoted by ~~striketrough~~ (deletion) and/or **bold red underline** (insertion) text. Any previous SLRA revisions are denoted by **bold black** text, and SLRA table revisions are included as excerpts from each affected table.

Should you have any questions regarding this submittal, please contact me at (561) 304-6256 or William.Maher@fpl.com.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 13th day of September 2021.

Sincerely,



William D. Maher
Licensing Director - Nuclear Licensing Projects

Cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
Public Service Commission Wisconsin

Attachments Index		
Attachment No.	RAI No.	Subject
1	B.2.3.15-1	Fire Retardant Coatings
2	B.2.3.15-2	Fire Barrier Intended Function Management

1. SLRA Section B.2.3.15, "Fire Protection"

RAI B.2.3.15-1

Regulatory Basis:

Section 54.21(a)(3) of Title 10 of the Code of Federal Regulations (10 CFR) 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. One of the findings that the U.S. Nuclear Regulatory Commission (NRC) staff must make to issue a renewed license (10 CFR 54.29(a)) is that actions have been identified and have been or will be taken with respect to managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis. In order to complete its review and enable it to make a finding under 10 CFR 54.29(a), the staff requires additional information in regard to the matters described below.

Background:

SLR-ISG-2021-02-Mechanical, "Updated Aging Management Criteria for Mechanical Portions of Subsequent License Renewal Guidance" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20181A434), added Aging Management Review (AMR) Item VII.G.A-807 to Table VII.G in NUREG-2191, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report," and Table 3.3-1 in NUREG-2192, "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants." The aging effects for silicates used as fireproofing/fire barriers exposed to air are loss of material, change in material properties, cracking/delamination, and separation. These aging effects are consistent with Section 6, "Fire Barriers," of EPRI 3002013084, "Long-Term Operations: Subsequent License Renewal Aging Effects for Structures and Structural Components (Structural Tools)," dated December 2018.

During the audit of the Point Beach Nuclear Plant (PBN) Fire Protection program, the NRC staff reviewed FPLCORP00036-REPT-052, "Point Beach Units 1 and 2 Subsequent License Renewal Aging Management Program Basis Document – Fire Protection." Section 3.1, "Program Overview and Background," of FPLCORP00036-REPT-052 cites Flamemastic as a fire-resistant material that serves a fire barrier function. During the audit, NextEra Energy Point Beach, LLC (NextEra) stated that Flamemastic is present at PBN.

Subsequent License Renewal Application (SLRA) Supplement 1, dated April 21, 2021 (ADAMS Accession No. ML21111A155), revised SLRA Section 3.5.2.1.14, "Fire Barrier Commodity," and SLRA Table 3.5.2-14, "Fire Barrier Commodity Group – Summary of Aging Management Evaluation," by adding "fire retardant coatings" as a fire barrier commodity material used as fire barrier penetration seals and fire stops and wraps.

Specifically, Table 3.5.2-14 cites AMR item VII.G.A-807, 3.3-1-269 for managing the aging affects for "fire retardant coatings."

Issue:

The NRC staff is unclear whether the addition of "fire retardant coatings" refers to Flamemastic fire barrier penetration seals and fire stops and wraps. In addition, if the addition refers to Flamemastic, the staff is unclear on whether there are other "fire retardant coatings," other than Flamemastic present at PBN.

Request:

1. Please discuss whether the addition of "fire retardant coatings" to SLRA Section 3.5.2.1.14 and SLRA Table 3.5.2-14 includes Flamemastic. In addition, if the addition refers to Flamemastic, discuss whether there are "fire retardant coatings" other than Flamemastic present at PBN.

NEPB Response:

Where added to SLRA Section 3.5.2.1.14 and SLRA Table 3.5.2-14, the phrase "fire retardant coatings" includes Flamemastic. Flamemastic is the only fire retardant coating material used at PBN.

- Flamemastic was used exclusively where necessary to provide the flame-retardant coating necessary to meet the requirements of 10 CFR 50.48(c)(2)(v) for existing cables. For existing cables, 10 CFR 50.48(c)(2)(v) states, in part, that "[i]n lieu of installing cables meeting flame propagation tests as required by Section 3.3.5.3 [of NFPA 805-2001], a flame-retardant coating may be applied to the electric cables, or an automatic fixed fire suppression system may be installed to provide an equivalent level of protection."
- Flamemastic was specified in seal designs for cables penetrating certain fire barriers; thus its inclusion in SLRA Section 3.5.2.1.14 and SLRA Table 3.5.2-14 for fire barrier penetration seals, fire stops, and fire wraps.

References:

None.

Associated SLRA Revisions:

None.

Associated Enclosures:

None.

