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

April 25, 2019

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
NextEra Energy Point Beach, LLC
Mail Stop: NT3/JW
15430 Endeavor Drive
Jupiter, FL 33478

SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS TO EXTEND CONTAINMENT LEAKAGE RATE TEST FREQUENCY (EPID L-2018-LLA-0097)

Dear Mr. Nazar:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 265 and 268 to Renewed Facility Operating License Nos. DPR-24 and DPR-27 for the Point Beach Nuclear Plant (PBNP), Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated March 30, 2018, as supplemented by letter dated November 16, 2018.

These amendments revise PBNP TS 5.5.15, "Containment Leakage Rate Testing Program," to allow extension of the 10-year frequency of the Type A Integrated Leak Rate Test to 15 years on a permanent basis and to allow the extension of the containment isolation valves leakage test interval (i.e., Type C tests) from its current 60 months frequency to 75 months.

In particular, the amendments make changes to PBNP TS 5.5.15, "Containment Leakage Rate Testing Program," by replacing the reference to Regulatory Guide 1.163, with a reference to Nuclear Energy Institute (NEI) Topical Report NEI 94-01 Revision 3-A and the conditions and limitations specified in NEI 94-01, Revision 2-A, as the Title 10 of the *Code of Federal Regulations* (10 CFR) 50, Appendix J, Option B, implementation documents, used by the licensee to implement the PBNP performance-based leakage testing program.

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Mahesh L. Chawla, Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

Enclosures:
1. Amendment No. 265 to DPR-24
2. Amendment No. 268 to DPR-27
3. Safety Evaluation

cc: ListServ

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NEXTERA ENERGY POINT BEACH, LLC

DOCKET NO. 50-266

POINT BEACH NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 265
License No. DPR-24

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by NextEra Energy Point Beach, LLC (the licensee), dated March 30, 2018, as supplemented by letter dated November 16, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 4.B of the Renewed Facility Operating License No. DPR-24 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 265, are hereby incorporated in the renewed operating license. NextEra Energy Point Beach shall operate the facility in accordance with Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

David J. Wrona, Chief
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications and
Renewed Facility Operating License

Date of issuance: April 25, 2019

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

NEXTERA ENERGY POINT BEACH, LLC

DOCKET NO. 50-301

POINT BEACH NUCLEAR PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 268
License No. DPR-27

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by NextEra Energy Point Beach, LLC (the licensee), dated March 30, 2018, as supplemented by letter dated November 16, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 4.B of the Renewed Facility Operating License No. DPR-27 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 268, are hereby incorporated in the renewed operating license. NextEra Point Beach shall operate the facility in accordance with Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

David J. Wrona, Chief
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications and
Renewed Facility Operating License

Date of issuance: April 25, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 265

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-24

AND LICENSE AMENDMENT NO. 268

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-27

DOCKET NOS. 50-266 AND 50-301

Replace the following pages of Renewed Facility Operating License Nos. DPR-24 and DPR-27, and Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Renewed Facility Operating License

REMOVE	INSERT
-3-	-3-
-3-	-3-

Technical Specifications

REMOVE	INSERT
5.5-15	5.5-15

D. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, NextEra Energy Point Beach to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

E. Pursuant to the Act and 10 CFR Parts 30 and 70, NextEra Energy Point Beach to possess such byproduct and special nuclear materials as may be produced by the operation of the facility, but not to separate such materials retained within the fuel cladding.

4. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Levels

NextEra Energy Point Beach is authorized to operate the facility at reactor core power levels not in excess of 1800 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 265, are hereby incorporated in the renewed operating license. NextEra Energy Point Beach shall operate the facility in accordance with Technical Specifications.

C. Spent Fuel Pool Modification

The licensee is authorized to modify the spent fuel storage pool to increase its storage capacity from 351 to 1502 assemblies as described in licensee's application dated March 21, 1978, as supplemented and amended. In the event that the on-site verification check for poison material in the poison assemblies discloses any missing boron plates, the NRC shall be notified and an on-site test on every poison assembly shall be performed.

C. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, NextEra Energy Point Beach to receive, possess and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed source for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

D. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, NextEra Energy Point Beach to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

E. Pursuant to the Act and 10 CFR Parts 30 and 70, NextEra Energy Point Beach to possess such byproduct and special nuclear materials as may be produced by the operation of the facility, but not to separate such materials retained within the fuel cladding.

4. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Levels

NextEra Energy Point Beach is authorized to operate the facility at reactor core power levels not in excess of 1800 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 268, are hereby incorporated in the renewed operating license. NextEra Energy Point Beach shall operate the facility in accordance with Technical Specifications.

C. Spent Fuel Pool Modification

The licensee is authorized to modify the spent fuel storage pool to increase its storage capacity from 351 to 1502 assemblies as described in licensee's application dated March 21, 1978, as supplemented and amended. In the event that the on-site verification check for poison material in the poison assemblies discloses any missing boron plates, the NRC shall be notified and an on-site test on every poison assembly shall be performed.

5.5 Programs and Manuals

5.5.14 Safety Function Determination Program (SFDP) (continued)

A loss of safety function exists when, assuming no concurrent single failure, and assuming no concurrent loss of offsite power or loss of onsite diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable; or

b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable; or

c. A required system redundant to the support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

5.5.15 Containment Leakage Rate Testing Program

a. A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with Nuclear Energy Institute (NEI) 94-01, Revision 3-A, "Industry Guidance for Implementing Performance Based Option of 10 CFR 50, Appendix J," and the conditions and limitations specified in NEI 94-01, Revision 2-A.

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 265 and 268

TO RENEWED FACILITY OPERATING LICENSE NOS. DPR-24 AND DPR-27

NEXTERA ENERGY POINT BEACH, LLC

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-266 AND 50-301

1.0 INTRODUCTION

By application to the U.S. Nuclear Regulatory Commission (NRC or Commission) dated March 30, 2018 (Reference 7.1), as supplemented by letter dated November 16, 2018 (Reference 7.16), NextEra Energy Point Beach, LLC (the licensee), requested changes to the Technical Specifications (TS) for the Point Beach Nuclear Plant (PBNP), Units 1 and 2.

The proposed changes would revise the PBNP TS to allow extension of the 10-year frequency of the Type A integrated leak rate test (ILRT) as required by TS 5.5.15, "Containment Leakage Rate Testing Program" to 15 years on a permanent basis and to allow the extension of the containment isolation valves (CIVs) leakage test intervals (i.e., Type C tests) from their current 60 months frequency to 75 months. In particular, the license amendment request (LAR) proposes changes to PBNP TS 5.5.15, by replacing the reference to Regulatory Guide (RG) 1.163 (Reference 7.7) with a reference to Nuclear Energy Institute (NEI) Topical Report (TR) NEI 94-01, Revision 3-A (Reference 7.13), and the conditions and limitations specified in NEI 94-01, Revision 2-A (Reference 7.6), as the implementation documents used by the licensee to implement the PBNP performance-based leakage testing program in accordance with Option B of Title 10 of the *Code of Federal Regulations* (10 CFR) 50, Appendix J. The LAR also proposes an administrative change for both PBNP, Unit 1 and Unit 2. This change consists of deleting the two exceptions (i) and (ii) pertaining to Section 9.2.3 of NEI 94-01, Revision 0 (Reference 7.8).

Based on the currently required frequency of 10 years, the next PBNP Containment ILRT performances are scheduled to be completed:

- during Fall 2020 for Unit 1; and
- during Spring 2020 for Unit 2.

NextEra proposes to extend the PBNP, Unit 1, interval for the containment ILRT to 15 years from the last ILRT. The last Unit 1 ILRT was completed during refueling outage (RFO) U1R33 in November 2011. Unit 1 required test interval frequency reverted to 10 years after completion

of the ILRT during November 2011. Therefore, the next Unit 1 ILRT is currently due for completion before the end of November 2021. Using the proposed interval of 15 years, the next Unit 1 ILRT would need to be completed before the end of November 2026.

Similarly, NextEra proposes to extend the PBNP, Unit 2, interval for the containment ILRT to 15 years from the last ILRT. The last Unit 2 ILRT was completed during RFO U2R31 in April 2011. The Unit 2 required test interval frequency reverted to 10 years after completion of the ILRT during April 2011. Therefore, the next Unit 2 ILRT is currently due for completion before the end of April 2021. Using the proposed interval of 15 years, the next Unit 2 ILRT would need to be completed before the end of April 2026.

The supplement dated November 16, 2018, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's originally proposed no significant hazards consideration determination as published in the *Federal Register* on June 19, 2018 (83 FR 28461).

2.0 REGULATORY EVALUATION

2.1 Description of the PBNP Containment

The following excerpts [*implied, acronym or scientific meanings in italics*] from LAR Enclosure 1, Section 2.2, "Description of Point Beach Reactor Containment" (pages 2 through 5 of 38), provides an abbreviated containment description:

> The PBNP primary containment structures are Seismic Class I structures. The containment ambient temperature during operation is between 50 and 120°F [*Fahrenheit*] with a maximum operable containment average air temperature of 116.3°F per TS 3.6.5, "Containment Air Temperature". The reactor containment structure for PBNP Unit 2 is essentially identical in design and construction to that of Unit 1 except that it is oriented differently.
>
> The PBNP reactor containment system is a right cylinder with a flat base slab and a shallow domed roof. A ¼ inch thick welded ASTM [*American Society for Testing and Materials*] A-442 steel liner is attached to the inside face of the concrete shell to insure a high degree of leak tightness. The base liner is installed on top of the structural slab and is covered with concrete. The structure provides biological shielding for both normal and accident situations. The entire containment structure is housed in an unheated enclosure (facade) that provides protection from the weather.
>
> The internal containment net free volume is approximately 1,000,000 cubic feet, and its associated engineered safety features systems are capable of withstanding a design internal pressure of 60 psig [*pounds per square inch gauge*] and a temperature of 286°F. The engineered safety features for containment include containment spray and the air recirculation cooling systems, which are used to ensure that containment does not exceed its design pressure.
>
> The nominal 3 ft. [*feet*] 6 in. [*inches*] thick cylindrical wall and 3 ft. thick dome are pre-stressed and post tensioned. The nominal 9 ft. thick concrete base slab is reinforced with high strength reinforcing steel. The slab is supported on H piles driven to refusal in the underlying bedrock. Numerous mechanical and electrical systems penetrate the containment wall through welded steel penetrations.

The PBNP containment is a post-tensioned containment, whereby internal pressure load is balanced by an external load on the structure. ... The internal pressure loads on the base slab are resisted by both the piles and the strength of the reinforced concrete slab. Thus, post tensioning is not required to exert an external pressure for this portion of the structure.

The 1/4 in. thick liner plate is attached to the concrete by means of an angle grid system stitch welded to the liner plate and embedded in the concrete. The frequent anchoring is designed to prevent significant distortion of the liner plate during accident conditions and to ensure that the liner maintains its leak tight integrity. The liner plate is coated on the inside with 1-1/2 mil [*millimeters*] (nominal thickness) zinc silicate primer. The top coat is an epoxy finish with thickness as required by location. ... The liner plate serves as a leak tight barrier and is also used to transmit loads to the concrete structure.

The liner plate is fabricated with a leak chase channel (LCC) system which covers all welded seams in the liner plate. In addition, some penetrations have leak chase channels installed over penetration assembly welds. The LCCs are welded on the inside of the liner plate, except for the dome LCCs, which are welded to the outside of the liner plate. ... The LCCs are considered an integral part of the liner plate and therefore a part of the leak tight containment pressure boundary. These channels were not intended to be vented to the containment and were not vented during the early containment integrated leakage rate tests. ... Additional analyses, tests and comparison to more recent ASME [*The American Society of Mechanical* Engineers] design codes were performed to demonstrate both structural and leak-tight integrity of the LCC system. This additional information formed the basis for the NRC's approval to continue Type A testing with the LCCs not vented [Reference 7.4].

Containment penetrations are double-barrier assemblies consisting of a closed sleeve, in most cases, or a double gasketed closure for the fuel transfer tube. The mechanical penetrations are welded to the containment shell. Likewise, the electrical penetration assemblies are constructed to provide a leak-tight barrier.

The hatch [*equipment*] is fabricated from steel and furnished with a double gasketed flange and bolted dished door. Provision is made to allow test pressurization of the spaces between the double gaskets of the dished door flanges and the weld seam channels at the liner joint, hatch flanges, and dished door. ... Personnel access to the containment structure is provided by two personnel air locks. One of these air locks penetrates the dished door of the equipment [*hatch*]. The other personnel air lock is located at a higher elevation of the containment structure. Each personnel air lock is a double door, welded steel assembly, designed to withstand all containment design conditions with either or both doors closed and locked. Doors open toward the center of the containment structure and are thus sealed under containment pressure. Each personnel air lock door is provided with double gaskets to permit pressurization between the gaskets for leakage testing.

A fuel transfer penetration is provided in each containment structure for fuel movement between the refueling transfer canal and the spent fuel pool. The penetration consists of a 20 in. stainless steel pipe installed inside a 24 in. pipe. The inner pipe acts as the transfer tube and is fitted with a double gasketed

transfer tube closure assembly in the refueling canal and a standard gate valve in the spent fuel pool. This arrangement prevents leakage through the transfer tube in the event of an accident. The outer pipe is welded to the containment liner and provision is made by use of continuous leak chase channels for test pressurizing all welds essential to the integrity of the penetration during plant operation.