RAI B.2.3.15-2 (Intended Function)

Background:

SLRA Table 3.5.2-1, "Containment Building Structure and Internal Structural Components – Summary of Aging Management Evaluation," cites a fire barrier intended function for the following components:

- Steel, copper alloy, and elastomer air locks, equipment hatches and accessories
- Reinforced concrete walls, buttresses, dome, and ring girder (accessible and inaccessible); and internal columns, beams, slabs, and walls (accessible and inaccessible)
- Stainless steel fuel transfer tube (including penetration sleeves, expansion joints, and blind flange)
- Stainless steel liners (refueling cavity) and covers (sand box, Unit 1 sump A strainer)
- Dissimilar metal welds and stainless steel penetration assemblies (electrical)

However, the Fire Protection program is not credited to manage the aging effects for any of these components. SLRA Supplement 1 revised SLRA Table 3.5.2-1 by adding plant-specific Note 11 that states, "Component also provides a fire barrier function as evaluated in the Fire Protection Program Design Document that is physically equivalent to the structural functions managed under the associated Containment structural programs." During the audit of the PBN Fire Protection program, NextEra stated that the intent was that the intended functions, including the fire barrier intended function, will be managed by the programs cited (i.e., 10 CFR Part 50, Appendix J; ASME Section XI, Subsection IWE; Boric Acid Corrosion; ASME Section XI, Subsection IWL; Structures Monitoring; One-Time Inspection; and Water Chemistry).

SLRA Supplement 1 revised SLRA Table 2.4-1, "Containment Structure and Internal Structural Components Subject to Aging Management Review," to replace component type "liner plate (containment)" with component type "liner plate." The intended functions for component type "liner plate" in SLRA Table 2.4-1 are direct flow, fire barrier, pressure boundary, and structural support. However, SLRA Table 3.5.2-1 states that the intended functions for component types "liner plate," "liner plate (accessible)," and "liner plate (inaccessible)" are pressure boundary and structural support.

SLRA Table 3.5.2-2, "Circulating Water Pump House Structure – Summary of Aging Management Evaluation," cites a fire barrier intended function for accessible concrete (reinforced) external walls and roofs exposed to air – indoor uncontrolled, air – outdoor, and water-flowing. Only the Inspection of Water-Control Structures Associated with Nuclear Power Plants program is credited to manage the aging effects for these

components. The specific AMR items are 3.5-1-059, 060, 061, and 096. No changes related to these components were made to SLRA Table 3.5.2-2 in SLRA Supplement 1.

SLRA Table 3.5.2-6, "Fuel Oil Pumphouse Structure – Summary of Aging Management Evaluation," cites a fire barrier intended function for concrete block masonry (block) walls exposed to air - outdoor. Specifically, AMR item 3.5-1-070 is cited to address cracking by the Masonry Walls program and AMR item 3.5-1-071 was cited to manage cracking and loss of material by the Masonry Walls program. SLRA Supplement 1 revised SLRA Table 3.5.2-6 by replacing AMR item 3.5-1-071 with AMR item 3.3-1-179; therefore, cracking and loss of material is managed by the Fire Protection and Masonry Walls programs. In addition, SLRA Supplement 1 revised SLRA Table 3.5.2-6 by adding plant-specific Note 4 to AMR items 3.5-1-070 and 3.3-1-179. Plant-specific Note 4 states, "Fire Protection AMP in conjunction with the Structures Monitoring AMP is focused on fire barriers internal to the structure recognizing that exterior barriers have additional functions that are managed by the Structures Monitoring AMP or a related AMP."

SLRA Table 3.5.2-11, "Yard Structures – Summary of Aging Management Evaluation," cites AMR item 3.3-1-179 to address cracking and loss of material in concrete block manholes exposed to air – outdoor by the Fire Protection and the Masonry Walls programs. SLRA Supplement 1 revised SLRA Table 3.5.2-11 by adding plant-specific Note 6 to AMR item 3.3-1-179. Plant-specific Note 6 states, "Fire Protection AMP in conjunction with the Structures Monitoring AMP is focused on certain fire barriers in the yard recognizing that other barriers in the yard have additional functions that are managed by the Structures Monitoring AMP or related AMP." SLRA Table 3.5.2-11 credits the Structures Monitoring program for managing loss of form and loss of material of the earth berm that provides a fire barrier for the fuel oil storage tanks, and for managing cracking and distortion of the concrete block manholes with a fire barrier intended function. In addition, SLRA Table 3.5.2-11 credits the Boric Acid Corrosion program for managing loss of material of the steel miscellaneous structural components with a fire barrier intended function.

SLRA Table 3.5.2-3, "Control Building Structure – Summary of Aging Management Evaluation," and SLRA Table 3.5.2-8, "Primary Auxiliary Building Structure – Summary of Aging Management Evaluation," credit the Fire Protection program for managing loss of material of the steel fire rated doors that include, in addition to the fire barrier intended function, a flood barrier intended function. In addition, SLRA Table 3.5.2-8 credits the Fire Protection program for managing hardening, loss of strength, and shrinkage of the elastomer penetration seals that have a fire barrier and a flood barrier intended function. SLRA Supplement 1 revised Table 3.5.2-8 by adding plant-specific Note 5 to AMR items 3.3-1-057 and 3.3-1-059, which states, "Management of the fire barrier function also manages the component as a flood barrier."

Issue:

It is unclear to the NRC staff whether the programs credited to manage the applicable aging effects are capable of ensuring that the fire barrier intended function is maintained during the subsequent period of extended operation. Specifically, it is unclear whether the inspections and acceptance criteria for the credited programs are equivalent to those in the Fire Protection program; the credited programs perform inspections on the same frequency as required by the Fire Protection program; and the credited programs' procedures have been updated, if necessary, to ensure that the fire barrier intended function is maintained during the subsequent period of extended operation.

Request:

1. Describe how the 10 CFR Part 50, Appendix J; ASME Section XI, Subsection IWE; Boric Acid Corrosion; ASME Section XI, Subsection IWL; Structures Monitoring; One-Time Inspection; and Water Chemistry programs will manage the fire barrier function (i.e., a description of any enhancements to the programs that may be warranted to ensure that they are capable of managing the fire barrier function). Alternatively, add AMR items to SLRA Table 3.5.2-1 for managing applicable aging effects by the Fire Protection program.
2. Discuss the reason for the liner plate intended function discrepancy between SLRA Tables 2.4-1 and 3.5.2-1.
3. Describe how the Inspection of Water-Control Structures Associated with Nuclear Power Plants program will manage the fire barrier function (i.e., a description of any enhancements to the program that may be warranted to ensure that it is capable of managing the fire barrier function). Alternatively, add AMR items to SLRA Table 3.5.2-2 for managing applicable aging effects by the Fire Protection program.
4. Discuss why plant-specific Note 4 that does not address the Masonry Walls program was added to AMR items 3.5-1-070 and 3.3-1-179 in SLRA Table 3.5.2-6. In addition, describe how the Masonry Walls program will manage the fire barrier function of the concrete block masonry (block) walls (i.e., a description of any enhancements to the program that may be warranted to ensure that it is capable of managing the fire barrier function). Alternatively, add AMR items to SLRA Table 3.5.2-6 for managing applicable aging effects by the Fire Protection program.
5. Discuss why plant-specific Note 6 that does not address the Masonry Walls program was added to AMR item 3.3-1-179 in SLRA Table 3.5.2-11.
6. Describe how the Structures Monitoring program will manage the fire barrier function of the earth berm that provides a fire barrier for the fuel oil storage tanks and the concrete block manholes. In addition, describe how the Boric Acid Corrosion program will manage the fire barrier function of the steel miscellaneous

structural components. The descriptions should include a discussion of any enhancements to the programs that may be warranted to ensure that they are capable of managing the fire barrier function. Alternatively, add AMR items to SLRA Table 3.5.2-11 for managing applicable aging effects by the Fire Protection program.

7. Describe how the Fire Protection program will manage the flood barrier function of the steel fire rated doors and elastomer penetration seals in the Control Building Structure (i.e., a description of any enhancements to the program that may be warranted to ensure that it is capable of managing the flood barrier function). Alternatively, add AMR items to SLRA Tables 3.5.2-3 and 3.5.2-8 for managing applicable aging effects by the Fire Protection program.

NEPB Response:

The purpose of aging management programs is to ensure that the effects of aging will be adequately managed for each structure and component (SC) identified, so that their intended function(s) will be maintained consistent with the CLB for the SPEO. As such, an aging management program does not manage the intended function, but instead manages the condition of the SC in order to maintain the SC's ability to continue to perform its intended function.

As described in NUREG-2191, Section XI.M26, the Fire Protection AMP is complemented by the Structures Monitoring AMP (Section XI.S6). Furthermore, the acceptance criteria described for XI.M26 that are applicable to structural components include (a) no visual indications (outside of those allowed by approved penetration seal configurations) of cracking, separation of seals from walls and components, separation of layers of material, or ruptures or punctures of seals; (b) no significant indications of cracking and loss of material of fire barrier walls or ceilings. As described in SLRA Section B.2.3.15, visual inspections of fire-rated structures (fire barrier walls, ceilings, and floors) are conducted at a frequency of at least once every 5 years. The Structures Monitoring AMP, addressed in SLRA Section B.2.3.34, includes visual inspection for evidence of deterioration or degradation at a frequency not to exceed 5 years. Also as described in SLRA Section B.2.3.15, visual inspections of at least 10-percent of each type of sealed penetration are conducted every 18-months for indications of cracking, separation of seals from structures and components, indications of increased hardness, loss of strength, or ruptures or punctures of seals.