The piping and ventilation penetrations are of the rigid welded type and are solidly anchored to the containment wall, thus eliminating the need to use expansion bellows for containment barriers inside containment. Electrical penetrations consist of carbon steel pipe canisters with stainless steel header plates welded to each end. Identical hermetically ceramic sealed multi-pin connectors are welded into both headers for conductors rated less than 600 volts. High voltage conductors utilize single conductor hermetically sealed ceramic bushings welded to both header plates. Thus, each canister affords a double barrier against leakage.

2.2 Licensee's Proposed Changes

On November 13, 1996, the NRC approved PBNP license Amendment No. 169 for Unit 1 and No. 173 for Unit 2 (Reference 7.2). These amendments revised TS 15.4.4 "Containment Tests" thereby, authorizing the implementation of 10 CFR Part 50, Appendix J, Option B, for Type A, Type B, and Type C tests.

The NRC then approved license Amendment No. 210 for Unit 1 and 206 Unit 2 (Reference 7.3) on August 8, 2001. These amendments replaced the Custom Technical Specifications (CTS) and associated Bases with a set of TS based on NUREG-1431, Revision 1, "Standard Technical Specifications Westinghouse Plants."

Subsequently, on February 26, 2008, the NRC approved PBNP license Amendment Nos. 232 and 237 for both Unit 1 and Unit 2, respectively (Reference 7.5), which allowed a one-time interval extension of no more than 5 years for the Type A ILRT.

The containment system was originally assigned an allowable accident leakage rate of no greater than 0.4 percent of containment air weight percent per day (wt percent/day) when subject to design pressure and temperature (60 psig [pounds per square inch gauge], 286 °F [degree Fahrenheit]), humidity, chemicals, missiles, and other severe environmental conditions predicted in the event of a design basis loss-of-coolant accident (LOCA). The NRC approved, on April 14, 2011, license Amendment No. 240 for Unit 1 regarding the use of an alternate source term. Similarly, the NRC approved, on May 4, 2011, license Amendment No. 244 for Unit 2. The two license amendments reduced the containment system leakage rate limit for both units to 0.2 wt percent/day (Reference 7.15).

Part "a." of PBNP TS 5.5.15, "Containment Leakage Rate Testing Program" currently states:

a. A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(0) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September, 1995 as modified by the following exception to NEI 94-01, Rev. 0, Industry

Guidance for Implementing Performance Based Option of 10 CFR 50, Appendix J, Section 9.2.3, to allow the following:

(i) The first Unit 1 Type A test performed after October 7, 1997, shall be performed by October 7, 2012.

(ii) The first Unit 2 Type A test performed after March 31, 1997, shall be performed by March 31, 2012.

The proposed amendment (i.e., LAR 288) to PBNP TS 5.5.15 will:

(1) replace reference to RG 1.163 with a reference to NEI TR 94-01 Revisions 2-A and 3-A

(2) delete two exceptions (i) and (ii) pertaining to NEI 94-01, Revision 0 (Reference 7.8), (proposed as an administrative change). These TS 5.5.15 exceptions stipulated already satisfied historical due dates for the calendar year 2012, for the performance of the next PBNP Type A tests.

Succinctly, TS 5.5.15 will state in part:

a. A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with Nuclear Energy Institute (NEI) 94-01, Revision 3-A, "Industry Guidance for Implementing Performance Based Option of 10 CFR 50, Appendix J," and the conditions and limitations specified in NEI 94-01, Revision 2-A.

2.3 PBNP – Licensing Basis Requirements, Final Safety Analysis Report (FSAR) Input, and Regulatory Guidance

Licensing Basis Requirements

Paragraph 50.36(c) of 10 CFR requires TSs to include the following categories: (1) safety limits, limiting safety systems settings, and control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; (5) administrative controls; (6) decommissioning; (7) initial notification; and (8) written reports. Section 50.36(c)(5) of 10 CFR states that "[a]dministrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner."

Section 50.54(o) of 10 CFR requires that the primary reactor containments for water cooled power reactors shall be subject to the requirements set forth in Appendix J to 10 CFR Part 50, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors." 10 CFR Part 50, Appendix J, includes two options: "Option A – Prescriptive Requirements," and "Option B – Performance-Based Requirements," either of which can be chosen for meeting the requirements of the Appendix.

The testing requirements in 10 CFR Part 50, Appendix J, ensure that: (a) leakage through containments or systems and components penetrating containments does not exceed allowable leakage rates specified in the TS; and (b) integrity of the containment structure is maintained during the service life of the containment. PBNP has voluntarily adopted and implemented Option B for meeting the requirements of 10 CFR Part 50, Appendix J.

The regulations in 10 CFR 50.55a, "Codes and Standards," contains the containment inservice inspection (CISI) requirements that, in conjunction with the requirements of Appendix J, ensure the continued leak-tight and structural integrity of the containment during its service life.

The regulation in 10 CFR 50.65(a), "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," states, in part, that the licensee:

> ...shall monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, and components, as defined in paragraph (b) of this section, are capable of fulfilling their intended functions. These goals shall be established commensurate with safety and, where practical, take into account industrywide operating experience.

Option B of 10 CFR Part 50, Appendix J, specifies performance-based requirements and criteria for preoperational and subsequent leakage-rate testing. These requirements are met by performance of Type A tests to measure the containment system overall integrated leakage rate, Type B pneumatic tests to detect and measure local leakage rates across pressure-retaining or leakage-limiting boundaries such as penetrations, and Type C pneumatic tests to measure containment isolation valve (CIV) leakage rates. After the preoperational tests, these tests are required to be conducted at periodic intervals based on the historical performance of the overall containment system (for Type A tests) and based on the safety significance and historical performance of each boundary and isolation valve (for Types B and C tests) to ensure integrity of the overall containment system as a barrier to fission product release.

The regulation in 10 CFR 50, Appendix J, Option B, Section V.B.3, requires that the Regulatory Guide (RG) or other implementation document used by a licensee to develop a performance-based leakage-testing program be included, by general reference, in the plant TSs. Furthermore, the submittal for TS revisions must contain justification, including supporting analyses, if the licensee chooses to deviate from methods approved by the Commission and endorsed in RG 1.163, "Performance-Based Containment Leak-Test Program."

NEI 94-01, Revision 2-A, describes an approach for implementing the optional performance-based requirements of Option B of 10 CFR 50, Appendix J. It incorporates the regulatory positions stated in RG 1.163 (September 1995), and includes provisions for extending Type A test intervals to up to 15 years. In the NRC staff's safety evaluation (SE), dated June 25, 2008 (Reference 5.4), the staff concluded that NEI 94-01, Revision 2, describes an acceptable approach for implementing the optional performance-based requirements of Option B of 10 CFR 50, Appendix J, and is acceptable for referencing by licensees proposing to amend their TS in regard to containment leakage rate testing, subject to the specific limitations and conditions listed in Section 4.1 of the SE.

Currently, PBNP TS 5.5.15, "Containment Leakage Rate Testing Program" requires that leakage rate testing be performed as required by 10 CFR Part 50, Appendix J, Option B as modified by approved exemptions. The program is in accordance with the guidelines contained in NRC RG 1.163, "Performance-Based Containment Leak-Rate Testing Program," dated September 1995 as modified by approved exceptions "(i)" and "(ii)" to the guidance of NEI 94-01, Revision 0, as identified in Section 2.2 above.

The Type A test is an overall ILRT of the containment structure. After the containment system has been completed and is ready for operation, Type A tests are conducted at periodic intervals based on the historical performance of the overall containment system to measure the overall integrated leakage rate.

NEI 94-01, Revision 0, specifies an initial test interval of 48 months but allows an extended interval of 10 years, based upon two consecutive successful tests. There is also a provision for extending the test interval an additional 15 months, but this "should be used only in cases where refueling schedules have been changed to accommodate other factors." Amendment No. 232 to Renewed Facility Operating License DPR-24 for PBNP, Unit 1, allowed a one-time extension of the ILRT interval to 15 years. Amendment No. 237 to Renewed Facility Operating License DPR-27 for PBNP, Unit 2, allowed a one-time extension of the ILRT interval to 15 years (Reference 7.5). However, subsequent to these one-time extensions, both Unit 1 and Unit 2 long term ILRT interval requirements in PBNP TS 5.5.15 remained at 10 years.

In accordance with PBNP TS 5.5.15, the containment structures of Units 1 and 2 are designed to maintain leakage no greater than the maximum allowable containment leakage rate (L_a) of 0.2 percent of containment air weight percent/day at a peak design containment internal accident pressure (P_a) of 60 pounds psig.

The results of the two most recent PBNP, Unit 1, Type A, tests of October 1997 and November 2011 are reflected in the "Unit 1" table contained in LAR Section 3.1.1, "Type A Testing." Both Type A tests were successful since the "As-Found Leak Rate" test results were less than $1.0L_a$ as specified by the limiting value of PBNP TS 5.5.15. Both P_a and L_a are defined in PBNP TS 5.5.15, "Containment Leakage Rate Testing Program."

Similarly, the results of the two most recent PBNP, Unit 2, Type A, tests of March 1997 and April 2011 are reflected in the "Unit 2" table contained in LAR Section 3.1.1, "Type A Testing." Both Type A tests were successful since the "As-Found Leak Rate" test results were less than 1.0 L_a as specified by the limiting value of PBNP TS 5.5.15.

The Type A and the combined Type B and Type C test results must not exceed the L_a with margin, as specified in PBNP TS 5.5.15 "Leakage Rate acceptance criteria" "d." Option B also requires that a general visual inspection of the accessible interior and exterior surfaces of the containment system for structural deterioration, which may affect the containment leak-tight integrity, be conducted prior to each Type A test and at a periodic interval between tests based on the performance of the containment system.

Updated Final Safety Analysis Report Input

Section 5.5.3, "Leakage" (page 5.5-1 of 1, FSAR [updated final safety analysis report] 2010) states "*A containment leakage rate of 0.2 weight percent of the contained air per 24 hours at an internal pressure of 60 psig under hypothetical accident conditions with 2 of 4 air recirculation units operating will maintain public exposure well below 10 CFR 50.67 values.*"

Regulatory Guidance

Guidance for extending Type A ILRT surveillance intervals beyond 10 years is provided in NEI 94-01, Revision 2-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," October 2008. Guidance for extending Type C local leak-

rate test (LLRT) surveillance intervals beyond 60 months is provided in NEI 94-01, Revision 3-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," July 2012.

Information Notice 92-20 -- Steel expansion bellows are used on piping penetrations in many plants as part of the containment isolation scheme. A Type B LLRT is performed on the bellows periodically to verify that containment integrity is being maintained. An event on February 26, 1991, at Quad Cities Nuclear Power Station (QCNPS), Unit 1, revealed that the LLRT performed between the two plies could not be used to accurately measure the leakage rate that would occur through the bellows under accident conditions. The two plies of the bellows were in contact with each other, restricting the flow of the test medium to the crack locations. The NRC staff investigated and found that this problem is not isolated to the bellows manufactured by the vendor involved at QCNPS. Any two-ply bellows of similar construction may be susceptible to this problem.

3.0 TECHNICAL EVALUATION

3.1 Staff Evaluation

The proposed changes of LAR 288 will revise portions of PBNP TS 5.5.15 by replacing the reference to RG 1.163 with a reference to NEI 94-01, Revision 3-A, and the conditions and limitations specified in NEI 94-01, Revision 2-A, as the documents used by PBNP to implement the performance-based leakage testing program in accordance with Option B of 10 CFR 50, Appendix J. By invoking these two NEI 94-01 TRs as the Option B implementation documents for TS 5.5.15, the NRC staff notes that the licensee will be:

- adopting the use of American National Standards Institute/American Nuclear Society (ANSI/ANS) 56.8-2002, Containment System Leakage Testing Requirements (Reference 7.11); and

- adopting a more conservative grace interval of 9 months, for Type A, Type B, and Type C leakage tests in accordance with NEI 94-01, Revision 3-A.

With respect to the proposed deletion of exceptions "i" and "ii" currently contained in PBNP TS 5.5.15, the NRC staff concurs with the licensee, since the deletion of the one-time exceptions to NEI 94-01, Revision 0, Section 9.2.3, which read:

> (i) The first Unit 1 Type A test performed after October 7, 1997, shall be performed by October 7, 2012.
>
> (ii) The first Unit 2 Type A test performed after March 31, 1997, shall be performed by March 31, 2012.

would be appropriate following the NRC staff's approval of NextEra's LAR 288 dated March 30, 2018. As indicated in the "Unit 1" table of LAR Section 3.1.1, the first Unit 1 Type A test after the October 1997 ILRT was completed in November 2011, during Unit 1 RFO U1R33. Similarly, as indicated in the "Unit 2" table of LAR Section 3.1.1, the first Unit 2 Type A test after the March 1997 ILRT was completed in April 2011, during Unit 2 RFO U2R31. Accordingly, the NRC staff approves the deletion of the two exceptions "i" and "ii" associated with PBNP TS 5.5.15.

Consistent with both NEI 94-01, Revision 2-A, and NEI 94-01, Revision 3-A, the licensee justified the proposed changes by demonstrating adequate performance of the PBNP containments based on: (a) the historical plant-specific containment leakage testing program results (Sections 3.1.1 and 3.1.2 of this SE); (b) the CISI program results (Section 3.1.3 of this SE); and (c) a PBNP plant-specific risk assessment (Section 3.2 of this SE).

The NRC staff reviewed LAR 288 from the perspective of deterministic considerations pertaining to containment leak-tight integrity. The staff's review analysis of these changes is conveyed in the following subsections of Section 3.1.