As described in SLRA Section B.2.3.15, inspection results are acceptable if there are no signs of degradation that could result in the loss of the fire protection capability due to loss of material or elastomer degradation. Acceptance criteria described in SLRA Section B.2.3.34 for the Structures Monitoring AMP are quantitative and based on the American Concrete Institute (ACI) Standard 349.3R-02, Evaluation of Existing Nuclear Safety-Related Concrete Structures. The quantitative acceptance criteria are organized

in a three-tiered hierarchy where inspection results meeting the first-tier criteria are considered acceptable without requiring any further evaluation. The first-tier evaluation criteria represent general quantitative limits of observed surface conditions developed for the wide range of nuclear safety-related concrete structures. Any condition that does not meet first-tier criteria requires further evaluation, which may include further enhanced inspections, testing, and analysis, to determine whether the condition is acceptable (the component is able to continue to perform its intended functions) or if additional activities are necessary (e.g., repair, monitoring at increased frequency, or replacement).

Any condition that exceeds the acceptance criteria is entered into the Corrective Action Program. Each documented area of degradation that is determined to be a potential cause of failure or changing condition that may lead to an increasing degradation rate is documented in an action request. The implementing procedure for the Structures Monitoring AMP refers to a Fire Protection procedure for further assessment of the component's condition. If a fire barrier is determined to be non-functional, the Fire Protection Engineer is notified.

As clarified below, the inspection and acceptance criteria for structural components (that also have a fire barrier intended function) by other programs are equivalent to or better than those in the Fire Protection AMP to ensure that structural components can perform their intended functions through the SPEO.

1. As described in SLRA Table 3.5.2-1, as updated by the SLRA Aging Management Supplement 1 [Ref. 1] and Responses to various Set 2 RAIs [Ref. 2], the condition of structural components associated with Containment integrity (e.g., walls, dome and penetration assemblies) are managed by the ASME Code and other programs consistent with the programs identified for these components in NUREG-2191. In addition, internal slabs inside Containment describe the separate Containment fire areas/zones. Maintaining the condition of structural components with a pressure boundary function for ensuring Containment integrity also ensures the fire barrier function is accomplished. Consistent with NUREG-2191, these AMPs include:
 - a. 10 CFR Part 50, Appendix J: The 10 CFR Part 50, Appendix J AMP includes testing and inspection activities with the purpose of providing assurance that (a) leakage through the containment structure and any electrical, mechanical, equipment hatch, or personnel air lock penetrations does not exceed allowable leakage rates specified in the Technical Specifications; and (b) integrity of the containment structure is maintained during its service life. The leakage rate testing will identify structural integrity issues that could potentially compromise the fire barrier function. Additionally, 10 CFR Part 50, Appendix J requires a general visual

inspection of the accessible interior and exterior surfaces of the containment structures and components to be performed prior to any Type A (Integrated Leak Rate) test and at periodic intervals between tests based on the performance of the containment system. The PBN 10 CFR Part 50, Appendix J AMP meets this requirement with its visual inspection procedures. Additionally, the PBN 10 CFR Part 50, Appendix J AMP inspections may be performed in conjunction with the PBN ASME Code Section XI, Subsection IWE AMP to address evidence of structural deterioration. The Appendix J program tests a portion of all containment penetrations every operating cycle and tests all applicable penetrations within a 5-year period.

- b. ASME Section XI, Subsection IWE: The ASME Section XI, Subsection IWE AMP consists of inservice inspections, including visual examination (general visual, VT-3, VT-1), limited volumetric examination (ultrasonic thickness measurement), and surface examination (e.g., liquid penetrant), in order to manage aging of steel containments, steel liners of concrete containments, and other containment components. These inspections and examinations will identify any degradation that could potentially threaten containment integrity. The acceptance criteria that are applicable to the ASME Section XI, Subsection IWE AMP are designed to maintain the structural integrity of containment and its ability to withstand accident conditions. This includes any degradation that could potentially threaten the ability of containment to function as a fire barrier.
- c. ASME Section XI, Subsection IWL: The ASME Section XI, Subsection IWL AMP consists of examinations of reinforced and prestressed concrete containment, the scope of which includes reinforced concrete and unbonded post-tensioning systems. The frequency and scope of examinations provide reasonable assurance that aging effects would be detected before they would compromise the design-basis requirements. Any degradation that could potentially threaten the structure's ability to provide a fire barrier function would be identified within the acceptable limits of the IWL AMP.
- d. Structures Monitoring: Structures within the scope of the Structures Monitoring AMP are routinely inspected at least once every 5 years for evidence of degradation that may threaten the structure's structural integrity. The Structures Monitoring implementing procedure is also an implementing procedure for the Fire Protection AMP and includes any enhancements necessary to fulfill the NUREG-2191 Section XI.M26 Fire Protection AMP guidance to effectively manage the identified aging effects and provide reasonable assurance that the fire barrier intended function is

maintained consistent with the CLB for the SPEO. The only enhancement to the procedure in order to meet XI.M26 guidance is to add spalling and scaling to the degradation effects for which masonry block walls are inspected, which does not impact any components inside containment.

- e. Boric Acid Corrosion: The Boric Acid Corrosion AMP is credited for managing aging of one component type in SLRA Table 3.5.2-1 that has a fire barrier intended function: Air locks, equipment hatches and accessories. Aging of this component is also managed by the 10 CFR Part 50, Appendix J AMP and the ASME Section XI, Subsection IWE AMP. All of the AMPs together manage their various aspects of aging effects for the components. If, in particular, corrosion was noted during an inspection performed by the Boric Acid Corrosion AMP, any potential impacts to fire barrier performance could be evaluated as necessary. However, the other aging management programs that manage aging of this component (10 CFR Part 50, Appendix J and ASME Section XI, Subsection IWE), in total, use inspection techniques, acceptance criteria, and frequencies that align with fire protection requirements and are adequate to identify the presence of any degradation that could threaten the component's ability to serve its fire barrier function. Thus the components are adequately managed by the combination of the AMPs, and no enhancements are deemed necessary.
 - f. Water Chemistry and One-Time Inspection: The Water Chemistry and One-Time Inspection AMPs are credited in SLRA Table 3.5.2-1 for managing aging of the fuel transfer tube (including penetration sleeves, expansion joints, and blind flange). The Water Chemistry AMP is a mitigative program that doesn't include visual inspection activities. The One-Time Inspection AMP includes one-time inspections intended to verify the effectiveness of other aging management programs. These AMPs manage the condition of the internal surface of the fuel transfer tube. These programs are effective at mitigating degradation that could threaten the component's ability to perform a fire barrier function. This component is also managed on the external surfaces by the 10 CFR Part 50, Appendix J AMP and the ASME Section XI, Subsection IWE AMP, both of which are discussed above.
2. As described in SLRA Table 3.5.2-1, the intended functions listed for the liner plate are: Pressure boundary and Structural support. SLRA Table 2.4-1 is updated as described below to remove the Direct flow and Fire barrier functions, consistent with Table 3.5.2-1. The "liner plate and keyway channels" component performs the function of directing flow. The underlying concrete provides the fire barrier.

3. The Water-Control Structures Associated with Nuclear Power Plants AMP is implemented by the same procedure that implements the Structures Monitoring AMP. The structures that are in the scope of the Water-Control Structures Associated with Nuclear Power Plants AMP are visually inspected during routine inspections at least once every 5 years. The implementing procedure for the Water-Control Structures Associated with Nuclear Power Plants AMP is also an implementing procedure for the Fire Protection AMP and includes any enhancements necessary to fulfill the NUREG-2191 Section XI.M26 Fire Protection AMP guidance to effectively manage the identified aging effects and provide reasonable assurance that the fire barrier intended function is maintained consistent with the CLB for the SPEO. The only enhancement to the procedure in order to meet XI.M26 guidance, is to add spalling and scaling to the degradation effects for which masonry block walls are inspected.
4. Plant-specific note 4 was added to the Masonry (block) walls line items in Table 3.5.2-6 to clarify that the Fire Protection AMP is credited in conjunction with another AMP to maintain the fire barrier function of the block walls. As it related to the masonry block walls specifically, the Fire Protection AMP is credited in conjunction with the Masonry Walls AMP, which is in turn implemented by the same implementing procedure as the Structures Monitoring AMP. Note 4 is updated as described below to provide clarification that the Fire Protection AMP is credited in conjunction with the Structures Monitoring AMP or the Masonry Walls AMP.