3.1.1 Type A Integrated Leak Rate Test History

Unit 1

Per PBNP TS 5.5.15, the Unit 1 Containment has a maximum allowable leakage rate L_a of 0.2 percent by weight of containment air weight per day at the peak design containment internal accident pressure, P_a. TS 5.5.15 indicates that peak design containment internal accident pressure, P_a, is 60 psig.

Since 1990 a total of four ILRTs have been performed on the Unit 1 Containment. All four ILRTs had satisfactory leakage rate results. These four ILRT results were documented in the "Unit 1" table contained in LAR Section 3.1.1, "Type A Testing." These test results are reflected in Table 3.1.1-1 below:

TABLE 3.1.1-1
PBNP Unit 1 Type A ILRT History

Test Date	Test Pressure (psia)	Design Pressure (psid)	As Found Leak Rate (Wt.%/day)	As Found Acceptance Criteria (Wt.%/day)	As Left Leak Rate (Wt.%/day)	As Left Acceptance Criteria (Wt.%/day)
April 1990	44.62	60	0.067	(Note 1)	0.067	0.212 ($0.75L_t$)
April 1993	44.05	60	0.072	(Note 1)	0.072	0.212 ($0.75L_t$)
Oct. 1997	75.10	60	0.0465	0.400	0.0465	0.300 ($0.75L_a$)
Nov. 2011	73.26	60	0.1141	0.200	0.1136	0.150 ($0.75L_a$)

Table 3.1.1-1 Notes:
(1) As-found Acceptance Criteria were not specifically identified in the testing documents for the pre-1997 tests.

The ILRT interval for PBNP, Unit 1, reverted to 10 years after completion in November 2011.

The NRC staff notes that the last sentence of Section 9.2.3, "Extended Test Intervals," of NEI 94-01 Revision 3-A states "*In the event where previous Type A tests were performed at reduced pressure (as described in 10 CFR 50, Appendix J, Option A), at least one of the two consecutive periodic Type A tests shall be performed at peak accident pressure (P_a).*" Section 9.1.2 of the same NEI TR states in part that "*The elapsed time between the first and the last tests in a series of consecutive passing tests used to determine performance shall be at least 24 months.*"

The NRC staff confirmed that the P_a requirement of Section 9.2.3 has been satisfied, as both Unit 1 ILRTs of October 1997 and of November 2011 were performed at a test pressure within the limitations of ANSI 56.8-1994 Section 3.2.11, "Type A Test Pressure." More specifically, the ILRT Pressure, P_t, can range from $0.96P_{ac}<P_t<P_d$ where:

P_a = 60 psig
P_{ac}= the calculated peak containment internal accident pressure related to the design-basis Accident (DBA)
P_d = Containment Design Pressure

The PBNP FSAR, Section 5.5.3, "Leakage" [Page 5.5-1 of 1, FSAR 2010] lists the containment design pressure for Unit 1 as 60 psig. As can be seen in Table 3.1.1-1, Type A test of November 2011 was performed within the limitations of ANSI 56.8-1994. Therefore, the above requirements of both NEI TR, Sections 9.1.2 and 9.2.3, have been satisfied.

The Appendix J, Option B, current licensing basis PBNP TS 5.5.15 references RG 1.163. Regulatory Position C of RG 1.163 in turn states that NEI 94-01, Revision 0 *"provides methods acceptable to the NRC staff for complying with the provisions of Option B in Appendix J to 10 CFR Part 50."* The third paragraph of Section 9.2.3, "Extended Test Intervals," of NEI 94-01 Revision 0, states in part:

> In reviewing past performance history, Type A test results may have been calculated and reported using computational techniques other than the Mass Point method from ANSI/ANS-56.8-1994 (e.g., Total Time or Point-to-Point). Reported test results from these previously acceptable Type A tests can be used to establish the performance history. Additionally, a licensee may recalculate past Type A Upper Confidence Limit (UCL) (using the same test intervals as reported) in accordance with ANSI/ANS-56.8-1994 Mass Point methodology and its adjoining Termination criteria in order to determine acceptable performance history.

NEI 94-01, Revision 3-A reiterates this guidance, and identifies the test standard as ANSI/ANS-56.8-2002.

The NRC staff notes that Section 9.2.3 of NEI 94-01 Revision 0, does not mandate that a licensee recalculate past Type A test results to demonstrate conformance with the definition of "performance leakage rate" contained in NEI 94-01, Revision 3-A. The NRC staff also notes that the Unit 1 IRLT results since October 1997 demonstrated ample margin (i.e., > 42 percent) between each "As-found Leakage Rate" value and L_a. Accordingly, the NRC staff did not request that the licensee reconstitute the Unit 1 Type A test results from earlier than the ILRT of October 1997.

PBNP TS 5.5.15.d.2 (i.e., Leakage Rate acceptance criteria) establishes the maximum limit for the Unit 1 "As-Left Leakage Rate" for Unit startup following completion of Type A testing at $\leq 0.75\ L_a$, which equals 0.150 percent of containment air weight per day.

The past two ILRTs for Unit 1 results dating back to 1997 have confirmed that the containment leakage rates are acceptable with respect to the allowable leakage criterion of percent containment air weight (L_a) per day. Since the last two Type A tests for PBNP, Unit 1, had "As Found Leakage Rate" test results of less than $1.0L_a$ at the peak design containment internal accident pressure (P_a), a test frequency of 15 years in accordance with NEI 94-01 Revision 3-A, and the conditions and limitations of NEI 94-01 Revision 2-A would be acceptable for Unit 1.

Based on the last two PBNP, Unit 1 ILRT results, the NRC staff concludes that the requirements of Sections 9.1.2 and 9.2.3 of NEI 94-01 Revision 3-A, have been satisfied.

Unit 2

Per PBNP TS 5.5.15, the Unit 2 containment has a maximum allowable leakage rate L_a of 0.2 percent by weight of containment air weight per day at the peak design containment internal accident pressure, P_a. TS 5.5.15 indicates that peak design containment internal accident pressure, P_a, is 60 psig.

Since 1989, a total of four ILRTs have been performed on the Unit 2 Containment. These four Unit 2 ILRTs all had satisfactory leakage rate results. These four ILRT test results were documented in the "Unit 2" table contained in LAR Section 3.1.1, "Type A Testing." These test results are reflected in Table 3.1.1-2 below:

TABLE 3.1.1-2
PBNP Unit 2 Type A ILRT History

Test Date	Test Pressure (psia)	Design Pressure (psid)	As Found Leak Rate (Wt.%/day)	As Found Acceptance Criteria (Wt.%/day)	As Left Leak Rate (Wt.%/day)	As Left Acceptance Criteria (Wt.%/day)
Sept. 1989	44.68	60	0.060	(Note 1)	0.060	0.201 ($0.75L_t$)
Oct. 1992	45.09	60	0.101	(Note 1)	0.101	0.201 ($0.75L_t$)
March 1997	75.01	60	0.1087	0.400	0.1009	0.300 ($0.75L_a$)
April 2011	73.40	60	0.0859	0.200	0.0859	0.150 ($0.75L_a$)

Table 3.1.1-2 Notes:

(1) As-found Acceptance Criteria were not specifically identified in the testing documents for the pre-1997 tests.

The ILRT test interval for PBNP, Unit 2, reverted to 10 years after completion of the ILRT in April 2011.

The NRC staff notes that the last sentence of Section 9.2.3, "Extended Test Intervals," of NEI 94-01, Revision 3-A, states "*In the event where previous Type A tests were performed at reduced pressure (as described in 10 CFR 50, Appendix J, Option A), at least one of the two consecutive periodic Type A tests shall be performed at peak accident pressure (P_a).*" Section 9.1.2 of the same NEI TR states in part that "*The elapsed time between the first and the last tests in a series of consecutive passing tests used to determine performance shall be at least 24 months.*"

The NRC staff confirmed that the P_a requirement of Section 9.2.3 has been satisfied, as both Unit 2 ILRTs of March 1997 and of April 2011 were performed at a test pressure within the limitations of ANSI 56.8-1994 Section 3.2.11, "Type A Test Pressure." More specifically, the ILRT Pressure, P_t, can range from $0.96P_{ac}<P_t<P_d$ where:

P_a = 60 psig
P_{ac}= the calculated peak containment internal accident pressure related to the DBA
P_d = containment design pressure

The PBNP FSAR, Section 5.5.3 "Leakage" [page 5.5-1 of 1, FSAR 2010], lists the containment design pressure for Unit 2 as 60 psig. As can be seen in Table 3.1.1-2, Type A test of April 2011 was performed within the limitations of ANSI 56.8-1994. Therefore, the above requirements of the NEI TR, Sections 9.1.2 and 9.2.3, have been satisfied.

The Appendix J, Option B current licensing basis PBNP TS 5.5.15 references RG 1.163. Regulatory Position C of RG 1.163 in turn states that NEI 94-01, Revision 0 "*... provides methods acceptable to the NRC staff for complying with the provisions of Option B in Appendix J to 10 CFR Part 50.*" The third paragraph of Section 9.2.3, "Extended Test Intervals," of NEI 94-01, Revision 0, states in part:

> In reviewing past performance history, Type A test results may have been calculated and reported using computational techniques other than the Mass Point method from ANSI/ANS-56.8-1994 (e.g., Total Time or Point-to-Point). Reported test results from these previously acceptable Type A tests can be used to establish the performance history. Additionally, a licensee may recalculate past Type A Upper Confidence Limit (UCL) (using the same test intervals as reported) in accordance with ANSI/ANS-56.8-1994 Mass Point methodology and its adjoining Termination criteria in order to determine acceptable performance history.

NEI 94-01, Revision 3-A reiterates this guidance, and identifies the test standard as ANSI/ANS-56.8-2002.

The NRC staff notes that Section 9.2.3 does not mandate that a licensee recalculate past Type A test results to demonstrate conformance with the definition of "performance leakage rate" contained in NEI 94-01 Revision 3-A. The NRC staff also notes that the Unit 2 IRLT results since March 1997 demonstrated ample margin (i.e., > 57 percent) between each "As found Leakage Rate" value and L_a. Accordingly, the NRC staff did not request that the licensee reconstitute the Unit 2 Type A test results from earlier than the ILRT of March 1997.

PBNP TS 5.5.15.d.2 (i.e., leakage rate acceptance criteria) establishes the maximum limit for the Unit 2 "As-Left" Leakage Rate for Unit startup following completion of Type A testing at ≤ 0.75 L_a, which equals 0.150 percent of containment air weight per day.

The past two Unit 2 ILRT results dating back to 1997 have confirmed that the containment leakage rates are acceptable with respect to the allowable leakage criterion of percent containment air weight (L_a) per day. Since the last two Type A tests for PBNP, Unit 2, had "As Found Leakage Rate" test results of less than 1.0 L_a at the peak design containment internal accident pressure (P_a), a test frequency of 15 years in accordance with NEI 94-01 Revision 3-A, and the conditions and limitations of NEI 94-01 Revision 2-A, would be acceptable for Unit 2.

Based on the last two PBNP, Unit 2, ILRT results, the NRC staff concludes that the requirements of Sections 9.1.2 and 9.2.3 of NEI 94-01 Revision 3-A, have been satisfied.

3.1.2 Types B and C Leak Rate Test History

Unit 1

PBNP TS 5.5.15, "Containment Leakage Rate Testing Program," states in part:

> d. Leakage Rate acceptance criteria are:
>
> 1. Containment leakage rate acceptance criterion is ≤ 1.0 L_a.
>
> 2. During the first unit startup following testing in accordance with this program, the leakage rate acceptance are ≤ 0.6 L_a for the combined Type B and Type C tests and ≤ 0.75 L_a for the Type A tests.

The NRC staff reviewed the local leak rate summaries listed in the table contained in LAR Section 3.1.2, "Type B and C Testing," and entitled "Point Beach Unit 1 Type B and C Leakage Rate Summation History." [*Enclosure 1, page 7 of 38*].

The licensee indicated that *"L_a= Design Basis Accident Leakage Rate (@ 60 psig, 286 °F) = 199,800 sccm"* [*Enclosure 1, page 6 of 38*]. Therefore, 0.6L_a equals 119,880 standard cubic centimeters per minute (sccm). With the use of these L_a values and the data contained in subject table, the NRC staff confirmed the accuracy of the "Percentage of 0.6L_a" values contained in the Table and concluded that:

- The Unit 1 "As-Found" minimum pathway leakage rates for the last seven refueling outages since 2008 have an average of 7.80 percent of 0.6L_a with a high of 23.1 percent of 0.6L_a.

- The Unit 1 "As-Left" maximum pathway leakage rates for the last seven refueling outages since 2008 have an average of 8.55 percent of 0.6L_a with a high of 12.0 percent of 0.6L_a.

As conveyed in "Table 1 - Extended Frequency Percentages" of LAR Section 3.1.2, "Type B and C Testing," 31 (i.e., > 73 percent) of Unit 1, Type C, penetrations eligible for extended intervals are currently on extended test intervals of 60 months. In total, Unit 1 has 42 Type C penetrations that are eligible for a maximum test interval frequency of 60 months in accordance with the provisions of RG 1.163 and NEI 94-01, Revision 0. As can be deduced from LAR Table 3, "Type C Penetrations Most Recent Two Tests (Max Path As-Found Leakage)," and its Note 2, 10 of these 42 penetrations are eligible for extended test intervals but

valves associated with these penetrations are leak tested on a more frequent basis to meet the needs of other programmatic activities such as the IST program, air operated valve (AOV) program, motor-operated valve (MOV) program, or post maintenance testing requirements. For the one residual penetration from this group of eligible penetrations, the licensee noted in LAR Section 3.1.2 that:

> For Unit 1, there has been one local leak rate test failure in the past 36 months. During U1 R37, diaphragm valve 1WL-1721 failed the local leak rate test. 1WL-1721 had been overhauled in U1R36. As part of the overhaul, the valve was disassembled, inspected, cleaned, and reassembled with new elastomers. Subsequent to the leakage test in U1R37 [Fall 2017], it was determined that the body to bonnet bolts had been torqued to the incorrect value in U1 R36 [*Spring 2016*], resulting in an under-torqued as-left body to bonnet connection.