Masonry block walls are visually inspected during routine examinations that are performed at least once every 5 years. The implementing procedure for the Masonry Walls AMP is also an implementing procedure for the Fire Protection AMP and includes any enhancements necessary to fulfill the NUREG-2191 Section XI.M26 Fire Protection AMP guidance to effectively manage the identified aging effects and provide reasonable assurance that the fire barrier intended function is maintained consistent with the CLB for the SPEO. The only enhancement to the procedure in order to meet XI.M26 guidance, is to add spalling and scaling to the degradation effects for which masonry block walls are inspected.

5. Plant-specific note 6 was added to the Manhole line item in Table 3.5.2-11 to clarify that the Fire Protection AMP is credited in conjunction with another AMP to maintain the fire barrier function of the structure. As it relates to the manhole structure specifically, the Fire Protection AMP is credited in conjunction with the Masonry Walls AMP, which is in turn implemented by the same implementing procedure as the Structures Monitoring AMP. Note 6 is updated as described below to provide clarification that the Fire Protection AMP is credited in conjunction with the Masonry Walls AMP.

6. The earth berm that surrounds the fuel oil storage tanks serves as a fire barrier by containing any fuel oil that may spill out of the tanks, in the case where the spilled fuel oil may catch fire. It also provides a physical separation in the yard between the fuel oil tanks and other areas of the plant. When the berm's structural integrity is maintained to contain spilled oil, the fire barrier function is also maintained.

Consistent with the initial license renewal application [Ref. 3], aging of the earthen berm is managed by the Structures Monitoring AMP. This approach was accepted as documented in NUREG-1839 [Ref. 4]. The implementing procedure for the Structures Monitoring AMP is also an implementing procedure for the Fire Protection AMP and includes any enhancements necessary to fulfill the NUREG-2191 Section XI.M26 Fire Protection AMP guidance to effectively manage aging effects of fire barriers. The only enhancement to the procedure in order to meet XI.M26 guidance, is to add spalling and scaling to the degradation effects for which masonry block walls are inspected, which is not applicable to the earthen berm. An enhancement to this procedure was also included in SLRA Aging Management Supplement 1 [Ref. 1] to include acceptance criteria for the earthen berm.

The concrete block manholes located in the yard are exposed to air – outdoor on the internal surfaces, and to the soil environment on the external surfaces. The condition of the internal surfaces is managed by the Fire Protection and Masonry Walls AMPs, which will ensure that the fire barrier function of the concrete block manholes is maintained. The fire barrier intended function does not apply to the external environment of the manholes. Additionally, the manholes have “structural support” and “shelter, protection” functions. SLRA Tables 2.4-11 and 3.5.2-11 are updated as described below to reflect these changes. The following additional adjustments are made for consistency between SLRA Tables 2.4-11 and 3.5.2-11: (1) the intended function for the manhole covers is “Shelter, protection,” in accordance with SLRA Aging Management Supplement 1 (Attachment 22); and, (2) the component type for manhole covers is updated to “Manhole covers (insulated),” in accordance with SLRA Aging Management Supplement 1 [Ref. 1, Attachment 22].

The Boric Acid Corrosion AMP is credited for managing the condition of the miscellaneous structural components located in the Yard (SLRA Table 3.5.2-11). Aging of these components is also managed by the Structures Monitoring AMP. Both AMPs together manage the various aspects of aging effects for the components. If, in particular, corrosion was noted during an inspection performed by the Boric Acid Corrosion AMP, any potential impacts to fire barrier performance could be evaluated as necessary. However, the Structures Monitoring AMP uses inspection techniques, acceptance criteria, and

frequencies that align with fire protection requirements and are adequate to identify the presence of any degradation that could threaten the component's ability to serve its fire barrier function. Thus, the components are adequately managed by the combination of the AMPs and no enhancements are deemed necessary.

7. The condition of steel fire rated doors and penetration seals is monitored via visual inspection for any sign of aging effects that could potentially impact their ability to perform their intended function(s). If unacceptable degradation is observed, the condition is evaluated via the corrective action program. Maintaining the components' structural integrity will maintain the components' ability to perform their intended function(s) (in this case, provide protection against flooding in addition to serving as a fire barrier). Inspections of fire-rated doors are performed by the same procedure that also inspects flood and HELB doors. The inspections: (1) verify that there are no indications of corrosion or wear and that the doors function properly; (2) verify that seals and gaskets on flood doors are not degraded due to cracking or a change in material properties; and (3) verify that the door sweep clearance gap on flood doors is within acceptable limits. Fire seals and conduit wrapping are inspected for cracking, separation of seals, rupture, or puncture. Any visual indication of these aging effects is considered unacceptable. Maintaining the condition of the penetration seals maintains their ability to perform all of their intended functions, including the flood barrier function.