In RAI-1 (Reference 7.16), the NRC staff noted that for an established Appendix J, Option B, LLRT program with a sufficient historical base, the percentage of Type B or Type C components on repetitive frequencies can indicate the quality of the maintenance program and corrective action process. To this end, the NRC staff requested additional information about the percentage of Unit 1, Type B, penetrations currently on the maximum allowed test frequency of 120 months.

Specifically, the NRC staff requested clarification of the following excerpt [*Enclosure 1, page 9 of 38*] from LAR Section 3.1.2, "Type B and Type C Testing":

> For Type B testing, 5 penetrations for Unit 1 and 6 penetrations for Unit 2 are currently on extended frequency. For both Units 1 and 2, two penetrations (each) are tested when the penetrations are opened. If these penetrations are not opened for multiple outages, the penetrations are eligible for extended frequency testing. Measured leakage for these penetrations has not changed significantly over 120 months.

The licensee provided a tabular listing (Reference 7.16) pertaining to the total population of the 13 Unit 1, Type B, tested penetrations. The listing indicated that 8 of the 13 Unit 1, Type B, penetrations are typically used each refueling outage and therefore require Type B testing before the conclusion of each outage. Accordingly, none of these eight penetrations would normally qualify for an extended test frequency.

With respect to the residual five Type B penetrations eligible for an extended test frequency of 120 months, the licensee responded in part that:

> None of the eligible penetrations are on a 120-month extended performance based test frequency. None of the eligible penetrations have failed to meet their administrative limits or have adverse maintenance history. NextEra has conservatively elected to test the eligible penetrations more often as an early detection and preventative maintenance technique.
>
> Five of the 13 penetrations are electrical penetrations currently on a 3R *[every 3rd outage]* (refueling) extended test frequency. These penetrations have an excellent test/maintenance history and are eligible for testing on a 120-month extended test frequency in the future. The higher test frequency is considered an Appendix J program conservatism.

The NRC staff found the licensee's response acceptable since it raised no concerns about the quality of the licensee's maintenance program and corrective action process.

In LAR Section 3.1.2, the licensee listed five criteria used at PBNP to establish and implement extended test intervals for Types B and C components as: (1) past component performance; (2) service; (3) design; (4) safety impact; and (5) cause determination. The NRC staff notes that the criteria invoked are consistent with the guidance in Section 11.3.1, "Performance Factors," of NEI 94-01, Revision 0.

Based on the NRC staff's review of the historical information provided in LAR Section 3.1.2, the staff observed that there was no indication of the licensee's failure to adequately implement the requirements of its Appendix J, Option B, performance-based testing program.

In summary, the licensee provided a sufficient explanation about the cause of the administrative limit failure of the sole LLRT Type C penetration failure experienced during the last two Unit 1 RFOs. Furthermore, based on a review of the LAR Section 3.1.2, "Type B and C Testing," table entitled "Point Beach Unit 1 Type B and C Leakage Rate Summation History," the NRC staff concluded that the aggregate results of the "As-Found Minimum Pathway" for all Unit 1 Types B and C tests from 2008 through 2017 demonstrates a history of adequate maintenance since the aggregate test results at the end of each operating cycle were all well below (i.e., > 76 percent margin) the Type B and Type C test TS leakage rate acceptance criteria of $\leq 0.60\ L_a$ contained in TS 5.5.15.d.2.

From its review of the information contained in LAR Section 3.1.2, "Type B and C Testing," the NRC staff finds there is reasonable assurance that the licensee has been compliant with the NEI 94-01, Revision 0, guidance of Section 10.2.1, "Type B Test Intervals," and Section 10.2.3, "Type C Test Interval."

SUMMARY

Based on the LAR information discussed above and the fact that all but one of the consistently eligible Type C, Unit 1, containment penetrations are on extended test intervals, the NRC staff concludes that the licensee has a demonstrated history of adherence to the requirements of Appendix J Option B. This conclusion supports allowing an extended test interval of up to 75 months for the PBNP, Unit 1, Type C, tested CIVs in accordance with the guidance of NEI 94-01, Revision 3-A.

Unit 2

PBNP TS 5.5.15, "Containment Leakage Rate Testing Program," states in part:

> d. Leakage Rate acceptance criteria are:
>
> 1. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$.
>
> 2. During the first unit startup following testing in accordance with this program, the leakage rate acceptance are $\leq 0.6\ L_a$ for the combined Type B and Type C tests and $\leq 0.75\ L_a$ for the Type A tests.

The NRC staff reviewed the local leak rate summaries listed in the Table contained in LAR Section 3.1.2, "Type B and C Testing," and entitled "Point Beach Unit 2 Type B and C Leakage Rate Summation History" [*Enclosure 1, page 8 of 38*].

The licensee indicated that *"L_a= Design Basis Accident Leakage Rate (@ 60 psig, 286 °F) = 199,800 sccm"* [*Enclosure 1, page 6 of 38*]. Therefore, 0.6L_a equals 119,880 sccm. With the use of these L_a values and the data contained in subject Table, the staff confirmed the accuracy of the "Percentage of 0.6L_a" values contained in the Table and concluded that:

- The Unit 2 "As-Found" minimum pathway leakage rates for the last seven refueling outages since 2008 have an average of 7.84 percent of 0.6L_a with a high of 12.6 percent of 0.6L_a.

- The Unit 2 "As-Left" maximum pathway leakage rates for the last seven refueling outages since 2008 have an average of 7.91 percent of 0.6L_a with a high of 13.1 percent of 0.6L_a.

As conveyed in "Table 1 - Extended Frequency Percentages" of LAR Section 3.1.2, "Type B and C Testing," 29 (i.e., 69 percent) of Unit 2, Type C, penetrations eligible for extended intervals are currently on extended test intervals of 60 months. In total, Unit 2 has 42 penetrations that are eligible for a maximum test interval frequency of 60 months in accordance with the provisions of RG 1.163 and NEI 94-01, Revision 0. As can be deduced from LAR Table 3 "Type C Penetrations Most Recent Two Tests (Max Path As-Found Leakage)" and its Note 2, 9 of these 42 penetrations are eligible for extended test intervals but valves associated with these penetrations are leak tested on a more frequent basis to meet the needs of other programmatic activities such as IST, AOV program, MOV program, or post-maintenance testing requirements. For the four residual penetrations from this group of eligible penetrations, the licensee noted in LAR Section 3.1.2 that:

> For Unit 2, there have been four local leak rate test failures in the past 36 months. During U2R35 *[Spring 2017]*, air-operated globe valve 2CV-0313A, gate valve 2SA-17, diaphragm valve 2WL-1721, and Penetrations P-17 and P-15 failed their local leak rate tests.
>
> - Valve 2CV-0313A had debris preventing the valve from fully closing. The valve was disassembled, cleaned, adjusted and retested with an as-left leakage rate of 4.2 sccm.
>
> - The leakage associated with valve 2SA-17 was determined to be related to packing leakage at valves 2SA-27 and 2SA-28. The packing was tightened and retested with an as-left leakage of 21 sccm.
>
> - Valve 2WL-1721 experienced body to bonnet leakage which impacted the test results for valves 2SF-816, 2WL-1003A, 2WL-1003B, and 2WL-1698. The bonnet bolts on valve 2WL-1721 were torqued and retested with an as-left leakage of 29 sccm.
>
> - Valves 2CC-754A and 2CC-759A had the leakage associated with Penetrations P-17 and P-15 and was determined to be leakage at the flanges at the inlet and outlet of a Reactor Coolant Pump oil cooler. The upper oil cooler piping was re-aligned, flanges re-torqued and retested with an as-left leakage of 79.8 sccm.

In RAI-1(Reference 5.16), the NRC staff noted that for an established Appendix J, Option B, LLRT program with a sufficient historical base, the percentage of Type B or Type C components on repetitive frequencies can indicate the quality of the maintenance program and corrective

action process. To this end, the staff requested additional information about the percentage of Unit 2, Type B, penetrations currently on the maximum allowed test frequency of 120 months.

Specifically, the NRC staff requested clarification of the following excerpt [*Enclosure 1, page 9 of 38*] from LAR Section 3.1.2, "Type B and Type C Testing":

> For Type B testing, five penetrations for Unit 1 and six penetrations for Unit 2 are currently on extended frequency. For both Units 1 and 2, two penetrations (each) are tested when the penetrations are opened. If these penetrations are not opened for multiple outages, the penetrations are eligible for extended frequency testing. Measured leakage for these penetrations has not changed significantly over 120 months.

The licensee provided a tabular listing (Reference 7.16) pertaining to the total population of the 14 Unit 2, Type B, tested penetrations. The listing indicated that eight of the 14 Unit 2 Type B penetrations are typically used each refueling outage and therefore require Type B testing before the conclusion of each outage. Accordingly, none of these eight penetrations would normally qualify for an extended test frequency.

With respect to the six Type B penetrations eligible for an extended test frequency of 120 months, the licensee responded, in part, that:

> One (7 percent) of the eligible penetrations is on a 120-month extended performance based test frequency. None of the eligible penetrations have failed to meet their administrative limits or have adverse maintenance history. NextEra has conservatively elected to test the eligible penetrations more often as an early detection and preventative maintenance technique.
>
> Five of the 14 penetrations are electrical penetrations currently on a 3R extended test frequency. These penetrations have an excellent test/maintenance history and are eligible for testing on a 120-month extended frequency in the future. The higher test frequency is considered an Appendix J program conservatism.

The licensee indicated that the eddy current test of mechanical penetration P67-2 is the lone eligible penetration currently on a 120-month extended test frequency.

The NRC staff found the licensee's response acceptable since it raised no concerns about the quality of the licensee's maintenance program and corrective action process.

In LAR Section 3.1.2, the licensee listed five criteria used at PBNP to establish and implement extended test intervals for Types B and C components as: (1) past component performance; (2) service; (3) design; (4) safety impact; and (5) cause determination. The NRC staff notes that the criteria invoked are consistent with the guidance of Section 11.3.1, "Performance Factors," of NEI 94-01, Revision 0.

Based on the NRC staff's review of the historical information provided in LAR Section 3.1.2, the staff observed that there was no indication of the licensee's failure to adequately implement the requirements of its Appendix J, Option B, performance-based testing program.

In summary, the licensee provided a sufficient explanation about the cause of administrative limit failures for the four LLRT Type C penetrations during the last two Unit 2 RFOs. Furthermore, based on the review of the LAR Section 3.1.2, "Type B and C Testing," table

entitled "Point Beach Unit 2 Type B and C Leakage Rate Summation History," the NRC staff has concluded that the aggregate results of the "As-Found Minimum Pathway" for all Unit 2 Type B and C tests from 2008 through 2017 demonstrates a history of adequate maintenance. Specifically, the review of the Table indicates that aggregate test results at the end of each operating cycle were all well below (i.e., > 87 percent margin) the Type B and Type C test TS leakage rate acceptance criteria of ≤ 0.60 L_a contained in TS 5.5.15.d.2.

From its review of the information contained in LAR Section 3.1.2, "Type B and C Testing," the NRC staff finds reasonable assurance that the licensee has been compliant with the NEI 94-01, Revision 0, guidance of Section 10.2.1, "Type B Test Intervals," and Section 10.2.3, "Type C Test Interval."

SUMMARY

Based on the LAR information discussed above and the fact that all but four of the consistently eligible Type B and Type C Unit 2 Containment penetrations are on extended test intervals, the NRC staff concludes that the licensee has a demonstrated history of adherence to the requirements of Appendix J, Option B. This conclusion supports allowing an extended test interval of up to 75 months for the PBNP, Unit 2, Type C, tested CIVs in accordance with the guidance of NEI 94-01, Revision 3-A.

Type B & Type C Test Program Assessment

In summary, the NRC staff concludes that:

- the licensee has been compliant with the guidance of RG 1.163 and Sections 10.2.1, 10.2.3, and 11.3.1 of NEI 94-01, Revision 0.
- the cumulative Type B and C test results were below the acceptance limit of TS 5.5.15.d.2; and
- the licensee has a corrective action program that appropriately addresses poor performing valves and penetrations.

Therefore, the NRC staff finds that the licensee is effectively implementing the PBNP Type B and Type C leakage rate test program, as required by Option B of 10 CFR 50, Appendix J.

3.1.3 CISI Program

In Reference 7.1, the licensee stated that PBNP has established a CISI Program in accordance with 10 CFR 50.55a for Class MC components. The third IWE inspection interval from September 2016 to September 2026 will apply Subsection IWE, 2007 Edition with the 2008 Addenda of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, (ASME Code) Section XI, Subsection IWE, as modified by 10 CFR 50.55a. The licensee also stated that the IWL inspection program identifies the ASME Code, Section XI, Subsection IWL, components, or items that are required to be examined (from September 2016 to September 2026), in accordance with the 2007 Edition with the 2008 Addenda of the ASME Code, within the limitations and modifications required by 10 CFR, Part 50.55a, Codes and Standards.