References:

1. NextEra Energy Point Beach, LLC (NEPB) Letter to NRC L-2021-081 dated April 21, 2021, Subsequent License Renewal Application – Aging Management Supplement 1 (ADAMS Accession No. ML21111A155)
2. NextEra Energy Point Beach, LLC (NEPB) Letter to NRC L-2021-144 dated August 11, 2021, Subsequent License Renewal Application - Aging Management Requests for Additional Information (RAI) Set 2 Responses (ADAMS Accession No. ML21223A308)
3. Nuclear Management Company, LLC, License Renewal Application for PBNP Units 1 and 2, February 25, 2004
4. NRC, NUREG-1839, Safety Evaluation Report Related to the License Renewal of the Point Beach Nuclear Plant, Units 1 and 2, December 2005 (ADAMS Accession Nos. ML053420134 and ML053420137)

Associated SLRA Revisions:

SLRA Table 2.4-1 (page 2.4-5), as amended by Reference 1 and Reference 2 (Attachment 3), is revised as follows:

**Table 2.4-1
Containment Structure and Internal Structural Components Subject to Aging
Management Review**

Component Type	Intended Function(s)
Air lock, equipment hatches and accessories	Fire barrier Pressure boundary
Concrete Foundation / Basemat	Direct flow Pressure boundary Structural support
Concrete Walls, Buttresses, Dome and Ring Girder	Fire barrier Flood barrier Missile barrier Pressure boundary Shelter, protection Structural support
Concrete Internal Columns, Beams, Slabs and Walls	Fire barrier Flood barrier Missile barrier Shelter, protection Structural support
Concrete Tendon Gallery Walls	Shelter, protection
Construction truss	Structural support
H-Piles	Structural support
Fuel transfer tube (including penetration sleeves, expansion joints and blind flange)	Fire barrier Pressure boundary Radiation shielding Structural support
Liners (reactor cavity)	Radiation shielding Structural support
Liner plate	Direct flow Fire barrier Pressure boundary Structural support
Liner plate and keyway channels	Direct flow Pressure boundary Structural support
Liner plate anchors and attachments	Pressure boundary Structural support
Liner plate moisture barrier (sealing compound)	Shelter, protection
Miscellaneous structural components ¹	Structural support
Penetration assemblies (elastomer)	Pressure boundary Structural support

SLRA Table 2.4-11 (page 2.4-24), as amended by Reference 1, is revised as follows:

Table 2.4-11
Yard Structures Subject to Aging Management Review

Component Type	Component Intended Function(s)
Berm	Fire barrier
Concrete foundations (tanks and components)	Structural support
Concrete duct banks, manholes, trenches	Shelter, protection Structural support
Manholes	Fire barriers <u>Shelter, protection</u> <u>Structural support</u>
Manhole covers (insulated)	Structural support <u>Shelter, protection</u>
Miscellaneous structural components	Fire Barrier Shelter, protection Structural Support
Structural bolting	Structural support

SLRA Table 3.5.2-6 (page and 3.5-115), as amended by Reference 1, is revised as follows:

Generic Notes

- A. Consistent with component, material, environment, aging effect and aging management program listed for NUREG-2191 line item. AMP is consistent with NUREG-2191 AMP description.

Plant Specific Notes

1. Rainfall tends to wash surfaces. However, times of significant precipitation or areas of water collection/flowing such as ground/wall interfaces are conservatively susceptible to leaching.
2. Groundwater is considered to be water-flowing.
3. Whereas the NUREG-2191/2192 item calls for a plant-specific AMP, PBN credits an existing AMP consistent with SLR-ISG-Structures-2020-XX, "Updated Aging Management Criteria for Structures Portions of Subsequent License Renewal Guidance".
4. Fire Protection AMP, in conjunction with the Structures Monitoring AMP or Masonry Walls AMP, is focused on fire barriers internal to the structure recognizing that exterior barriers have additional functions that are managed by the Structures Monitoring AMP or a related AMP Masonry Walls AMP.

SLRA Table 3.5.2-11 (pages 3.5-130 and 3.5-131), as amended by Reference 1, are revised as follows:

Table 3.5.2-11: Yard Structures – Summary of Aging Management Evaluation								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-2191 Item	Table 1 Item	Notes
Concrete Foundations (inaccessible)	Structural support	Concrete (reinforced)	Soil	Cracking Increase in porosity and permeability Loss of material	Structures Monitoring (B.2.3.34)	III.A3.TP-29	3.5-1, 067	A
Manholes	Fire barrier <u>Shelter, protection</u> <u>Structural support</u>	Concrete Block	Air – outdoor	Cracking Loss of material	Fire Protection (B.2.3.15) and Masonry Walls (B.2.3.33)	VII.G.A-626	3.3-1, 179	A, 6
Manholes	Fire barrier <u>Shelter, protection</u> <u>Structural support</u>	Concrete Block	Soil	Cracking Distortion	Structures Monitoring (B.2.3.34)	III.A3.TP-30	3.5-1, 044	C, 3
Manhole covers <u>(insulated)</u>	Shelter, protection	Polymer	Air – outdoor	Blistering, Cracking, Hardening, Loss of material, Loss of strength	Structures Monitoring (B.2.3.34)	VII.I.A-797a	3.3-1, 263	E, 7
Manhole covers <u>(insulated)</u>	Shelter, protection	Aluminum	Air – outdoor	Loss of material Cracking	Structures Monitoring (B.2.3.34)	III.B5.T-37b	3.5-1, 100	C

Point Beach Nuclear Plant Units 1 and 2
Dockets 50-266 and 50-301
NEPB Response to NRC RAI No. B.2.3.15-2
L-2021-156 Attachment 2 Page 15 of 17

Table 3.5.2-11: Yard Structures – Summary of Aging Management Evaluation								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-2191 Item	Table 1 Item	Notes
Manhole covers (insulated)	Shelter, protection	Galvanized steel	Air – outdoor	Loss of material	Structures Monitoring (B.2.3.34)	III.A3.TP-302	3.5-1, 077	A
Miscellaneous structural components	Fire barrier Shelter, protection Structural support	Steel	Air – outdoor	Loss of material	Structures Monitoring (B.2.3.34)	III.A3.TP-302	3.5-1, 077	A
Miscellaneous structural components	Structural support	Stainless steel	Air – outdoor	Loss of material Cracking	Structures Monitoring (B.2.3.34)	III.B5.T-37b	3.5-1, 100	A
Miscellaneous structural components	Structural support	Aluminum	Air – outdoor	Loss of material Cracking	Structures Monitoring (B.2.3.34)	III.B5.T-37b	3.5-1, 100	A
Miscellaneous structural components	Fire barrier Shelter, protection Structural support	Steel	Air with borated water leakage	Loss of material	Boric Acid Corrosion (B.2.3.4)	III.B1.1.TP-3	3.5-1, 089	A
Structural bolting	Structural support	Steel	Air – outdoor	Loss of preload	Structures Monitoring (B.2.3.34)	III.A3.TP-261	3.5-1, 088	A
Structural bolting	Structural support	Steel	Air – outdoor	Loss of material	Structures Monitoring (B.2.3.34)	III.A3.TP-248	3.5-1, 080	A

Table 3.5.2-11: Yard Structures – Summary of Aging Management Evaluation								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-2191 Item	Table 1 Item	Notes
Structural bolting	Structural support	Steel	Air – outdoor	Loss of material	Structures Monitoring (B.2.3.34)	III.A3.TP-274	3.5-1, 082	A

Generic Notes

- A. Consistent with component, material, environment, aging effect and aging management program listed for NUREG-2191 line item. AMP is consistent with NUREG-2191 AMP description.
- C. Component is different, but consistent with material, environment, aging effect and aging management program listed for NUREG-2191 line item. AMP is consistent with NUREG-2191 AMP description.
- E. Consistent with NUREG-2191 material, environment, and aging effect but a different aging management program is credited or NUREG-2191 identifies a plant-specific aging management program

Plant Specific Notes

1. Groundwater is considered to be water- flowing.
2. Rainfall tends to wash surfaces. However, times of significant precipitation or areas of water collection/flowing such as ground/wall interfaces are conservatively susceptible to leaching.
3. Consistent with the currently renewed licenses, concrete block manholes are underground and exposed to soil.
4. Berm surrounding the fuel oil storage tanks provides a fire barrier.
5. Whereas the NUREG-2191/2192 item calls for a plant-specific AMP, PBN credits an existing AMP consistent with SLR-ISG-Structures-2020-XX, "Updated Aging Management Criteria for Structures Portions of Subsequent License Renewal Guidance".
6. Fire Protection AMP, in conjunction with the Masonry Walls Structures Monitoring AMP is focused on certain fire barriers in the yard recognizing that other barriers in the yard have additional functions that are managed by the Masonry Walls Structures Monitoring AMP or related AMP.
7. Polystyrene (polymer) inserts in yard manhole covers that have ports allowing for inspection may be susceptible to degradation though exposure to heat or sunlight is limited and are inspected by the Structures Monitoring AMP.

Point Beach Nuclear Plant Units 1 and 2
Dockets 50-266 and 50-301
NEPB Response to NRC RAI No. B.2.3.15-2
L-2021-156 Attachment 2 Page 17 of 17

Associated Enclosures:

None