The licensee further stated that the CISI program is not affected by the proposed amendment for Appendix J testing and as required by IWL-2400 tendon surveillances will continue to be performed on a 5-year frequency. The licensee stated that "[t]herefore, even though the

proposed amendment will extend the ILRT testing frequency for 5 additional years, the IWE and IWL examinations, tendon surveillances, and associated requirements will continue to provide assurance that degradation of the containment will be detected and corrected before it can result in a leakage path."

a. IWE and IWL Inspection Interval and Inspection Periods

In Reference 7.1, the licensee stated that the examinations required by Subsection IWE and IWL are scheduled and tracked using a database. The licensee also provided a summary of the current and the next CISI intervals for PBNP as presented in the tables below:

Table 2
Current IWE and IWL Intervals

System Identification	Examination Description	Item Number	Examination Method	Period Schedules		
Examination Category E-A				**1**	**2**	**3**
Containment Liner	Accessible Surface Areas	E.1.11	GV	X	X	X
	Pressure Retaining Bolting	E.1.11	GV	X	X	X
	Moisture Barrier	E.1.30	GV	X	X	X
Examination Category E-C				**1**	**2**	**3**
Containment Liner	Visible Surfaces	E.4.11	VT-1 (Note 2)	X	X	X
	Surface Area Grid Minimum Wall Thickness Location	E.4.12	UTT	X	X	X
Examination Category E-G						
Containment Liner	Pressure Retaining Bolting	E.8.10	VT-3 (Note 1)			X
Examination Category L-A				38 yr	43 yr	48 yr
Concrete Surfaces	Concrete Surface – All Assessable Surface Area	L.1.11	GV	U1/U2	U1/U2	U1/U2
	Concrete Surface – Suspect Areas	L.1.12	GV	U1/U2	U1/U2	U1/U2
Examination Category L-B						
Tendon	Tendon	L.2.10	Per IWL-2522	U1	U2	U1
	Wire or strand	L.2.20	Per IWL-2523.2	U1	U2	U1
	Anchorage hardware and surrounding concrete	L.2.30	Detailed Visual	U1/U2	U1/U2	U1/U2
	Corrosion protection medium	L.2.40	Per IWL-2525	U1/U2	U1/U2	U1/U2
	Free water	L.2.50	Per IWL-2525	U1/U2	U1/U2	U1/U2

Item No. refers to numbers listed in ASME Code, Section XI, 2007 Edition with the 2008 Addenda Table IWE-2500-1 or Table IWL-2500-1.

Exam Method: GV - General Visual
UTT - Ultrasonic Thickness Test
VT - 3 examination method defined in ASME Code Section XI,

Paragraph IWA - 2213, "VT - 3 Examination"
VT - 1 examination method defined in ASME Code Section XI,
Paragraph IWA 2211, "VT - 1 Examination"

Notes:
1. An examination of the pressure-retaining bolted connections in item E1.1 of Table IWE-2500-1 using VT-3 examination method must be conducted once each interval per 10 CFR 50.55a(b)(2)(ix)(G). Per 10 CFR 50.55a(b)(2)(ix)(H), containment bolting that is disassembled during scheduled performance of the examinations in item E1.11 of Table IWE-2500-1 must be examined using the VT-3 method.
2. Required per 10 CFR 50.55a(b)(2)(ix)(G).

IWE Examination Category E-C, Item Nos. E4.11 and E4.12 - Containment Surfaces Requiring Augmented Examination

In Reference 5.1, the licensee stated the following:

> This category includes IWE component areas selected for augmented examination because of known existing degraded conditions. Surface areas likely to experience accelerated degradation and aging require augmented examination. In addition, interior containment surfaces that are subject to excessive wear causing a loss of protective coatings, deformation or material loss are also examined. Examination methods are detailed visual examinations (VT-1) and ultrasonic testing (UT).

IWE Examinations

Recent Liner Plate Surface Examinations:

In Reference 7.7, the licensee stated that Unit 1 examination of containment liner plates was performed during RFO U1 R37 in 2017. The licensee stated that chipping, discoloration, and rust spots were noted in the liner coating at several locations on the floor and wall liner plates. The examination results of the individual panels were reviewed and compared with the results of previous examinations and while there were some new chips and scratches in the liner coating, they were similar to those previously identified and reviewed. The licensee also stated that VT-1 examinations on the areas of recordable indications found no evidence of on-going degradation.

The licensee stated that Unit 2 visual examination of containment liner plates was performed during RFO U2 R35 in the spring of 2017. Chipping, discoloration, and rust spots were noted in the liner coating at several locations on the floor and wall liner plates. The examination results of the individual panels were reviewed and compared with the results of previous examinations, and while there are some new chips and scratches in the liner coating they were similar to those previously identified and reviewed. The licensee stated that VT-1 examinations on the areas of recordable indications found no evidence of on-going degradation.

The NRC staff finds the licensee is properly implementing the ASME Code, Section XI, Subsection IWE, program because the examination results of the individual panels were reviewed and compared with the results of previous examinations, and they were similar to those previously identified and reviewed. Therefore, the staff finds that this provides reasonable assurance that the structural integrity of the liner will be maintained if the ILRT frequency is extended to 15 years.

Moisture Barrier Examinations:

In Reference 7.1, the licensee stated that the Unit 1 containment moisture barriers were examined during RFO U1 R35 and this examination identified no areas of damaged or improperly adhered moisture barrier.

The Unit 2 containment moisture barriers were examined during RFO U2 R35 and this examination identified six areas of the moisture barrier that were damaged or not adhered to the mating surface. The licensee stated that all of the identified areas were repaired prior to startup from U2 R35.

The applicant stated that "[s]ince the entire moisture barriers were inspected, and recordable areas were repaired by corrective action, no additional, successive, or supplemental exams are required."

The NRC staff finds the licensee is properly implementing the ASME Code, Section XI, Moisture Barrier Program, since the entire moisture barrier was inspected, and recordable areas were repaired by corrective action, and no additional, successive, or supplemental exams are required, therefore, the staff finds that this provides reasonable assurance that the structural integrity of the liner will be maintained if the ILRT frequency is extended to 15 years.

IWL Examinations

In Reference 7.1, the licensee stated that inservice examinations of containment concrete Class CC components of PBNP, Unit 1, performed in conjunction with tendon surveillance on a 5-year interval, have found:

- grease leakage observed at tendon grease cans
- exposed corroded reinforcing steel with pop outs
- exposed reinforcing steel with corrosion
- minor concrete cracking observed consistent with previous recorded indications

The licensee stated that "[t]he findings noted above for Unit 1 were evaluated and determined to not be detrimental to either the structural integrity or leak tight integrity of the containment structure."

Inservice examinations of containment concrete Class CC components of PBNP, Unit 2, performed in conjunction with tendon surveillance on a 5-year interval, have found:

- grease leakage at tendon grease cans
- exposed corroded reinforcing steel with pop outs
- concrete cracking showing no change from previously recorded indications
- grease on containment dome parapet

The licensee stated that "[t]he findings noted above for Unit 2 were evaluated and determined to not be detrimental to either the structural integrity or leak tight integrity of the containment structure."

The NRC staff finds the licensee is properly implementing the ASME Code, Section XI, Subsection IWL, program, which provides reasonable assurance that the structural integrity of the concrete containment will be maintained if the ILRT frequency is extended to 15 years.

3.1.4 NEI 94-01, Revision 2, Conditions

As required by 10 CFR 50.54(o), both PBNP containments are subject to the requirements set forth in 10 CFR 50, Appendix J. Option B, of Appendix J, requires that test intervals for Type A, Type B, and Type C, testing be determined by using a performance-based approach. Currently, the PBNP 10 CFR 50, Appendix J, Containment Leakage Rate Testing Program, invokes RG 1.163 as the plan implementation document. The LAR proposes to revise the PBNP 10 CFR 50, Appendix J, Containment Leakage Rate Testing Program, by replacing this implementation document with the guidance contained in NEI 94-01, Revision 3-A, and the conditions and limitations of NEI 94-01, Revision 2-A.

By letter dated June 25, 2008 (Reference 7.10), the NRC staff published an SE with limitations and conditions, for NEI 94-01, Revision 2. In the SE, the NRC staff concluded that NEI 94-01, Revision 2, describes an acceptable approach for implementing the optional performance-based requirements of 10 CFR 50, Appendix J, and is acceptable for referencing by licensees proposing to amend their TS pertaining to containment leakage rate testing, subject to the limitations and conditions, noted in Section 4.0 of the SE. Section 4.1 of the SE establishes limitations and conditions pertaining to deterministic requirements, while Section 4.2 establishes limitations and conditions pertaining to the plant's probabilistic risk assessment (PRA) analysis. More explicitly, the SE included provisions for extending the ILRT Type A interval to a maximum of 15 years subject to the six limitations and conditions provided in the SE. The NRC staff noted in the SE that NEI 94-01, Revision 2, incorporates the regulatory positions stated in RG 1.163. The accepted version of NEI 94-01, Revision 2, was subsequently issued as Revision 2-A. NEI issued Revision 2-A to NEI TR 94-01 on November 19, 2008. With Revision 2-A, the TR was revised to incorporate the June 25, 2008, NRC final Safety Evaluation Report (SER).

The NRC staff's review of LAR Section 3.4, "NRC Limitations and Conditions for NEI 94-01," which contains the table entitled "June 25, 2008, NRC Safety Evaluation (SE) Limitations and Conditions" noted that PBNP intends to satisfy the limitations and conditions of NEI 94-01 Revision 2, Section 4.1. Accordingly, as previously noted, PBNP intends to adopt the testing methodology of ANSI/ANS 56.8-2002 in place of the methodology of ANSI/ANS 56.8-1994 (Reference 7.12).

The leakage rate testing requirements of 10 CFR 50, Appendix J, Option B (Type A, Type B, and Type C tests), and the CISI requirements mandated by 10 CFR 50.55a, together, ensure the continued leak-tight and structural integrity of both containments during their service lives.

Type B testing ensures that the leakage rate of individual containment penetration components is acceptable. Type C testing ensures that individual CIVs are essentially leak tight. In addition, aggregate Type B and Type C leakage rates support the leakage tightness of both containments by minimizing potential leakage paths.

In LAR 288, the licensee proposes that PBNP invoke NEI 94-01, Revision 3-A, along with the conditions and limitations of NEI 94-01, Revision 2-A, as the reference documents for the PBNP "Containment Leakage Rate Testing Program" in TS 5.5.15. Therefore, the licensee is also applying to extend the frequencies of the Type C performance-based test intervals beyond 60 months.

The NRC staff has found that the use of NEI TR 94-01, Revision 2-A, is acceptable for referencing by licensees proposing to amend their TS to permanently extend the ILRT surveillance interval to 15 years, provided the following applicable six conditions are satisfied; the NRC staff's evaluation of the licensee's satisfaction of those conditions follows:

Condition 1

The first Limitation/Condition of Enclosure 1 (page 24 of 38), to NextEra Letter NRC 2018-0018 is derived from Sections 3.1.1.1 and 4.1 (i.e., Attachment 1, page 19) of the NRC SE dated June 25, 2008, and stipulates that "*For calculating the Type A leakage rate, the licensee should use the definition in NEI TR 94-01, Revision 2, in lieu of that in ANSI/ANS-56.8-2002. (Refer to SE Section 3.1.1.1).*"

PBNP Response Limitation/Condition 1

In its table captioned "June 25, 2008, NRC Safety Evaluation (SE) Limitations and Conditions," in LAR Section 3.4, on Page 24 of 38, of Enclosure 1 to NextEra Letter NRC 2018-0018, the licensee stated:

> PBNP will utilize the definition in NEI 94-01 Revision 3-A, Section 5.0. This definition has remained unchanged from Revision 2-A to Revision 3-A of NEI 94-01.

Staff Assessment

Section 3.2.9, "Type A test performance criterion," of ANSI/ANS-56.8-2002 defines the "performance leakage rate" and states, in part:

> The performance criterion for a Type A test is met if the performance leakage rate is less than L_a. The performance leakage rate is equal to the sum of the measured Type A test UCL and the total as-left MNPLR of all Type B or Type C pathways isolated during performance of the Type A test.

The NRC staff's SE, Section 3.1.1.1, Enclosure, page 6, for NEI 94-01, Revision 2, states in part:

> Section 5.0 of NEI TR 94-01, Revision 2, uses a definition of "performance leakage rate" for Type A tests that is different from that of ANSI/ANS-56.8-2002. The definition contained in NEI TR 94-01, Revision 2, is more inclusive because it considers excessive leakage in the performance determination. In defining the minimum pathway leakage rate, NEI TR 94-01, Revision 2, includes the leakage rate for all Type B and Type C pathways that were in service, isolated, or not lined up in their test position prior to the performance of the Type A test. Additionally, the NEI TR 94-01, Revision 2, definition of performance leakage rate requires consideration of the leakage pathways that were isolated during performance of the test because of excessive leakage in the performance determination. The NRC staff finds this modification of the definition of "performance leakage rate" used for Type A tests to be acceptable.

Section 5.0 "Definitions" of NEI 94-01, Revision 3-A states in part:

> The performance leakage rate is calculated as the sum of the Type A upper confidence limit (UCL) and as-left minimum pathway leakage rate (MNPLR) leakage rate for all Type B and Type C pathways that were inservice, isolated, or not lined up in their test position (i.e., drained and vented to containment atmosphere) prior to performing the Type A test. In addition, leakage pathways that were isolated during performance of the test because of excessive leakage must be factored into the performance determination. The performance criterion

for Type A tests is a performance leak rate of less than $1.0L_a$.

The NRC staff reviewed the definitions of "performance leakage rate" contained in NEI 94-01, Revision 2, and Revision 3-A. The NRC staff concluded that the definitions contained in both documents are identical.

Therefore, the NRC staff concludes that PBNP will use the definition found in Section 5.0 of NEI 94-01, Revision 2 (Reference 7.9), for calculating the Type A leakage rate in the PBNP "Containment Leakage Rate Testing Program."

Based on the above review, the NRC staff finds that the licensee has adequately addressed "Condition 1."

Condition 2

The second Limitation/Condition of Enclosure 1, page 24 of 38, to NextEra Letter NRC 2018-0018, is derived from Sections 3.1.1.3 and 4.1 (i.e., Enclosure, page 19), of the NRC SE dated June 25, 2008, and stipulates that "*The licensee submits a schedule of containment inspections to be performed prior to and between Type A tests. (Refer to SE Section 3.1.1.3).*"

PBNP Response to Limitation/Condition 2

In its table captioned "June 25, 2008, NRC Safety Evaluation (SE) Limitations and Conditions," in LAR Section 3.4 of Enclosure 1 to NextEra Letter NRC 2018-0018, the licensee stated:

> Reference Section 3.2.1 and 3.2.2. General visual observations of the accessible interior and external surfaces of the containment structure shall continue to be performed in accordance with containment structural integrity test procedures to meet the requirements of the proposed revision to TS 5.5.15, the inspection requirements of ASME Code Section XI, subsection IWE and NEI 94-01, Revision 3-A, Sections 9.2.1 and 9.2.3.2.

Staff Assessment

The NRC staff's SE Section 3.1.1.3, Enclosure, page 7, for NEI 94-01, Revision, 2, states, in part:

> NEI TR 94-01, Revision 2, Section 9.2.3.2, states that: "To provide continuing supplemental means of identifying potential containment degradation, a general visual examination of accessible interior and exterior surfaces of the containment for structural deterioration that may affect the containment leak-tight integrity must be conducted prior to each Type A test and during at least three other outages before the next Type A test if the interval for the Type A test has been extended to 15 years." NEI TR 94-01, Revision 2, recommends that these inspections be performed in conjunction or coordinated with the examinations required by ASME Code, Section XI, Subsections IWE and IWL. The NRC staff finds that these visual examination provisions, which are consistent with the provisions of regulatory position C.3 of RG 1.163, are acceptable considering the longer 15-year interval. Regulatory Position C.3 of RG 1.163 recommends that such examination be performed at least two more times in the period of 10 years. The NRC staff agrees that as the Type A test interval is changed to 15 years, the schedule of visual inspections should also be revised. Section 9.2.3.2 in NEI TR

94-01, Revision 2, addresses the supplemental inspection requirements that are acceptable to the NRC staff.

Page 12 of NEI 94-01, Revision 2, and Revision 3-A, Section 9.2.3.2, "Supplemental Inspection Requirements" both read:

> To provide continuing supplemental means of identifying potential containment degradation, a general visual examination of accessible interior and exterior surfaces of the containment for structural deterioration that may affect the containment leak-tight integrity must be conducted prior to each Type A test and during at least three other outages before the next Type A test if the interval for the Type A test has been extended to 15 years. It is recommended that these inspections be performed in conjunction or coordinated with the ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWE/IWL required examinations.

Page 10 of NEI 94-01, Revision 3-A, Section 9.2.1, "Pretest Inspection and Test Methodology" states, in part:

> Prior to initiating a Type A test, a visual examination shall be conducted of accessible interior and exterior surfaces of the containment system for structural problems that may affect either the containment structure leakage integrity or the performance of the Type A test. This inspection should be a general visual inspection of accessible interior and exterior surfaces of the primary containment and components. It is recommended that these inspections be performed in conjunction or coordinated with the ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWE/IWL required examinations.

LAR Section 3.2, "Containment Inspections," indicates that the general visual examinations of the accessible surfaces of the PBNP primary containments are performed in accordance with the CISI. Specifically, the licensee indicated that "*These examinations are performed to assess the general structural condition of the containment building reinforced concrete and to satisfy the visual examination requirements of ASME Code Section XI, Subsection IWE and IWL.*"

LAR Section 3.2.1, "Containment Inservice Inspection Program," indicates that Unit 1 and Unit 2 are both in their third 10-year inspection interval, from September 2016 to September 2026, and that both units invoke the requirements of Subsections IWE and IWL, of ASME Code Section XI, 2007 Edition with the 2008 Addenda. The scope of the IWE program includes "*... the accessible pressure retaining containment surface areas including: Containment vessel liner surfaces and integral attachments, surfaces requiring augmented examination, mechanical /electrical penetrations, moisture barriers, pressure retaining bolting and Appendix J tested IWE components.*" The scope of the IWL program includes "*... surveillance of accessible concrete surface areas and the unbonded post-tensioning system, including tendons, tendon wires or strands, anchorage hardware and surrounding concrete, corrosion protection medium and testing for evidence of free water.*"

LAR "Table 4 - Current IWE/IWL Interval" details the schedule for the inspection of the IWE Containment Liner components. From Table 4 it can be seen that the 10-year interval contains three IWE periods. The IWE schedule requires a 100 percent general visual inspection of the accessible containment surface areas, pressure retaining bolting and moisture barriers during each period of each 10-year IWE interval. Based on this, the NRC staff concludes that adoption of a 15-year Type A test interval for both Unit 1 and Unit 2, will encompass at least four IWE periods during each 15-year test interval. Accordingly, consistent with NEI 94-01, Revision 2,

Section 9.2.3.2, and NEI 94-01, Revision 3-A, Section 9.2.1, there would be at least four 100 percent general visual inspections completed between two successive Type A tests performed on a 15-year test interval.

Based on its review of LAR Section 3.2, Section 3.2.1, Table 4, the NRC staff concludes that the requirements of SE, Section 3.1.1.3, for NEI 94-01, Revision 2, are satisfied.

Summary

Based on the foregoing discussion, the NRC staff concludes the licensee intends to comply with the guidance contained in NEI 94-01, Revision 3-A, Sections 9.2.1 and 9.2.3.2, and that PBNP intends to satisfy the provisions contained in NRC staff SE Section 3.1.1.3. Accordingly, the NRC staff finds that the licensee has adequately addressed "Condition 2".

Condition 3

The third Limitation/Condition of Enclosure 1, page 24 of 38, to NextEra Letter NRC 2018-0018, is derived from Sections 3.1.3 and 4.1 (i.e., Enclosure, page 19) of the NRC SE dated June 25, 2008, and stipulates that "*The licensee addresses the areas of containment structure potentially subjected to degradation. (Refer to SE Section 3.1.3).*"

PBNP Response to Limitation/Condition 3

In its table captioned "June 25, 2008, NRC Safety Evaluation (SE) Limitations and Conditions," in LAR Section 3.4 of Enclosure 1 to NextEra Letter NRC 2018-0018, the licensee stated:

> Reference Section 3.2.1 through 3.2.4. General visual observations of the accessible interior and external surfaces of the containment structure shall continue to be performed in accordance with containment structural integrity test procedures to meet the requirements of the proposed revision to TS 5.5.15, the inspection requirements of ASME Code Section XI, subsection IWE and NEI 94-01, Revision 3-A, Sections 9.2.1 and 9.2.3.2.

Staff Assessment

The NRC staff reviewed the information contained in LAR Section 3.2, "Containment Inspections."

The NRC staff's SE, Section 3.1.3, Enclosure, page 9, for NEI 94-01, Revision 2, states, in part:

> In approving for Type A tests the one-time extension from 10 years to 15 years, the NRC staff has identified areas that need to be specifically addressed during the IWE and IWL inspections including a number of containment pressure-retaining boundary components (e.g., seals and gaskets of mechanical and electrical penetrations, bolting, penetration bellows) and a number of the accessible and inaccessible areas of the containment structures (e.g., moisture barriers, steel shells, and liners backed by concrete, inaccessible areas of ice condenser containments that are potentially subject to corrosion).

General visual examinations of the accessible surfaces of containment are performed to assess the general condition of the containment surfaces. The PBNP CISI program plan for the third

10-year IWE and IWL ISI intervals was developed utilizing the ASME Code, Section XI, 2007 Edition through the 2008 Addenda, Subsections IWE and IWL and 10 CFR 50.55a, Codes and Standards. This plan applies to the containment vessel.

In particular:

a. IWE deals with Class MC pressure retaining components and their integral attachment; and Class CC metallic shell I penetration liners.

b. IWL deals with Class CC reinforced concrete and post-tensioning systems.

INACCESSIBLE AREAS/ AUGMENTED EXAMINATIONS

The programmatic requirements for Class MC application inaccessible areas as specified in 10 CFR 50.55a(b)(2)(ix)(A), are:

(1) the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas.

(2) For each inaccessible area identified, the licensee shall provide the following in the ISI Summary Report as required by IWA-6000:

i. A description of the type and estimated extent of degradation, and the conditions that led to the degradation;

ii. An evaluation of each area, and the result of the evaluation; and

iii. A description of necessary corrective actions.

In LAR Section 3.2.1, "Containment Inservice Inspection Program," the licensee identified one surface area in each unit's containment that require augmented exams:

> Units 1 and 2 Containment Horizontal Liner Plate at El. 6'-6":
>
> Access to the El. 6'-6" horizontal liner plate is achieved through seven core drilled holes through the El. 8' floor in Unit 1, and four core drilled holes through the El. 8' floor in Unit 2. These core drilled holes were installed in 1988 as a result of standing water discovered on the El. 8' of containment. They provided access to monitor the corrosion rate of the horizontal liner plate. Corrosion probes were originally installed in two core drilled holes for each unit and conductivity was measured to monitor corrosion rate. Caulking was installed as a moisture barrier at the same time to prevent water from accessing the horizontal liner plate at El. 6' 6". The moisture barriers and liners are examined in accordance with the IWE program.

In LAR Section 3.2.3, "Inaccessible Areas," the licensee stated the requirements of 10 CFR 50.55a (b)(2)(ix)(A) as identified above and stated that "*NextEra has not needed to implement new technologies to perform inspections of inaccessible areas at this time.*"

While LAR Section 2.2, "Description of Point Beach Reactor Containment," identified additional Unit 1 and Unit 2 Containment areas as being inaccessible [third paragraph page 4 of 38], none

of these inaccessible areas were identified in LAR 288 as requiring augmented examination. The NRC staff notes that this is consistent with programmatic requirement (1) of 10 CFR 50.55a(b)(2)(ix)(A).

BELLOWS

Section 2.1 of this SE for both containments states in part:

> The piping and ventilation penetrations are of the rigid welded type and are solidly anchored to the containment wall, thus eliminating the need to use expansion bellows for containment barriers inside containment.

LAR Section 3.3, "NRC Information Notices," for Information Notice 92-20 states, in part:

> The PBNP mechanical penetrations sealed with a bellows arrangement are located outside of containment and are not subjected to containment pressure. The portion of the mechanical penetrations inside containment that provide the containment pressure boundary is tested during the Type A test by removing the mechanical penetration plug outside containment to ensure full differential test pressure across the mechanical penetration weld to the liner plate (e.g., single passive barrier).
>
> Accordingly, the mechanical penetration bellows are not considered part of the containment pressure boundary. Therefore, Condition 3 pertaining to NRC staff SE, Section 3.1.3, is not applicable for bellows.

ELECTRICAL PENETRATIONS

PBNP Types B and C testing program requires testing of Type B electrical penetrations in accordance with 10 CFR 50, Appendix J, Option B, and RG 1.163. The results of the test program are used to demonstrate that proper maintenance and repairs are made on these components throughout their service life.

BOLTING

Item No. E8.10, "Bolted Connections," as listed in LAR "Table 4 - Current IWE/IWL Interval" requires the 100 percent completion of VT-3 examinations for pressure retaining bolting before the end of each CISI Interval.

MOISTURE BARRIERS

Item No. E1.30, "Moisture Barriers," as listed in LAR "Table 4 - Current IWE/IWL Interval" requires the completion of 100 percent visual examination during each of the three Periods of each CISI Interval.

CONTAINMENT LINER BACKED BY CONCRETE

Section 2.1 of this SE for both Containments states in part:

> The 1/4 in. thick liner plate is attached to the concrete by means of an angle grid system stitch welded to the liner plate and embedded in the concrete. The frequent anchoring is designed to prevent significant distortion of the liner plate

during accident conditions and to ensure that the liner maintains its leak tight integrity.

Item No. L1.11, "Concrete Surface -- All accessible surface areas," as listed in LAR "Table 4 - Current IWE/IWL Interval" requires per IWL-2510-1 a general visual examination of accessible containment concrete surface areas every 5 years. Item No. L1.12, "Concrete Surface – Suspect Areas," of the same Table requires, per the discretion of the Responsible Engineer for IWL related activities, a detailed visual examination of suspect areas that were identified during the general visual examination.

Summary

In summary, the NRC staff concludes that based on the information contained in LAR Section 3.4.2, the licensee has an established a CISI program that satisfies the intent of the issues presented in Section 3.1.3. Accordingly, the NRC staff finds that the licensee has adequately addressed "Condition 3."

Condition 4

The fourth Limitation/Condition of Enclosure 1, page 24 of 38, to NextEra Letter NRC 2018-0018, is derived from Sections 3.1.4 and 4.1 (i.e., Enclosure, page 19), of the NRC SE dated June 25, 2008, and stipulates that "*The licensee addresses any tests and inspections performed following major modifications to the containment structure, as applicable: (Refer to SE Section 3.1.4).*"

PBNP Response to Limitation/Condition 4

In its table captioned "June 25, 2008, NRC Safety Evaluation (SE) Limitations and Conditions," in LAR Section 3.4 of Enclosure 1 to NextEra Letter NRC 2018-0018, the licensee stated:

> In general, the NRC staff considers the cutting of a large hole in the containment for replacement of steam generators or reactor vessel heads, replacement of large penetrations, as major repairs or modifications to the containment structure. PBNP has performed no major repairs or modifications to the containment structure. No major repairs or modifications are planned.

Staff Assessment

The NRC staff's SE Section 3.1.4, Enclosure, page 9, for NEI 94-01, Revision 2, states, in part:

> Section 9.2.4 of NEI TR 94-01, Revision 2, states that: "Repairs and modifications that affect the containment leakage integrity require LLRT or short duration structural tests as appropriate to provide assurance of containment integrity following the modification or repair. This testing shall be performed prior to returning the containment to operation." Article IWE-5000 of the ASME Code, Section XI, Subsection IWE (up to the 2001 Edition and the 2003 Addenda), would require a Type A test after major repair or modifications to the containment. In general, the NRC staff considers the cutting of a large hole in the containment for replacement of steam generators or reactor vessel heads, replacement of large penetrations, as major repair or modifications to the containment structure.

This condition is intended to verify any major modification or maintenance repair of the containment since the last ILRT has been appropriately accompanied by either a structural

integrity test or ILRT and that any plans for such major modification also includes appropriate pressure testing.

As stated in the licensee's response to Condition 4, no major repairs or modifications have been performed to the PBNP containments. In addition, the licensee indicated that no major repairs or modifications are planned for the PBNP containment structures.

Therefore, the NRC staff concludes that the licensee has adequately addressed the issues of Section 3.1.4 and "Condition 4."

Condition 5

The fifth Limitation/Condition of Enclosure 1, page 24 of 38, to NextEra Letter NRC 2018-0018, is derived from Sections 3.1.1.2 and 4.1 (i.e., Enclosure, page 19) of the NRC SE dated June 25, 2008, and stipulates that "*The normal Type A test interval should be less than 15 years. If a licensee has to utilize the provisions of Section 9.1 or NEI TR 94-01, Revision 2, related to extending the ILRT interval beyond 15 years, the licensee must demonstrate to the NRC staff that it is an unforeseen emergent condition. (Refer to SE Section 3.1.1.2).*"

PBNP Response to Limitation/Condition 5

In its table captioned "June 25, 2008, NRC Safety Evaluation (SE) Limitations and Conditions," in LAR Section 3.4 of Enclosure 1 to NextEra Letter NRC 2018-0018, the licensee stated:

> PBNP will follow the requirements of NEI 94-01, Revision 3-A, Section 9.1. This requirement has remained unchanged from Revision 2-A to Revision 3-A of NEI 94-01. In accordance with Section 3.1.1.2 of the NRC SE dated June 25, 2008 (Reference 7.18), NextEra will also demonstrate to the NRC staff that an unforeseen emergent condition exists in the event an extension beyond the 15 year interval is required. Justification for such an extension request will be in accordance with the staff position in Regulatory Issue Summary 2008-27.

Staff Assessment

NRC staff SE, Section 3.1.1.2, Enclosure, page 6, for NEI 94-01, Revision 2, states:

> As noted above, Section 9.2.3, NEI TR 94-01, Revision 2, states, "Type A testing shall be performed during a period of reactor shutdown at a frequency of at least once per 15 years based on acceptable performance history." However, Section 9.1 states that the "required surveillance intervals for recommended Type A testing given in this section may be extended by up to 9 months to accommodate unforeseen emergent conditions but should not be used for routine scheduling and planning purposes." The NRC staff believes that extensions of the performance-based Type A test interval beyond the required 15 years should be infrequent and used only for compelling reasons. Therefore, if a licensee wants to use the provisions of Section 9.1 in TR NEI 94-01, Revision 2, the licensee will have to demonstrate to the NRC staff that an unforeseen emergent condition exists.

The licensee stated in its response that "*PBNP will follow the requirements of NEI 94-01 Revision 3-A, Section 9.1.*" The NRC staff notes that NEI 94-01, Revision 3-A, Section 9.1, "Introduction," contains the relevant passage from the NRC staff SE for NEI 94-01, Revision 2, and states, in part:

> Required surveillance intervals for recommended Type A testing given in this section may be extended by up to 9 months to accommodate unforeseen emergent conditions, but should not be used for routine scheduling and planning purposes.

Therefore, the licensee has demonstrated its understanding that any extension of the Type A test interval beyond the upper-bound performance-based limit of 15 years should be infrequent and that any requested permission (i.e., for such an extension) will demonstrate to the NRC staff that an unforeseen emergent condition exists.

Based on the above review, the NRC staff finds that the licensee has adequately addressed "Condition 5."

Condition 6

The sixth Limitation/Condition of Enclosure 1, page 25 of 38, to NextEra Letter NRC 2018-0018, is derived from Section 4.1 (i.e., Enclosure, pages 19 and 20) of the NRC SE dated June 25, 2008, and stipulates that "*For plants licensed under 10 CFR Part 52, applications requesting a permanent extension of the ILRT surveillance interval to 15 years should be deferred until after the construction and testing of containments for that design has been completed and applicants have confirmed the applicability of NEI TR 94-01, Revision 2, and [Electric Power Research Institute] EPRI No. 1009325, Revision 2, ["Risk-Impact Assessment of Extended Integrated Leak Rate Testing Intervals,"] including the use of past containment ILRT data.*"

PBNP Response to Limitation/Condition 6

In its table captioned "June 25, 2008, NRC Safety Evaluation (SE) Limitations and Conditions," in LAR Section 3.4 of Enclosure 1 to NextEra Letter NRC 2018-0018, the licensee stated:

> Not applicable. PBNP was not licensed under 10 CFR Part 52.

Staff Assessment

Condition "6" does not apply.

Summary

Based on the above evaluation of each condition, the NRC staff has determined that the licensee adequately addressed the six conditions identified in Section 4.1 of the NRC SE for NEI 94-01, Revision 2-A. Therefore, the NRC staff finds it acceptable for PBNP to adopt the "conditions and limitations" of NEI 94-01, Revision 2-A, as part of the implementation documents in PBNP TS 5.5.15, "Containment Leakage Rate Testing Program," for both Unit 1 and Unit 2.

3.1.5 NEI 94-01, Revision 3, Conditions

As required by 10 CFR 50.54(o), the PBNP containments are subject to the requirements set forth in 10 CFR Part 50, Appendix J. Option B, Appendix J, allows that test intervals for Type A, Type B, and Type C, testing be determined by using a performance-based approach. Currently, PBNP TS 5.5.15, "Containment Leakage Rate Testing Program," is implemented in accordance with the guidelines contained in RG 1.163, as modified by exceptions (i) and (ii). The licensee's

LAR proposes to revise the PBNP TS 5.5.15 by replacing Option B implementation document RG 1.163 with NEI 94-01, Revision 3-A along with the conditions and limitations of NEI 94-01, Revision 2-A, to govern the test frequencies and the grace periods for Type A, Type B, and Type C tests.

By letter dated June 8, 2012 (Reference. 7.14), the NRC staff published a SE, with limitations and conditions for NEI 94-01, Revision 3. In the SE, the NRC staff concluded that NEI 94-01, Revision 3, describes an acceptable approach for implementing the optional performance-based requirements of 10 CFR Part 50, Appendix J, and is acceptable for referencing by licensees proposing to amend their TS in regard to containment leakage rate testing, subject to the limitations and conditions identified in SE, Section 4.0, and summarized in SE, Section 5.0. The accepted version of NEI 94-01, Revision 3, was subsequently issued as Revision 3-A. NEI issued Revision 3-A to NEI TR 94-01 on July 31, 2012. With Revision 3-A, the report was revised to incorporate the June 8, 2012, NRC staff final SER.

The licensee indicated in LAR 288 that PBNP will meet the limitations and conditions of NEI 94-01, Revision 3-A, Section 4.0. Accordingly, both Unit 1 and Unit 2 will be adopting, in part, the testing criteria ANSI/ANS 56.8-2002 as part of its licensing basis. As stated in Section 2.0, "Purpose and Scope," of NEI 94-01, Revision 3-A, where technical guidance overlaps between NEI 94-01, Revision 3-A, and ANSI/ANS 56.8-2002, the guidance of NEI 94-01, Revision 3-A, takes precedence.

In the LAR, the licensee proposes to invoke NEI 94-01, Revision 3-A, as the implementation document for PBNP TS 5.5.15, "Containment Leakage Rate Testing Program," to govern its Type B and Type C LLRT programs.

In the NRC cover letter to NEI dated June 8, 2012, approving NEI TR 94-01, Revision 3, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J," the NRC staff found that NEI TR 94-01, Revision 3, is an acceptable reference for use in licensee TSs to extend Option B to 10 CFR Part 50, Appendix J, Type B test and Type C test intervals beyond 60 months, provided the following two conditions are satisfied.

Condition 1

Section 4.0 of Enclosure, page 10 of 13, Condition 1 of the NRC letter dated June 8, 2012 (Reference 7.14), stipulates that:

> NEI TR 94-01, Revision 3, is requesting that the allowable extended interval for Type C LLRTs be increased to 75 months, with a permissible extension (for non-routine emergent conditions) of nine months (84 months total). The staff is allowing the extended interval for Type C LLRTs be increased to 75 months with the requirement that a licensee's post-outage report include the margin between the Type B and Type C leakage rate summation and its regulatory limit. In addition, a corrective action plan shall be developed to restore the margin to an acceptable level. The staff is also allowing the non-routine emergent extension out to 84-months as applied to Type C valves at a site, with some exceptions that must be detailed in NEI 94-01, Revision 3. At no time shall an extension be allowed for Type C valves that are restricted categorically (e.g., BWR MSIVs), *[Boiling Water Reactor Main Steam Isolation Valves]* and those valves with a history of leakage, or any valves held to either a less than maximum interval or to the base refueling cycle interval. Only non-routine emergent conditions allow an extension to 84 months. This is Topical Report Condition 1.

Condition 1 presents three separate issues that are required to be addressed:

(1) The allowance of an extended interval for Type C LLRTs of 75 months carries the requirement that a licensee's post-outage report include the margin between the Type B and Type C leakage rate summation and its regulatory limit;

The NextEra response for TR, Condition 1, Issue (1), is reflected in LAR 288, Section 3.4.2 "June 8, 2012, NRC Safety Evaluation." In particular, Enclosure 1, page 26 of 38, to NextEra Letter NRC 2018-0018, states, in part:

> The post-outage report shall include the margin between the Type B and Type C minimum pathway leak rate summation value, as adjusted to include the estimate of applicable Type C leakage understatement, and its regulatory limit of 0.60 L_a.

(2) A corrective action plan shall be developed to restore the margin to an acceptable level;

The NextEra response for TR Condition 1, Issue (2), is reflected in LAR 288, Section 3.4.2. Specifically, Enclosure 1, page 26 of 38, to NextEra Letter NRC 2018-0018, that states in part:

> When the potential leakage understatement adjusted Type B and Type C minimum pathway leak rate total is greater than the PBNP administrative leakage summation limit of 0.50 L_a, but less than the regulatory limit of 0.60 L_a, then an analysis and determination of a corrective action plan shall be prepared to restore the leakage summation margin to less than the PBNP administrative leakage limit. The corrective action plan shall focus on those components which have contributed the most to the increase in the leakage summation value and the manner of timely corrective action (as deemed appropriate) that best focuses on the prevention of future component leakage performance issues.

and

(3) Use of the allowed 9-month extension for eligible Type C valves is only authorized for non-routine emergent conditions.

The NextEra response for TR Condition 1, Issue (3,) is reflected in LAR 288, Section 3.4.2. Specifically, Enclosure 1, page 26 of 38, to NextEra Letter NRC 2018-0018, that states, in part:

> PBNP will apply the nine [9] month grace period only to eligible Type C components and only for non-routine emergent conditions. Such occurrences will be documented in the record of tests.

Staff Assessment

The NRC staff has reviewed the requirements of NEI 94-01, Revision 3, against the NextEra responses for Issues (1), (2), and (3) of TR Condition 1. Based on this review, the NRC staff concludes that NextEra acknowledges all the requirements of Condition 1 and that the licensee has satisfactorily established its intent for PBNP to comply with these requirements.

Condition 2

Section 4.0 of Attachment 1, pages 10 and 11 of 13, Condition 2 of the NRC letter dated June 8, 2012, stipulates that:

> The basis for acceptability of extending the ILRT interval out to once per 15 years was the enhanced and robust containment inspection program and the local leakage rate testing of penetrations. Most of the containment leakage experienced has been attributed to penetration leakage and penetrations are thought to be the most likely location of most containment leakage at any time. The containment leakage condition monitoring regime involves a portion of the penetrations being tested each refueling outage, nearly all LLRT's being performed during plant outages. For the purposes of assessing and monitoring or trending overall containment leakage potential, the as-found minimum pathway leakage rates for the just tested penetrations are summed with the As-left minimum pathway leakage rates for penetrations tested during the previous 1 or 2 or even 3 refueling outages. Type C tests involve valves, which in the aggregate, will show increasing leakage potential due to normal wear and tear, some predictable and some not so predictable. Routine and appropriate maintenance may extend this increasing leakage potential. Allowing for longer intervals between LLRTs means that more leakage rate test results from farther back in time are summed with fewer just tested penetrations and that total is used to assess the current containment leakage potential. This leads to the possibility that the LLRT totals calculated understate the actual leakage potential of the penetrations. Given the required margin included with the performance criterion and the considerable extra margin most plants consistently show with their testing, any understatement of the LLRT total using a 5-year test frequency is thought to be conservatively accounted for. Extending the LLRT intervals beyond 5 years to a 75-month interval should be similarly conservative provided an estimate is made of the potential understatement and its acceptability determined as part of the trending specified in NEI TR 94-01, Revision 3, Section 12.1.
>
> When routinely scheduling any LLRT valve interval beyond 60 months and up to 75 months, the primary containment leakage rate testing program trending or monitoring must include an estimate of the amount of understatement in the Types B and C total leakage, and must be included in a licensee's post-outage report. The report must include the reasoning and determination of the acceptability of the extension, demonstrating that the LLRT totals calculated represent the actual leakage potential of the penetrations. This is Topical Report Condition 2.

Condition 2 presents two separate issues that are required to be addressed:

(1) Extending the Type C, LLRT intervals beyond 5 years to a 75-month interval should be similarly conservative provided an estimate is made of the potential understatement and its acceptability determined as part of the trending specified in NEI TR 94-01, Revision 3, Section 12.1.

The NextEra response to TR Condition 2, Issue (1), is reflected in LAR Section 3.4.2. Specifically, Enclosure 1, pages 27 of 38, to NextEra Letter NRC 2018-0018, states, in part:

> The change from a 60 months extended test interval for Type C tested components to a 75 months interval, as authorized under NEI 94-01, Revision 3-A, represents an increase of 25 percent in the local leak rate test periodicity. As such, PBNP will conservatively apply a potential leakage understatement adjustment factor of 1.25 to the as-left leakage total for each Type C component currently on the greater than 60 months (up to 75 months) extended test interval. This will result in a combined conservative Type C total for all 60 to 75 months local leak rate tests being carried forward and included whenever the total leakage summation is required to be updated (either while operating on-line or following an outage). When the potential leakage understatement adjusted leak rate total for those Type C components being tested on a greater than 60 months (up to 75 months) extended interval is summed with the non-adjusted total of those Type C components being tested at less than the 60 to 75 months interval and the total of the Type B tested components, if the minimum pathway leak rate is greater than the PBNP administrative leakage summation limit of 0.50 L_a, but less than the regulatory limit of 0.60 L_a, then an analysis and corrective action plan shall be prepared to restore the leakage summation value to less than the administrative leakage limit. The corrective action plan shall focus on those components that have contributed the most to the increase in the leakage summation value and the manner of timely corrective action (as deemed appropriate) that best focuses on the prevention of future component leakage performance issues.

(2) When routinely scheduling any LLRT valve interval beyond 60 months and up to 75 months, the primary containment leakage rate testing program trending or monitoring must include an estimate of the amount of understatement in the Type B and C total, and must be included in a licensee's post-outage report. The report must include the reasoning and determination of the acceptability of the extension, demonstrating that the LLRT totals calculated represent the actual leakage potential of the penetrations.

The NextEra response for TR Condition 2, Issue (2), is reflected in LAR 288 Section 3.4.2. Specifically, Enclosure 1, pages 27 and 28 of 38, to NextEra Letter NRC 2018-0018, states, in part:

> If the potential leakage understatement adjusted leak rate MNPLR is less than the PBNP administrative leakage summation limit of 0.50 L_a, then the acceptability of the greater than a 60-month test interval up to the 75-month LLRT extension for all affected Type C components has been adequately demonstrated and the calculated local leak rate total represents the actual leakage potential of the penetrations.
>
> In addition to Condition 1, ISSUES 1 and 2, which deal with the MNPLR Types B and C summation margin, NEI 94-01, Revision 3-A, also has a margin-related requirement as contained in Section 12.1, "Report Requirements."
>
> > A post-outage report shall be prepared presenting results of the previous cycle's Type B and Type C tests, and Type A, Type B and Type C tests, if performed during that outage. The technical contents of the report are generally described in ANSI/ANS-56.8-2002 and shall be available on-site for NRC review. The report shall show that the applicable performance criteria are met, and serve as a record that continuing performance is acceptable. The report shall also include the combined Type B and Type

C leakage summation, and the margin between the Type B and Type C leakage rate summation and its regulatory limit. Adverse trends in the Type B and Type C leakage rate summation shall be identified in the report and a corrective action plan developed to restore the margin to an acceptable level.

In the event an adverse trend in the potential leakage understatement adjusted Type B and Type C summation is identified, an analysis and a corrective action plan shall be prepared to restore the margin to an acceptable level thereby eliminating the adverse trend. The corrective action plan shall focus on those components that have contributed the most to the adverse trend in the leakage summation value.

An adverse trend is defined as three consecutive increases in the Type B and Type C minimum pathway leak rate summation value adjusted to include the estimate of applicable Type C leakage understatement, as expressed in terms of L_a.

Staff Assessment

The NRC staff has reviewed the requirements of NEI 94-01, Revision 3, against the NextEra responses to Issues (1) and (2) of TR Condition 2. Based on this review, the NRC staff concludes that NextEra acknowledges all the requirements of Condition 2 and the licensee has satisfactorily established its intent for PBNP to comply with these requirements.

Summary

Based on the above evaluation of each condition, the NRC staff concludes that the licensee has adequately addressed both conditions in Section 4.0 of the NRC SE for NEI 94-01, Revision 3-A. Therefore, the NRC staff finds it acceptable for PBNP to adopt NEI 94-01, Revision 3-A, as the implementation document in TS 5.5.15, "Containment Leakage Rate Testing Program," for both Unit 1 and Unit 2.

3.2 PRA Evaluation

3.2.1 Background

Section 9.2.3.1, "General Requirements for ILRT Interval Extensions beyond Ten Years," of NEI 94-01, Revision 3-A (Reference 7.13), "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," states that plant-specific confirmatory analyses are required when extending the Type A ILRT interval beyond 10 years. Section 9.2.3.4, "Plant-Specific Confirmatory Analyses," of NEI 94-01 states that the assessment should be performed using the approach and methodology described in EPRI, TR 10182431[1], "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals." The analysis is to be performed by the licensee and retained in the plant documentation and records as part of the basis for extending the ILRT interval.

In the SER dated June 25, 2008 (Reference 7.10), the NRC staff found the methodology in NEI 94-01, Revision 2, and EPRI TR-1009325, Revision 2, acceptable for referencing by licensees

[1] EPRI TR-1018243, is also identified as EPRI TR-1009325, Revision 2-A. This report is publicly available and can be found at www.epri.com by typing "1018243" in the search field box.

proposing to amend their TSs to permanently extend the ILRT interval to 15 years provided certain conditions are satisfied. These conditions set forth in Section 4.2 of the SER for EPRI TR-1009325, Revision 2, stipulate that:

1. The licensee submit documentation indicating that the technical adequacy of their Probabilistic Risk Assessment (PRA) is consistent with the requirements of Regulatory Guide (RG) 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," relevant to the ILRT extension application. Additional application specific guidance on the technical adequacy of a PRA used to extend ILRT intervals is provided in the SER for EPRI TR-1009325, Revision 2.

2. The licensee submits documentation indicating that the estimated risk increase associated with permanently extending the ILRT surveillance interval to 15 years is small and consistent with the clarification provided in Section 3.2.4.6[2] of the SER for EPRI TR-1009325, Revision 2.

3. The methodology in EPRI TR-1009325, Revision 2, is acceptable provided the average leak rate for the pre-existing containment large leak accident case (i.e., accident case 3b) used by licensees is assigned a value of 100 times the maximum allowable leakage rate (La) instead of 35 La.

4. A license amendment request (LAR) is required in instances where containment over-pressure is relied upon for emergency core cooling system (ECCS) performance.

3.2.2 Plant-Specific Risk Evaluation

The licensee performed a risk impact assessment for extending the Type A containment ILRT interval to once in 15 years in Enclosure 4 to the LAR submitted March 30, 2018 (Reference 7.1), and in response to NRC requests for additional information (RAIs) in a letter dated September 27, 2018 (Reference 7.20). The licensee clarified that no portable FLEX mitigating strategies were incorporated into the PRA models used in this LAR. The only FLEX equipment that is included in the PRA models is the permanently installed plant equipment, specifically the reactor coolant pump seals and the auxiliary feedwater cross-tie capability. These modifications were previously credited in Amendments 256 and 260, "Transition to a Risk-Informed, Performance Based Fire Protection Program in Accordance with 10 CFR 50.48(c)." The licensee clarified that by crediting additional FLEX mitigating strategies they would have increased their capabilities to respond to an accident, so by not crediting them in this LAR, CDF, and LERF values are conservative.

In Section 3.5.1 of Enclosure 1 and Section 1.1 of Enclosure 4 to the LAR, the licensee stated that the plant-specific risk assessment follows the guidance in NEI 94-01, Revision 3-A (Reference 7.13); the methodology described in EPRI TR-1018243 (also identified as EPRI TR-1009325, Revision 2-A), and the NRC regulatory guidance outlined in RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis." Additionally, the licensee used the methodology from Calvert Cliffs Nuclear Power Plant (Reference 7.17) to assess the risk from undetected containment leaks due to steel liner corrosion.

[2] Section 4.2 of the SER for EPRI TR-1009325, Revision 2, indicates that the clarification regarding small increases in risk is provided in Section 3.2.4.5; however, the clarification is actually provided in Section 3.2.4.6.

The licensee addressed each of the four conditions for the use of EPRI TR-1009325, Revision 2, which are listed in Section 4.2 of the NRC SER. A summary of how each condition is met is provided in the Sections 3.2.3 to 3.2.6 below.

3.2.3 PRA Quality

The first condition in Section 4.2 of the SER for EPRI TR-1009325, Revision 2, stipulates that the licensee submit documentation indicating that the technical adequacy of its PRA is consistent with the requirements of RG 1.200 relevant to the ILRT extension application.

Consistent with the information provided in Regulatory Issue Summary (RIS) 2007-06 (Reference 7.18), "Regulatory Guide 1.200 Implementation," the NRC staff will use Revision 2 of RG 1.200 (Reference 7.19) to assess technical adequacy of the PRA used to support risk-informed applications received after March 2010. In Section 3.2.4.1 of the SER for NEI 94-01, Revision 2, and EPRI TR-1009325, Revision 2, the NRC staff stated that Capability Category (CC) I of the ASME Code PRA Standard shall be applied as the standard for assessing PRA quality for ILRT extension applications, since approximate values of CDF and LERF and their distribution among release categories are sufficient to support the evaluation of changes to ILRT frequencies.

As discussed in Section 3.5.2 of Enclosure 1, and Section 3.0 and Appendix A1 of Enclosure 4 of the LAR, the PBNP risk assessment performed to support the ILRT application uses the current PBNP Level 1 and Level 2 internal events PRA (IEPRA) model of record, which the licensee completed in November 2010. The IEPRA also includes internal flooding hazards. In Appendix A1 of Enclosure 4 of the LAR, the licensee describes the process used for controlling the model and for ensuring that the model reflects the as-built and as-operated plant configuration. The licensee has a process for continued PRA maintenance and update, including procedures for regularly scheduled and interim PRA model updates and for tracking issues identified as potentially affecting the PRA model. The licensee performed a review of the plant modifications and changes and concluded that there are no plant changes that have not yet been incorporated in the PRA model that would affect this application.

The licensee stated that the PBNP IEPRA underwent a full-scope peer review in 2010 against the ASME/ANS PRA Standard, RA-Sa-2009, and the clarifications of RG 1.200, Revision 2, consistent with NRC RIS 2007-06 (Reference 7.18).

The licensee stated that based on the full-scope peer reviews and subsequent focused-scope peer reviews, 80 "Finding Level" Facts and Observations (F&Os) remained open. The licensee submitted these 80 F&Os for independent peer review and F&O closure. As a result of the independent F&O review, 24 F&Os remain open. These findings were provided to the NRC as part of the NFPA 805 and surveillance frequency control program (SFCP) applications with application-specific dispositions. The NRC staff reviewed these F&Os and the associated dispositions and determined that they have no impact on the ILRT application.

In Section 3.2.4.2 of the SER for NEI 94-01, Revision 2, and EPRI TR-1009325, Revision 2, the NRC staff stated that:

> Although the emphasis of the quantitative evaluation is on the risk impact from internal events, the guidance in EPRI Report No. 1009325, Revision 2, Section 4.2.7, "External Events," states that: "Where possible, the analysis should include a quantitative assessment of the contribution of external events (e.g., fire and seismic) in the risk impact assessment for extended ILRT intervals." This section also states that: "If the external event analysis is not of sufficient quality or detail to directly apply the methodology provided in this document [(i.e., EPRI Report No. 1009325, Revision 2)],

the quality or detail will be increased or a suitable estimate of the risk impact from the external events should be performed." This assessment can be taken from existing, previously submitted and approved analyses or other alternate method of assessing an order of magnitude estimate for contribution of the external event to the impact of the changed interval.

Therefore, the NRC staff's review of the contribution of external events for this application is framed by the context that an order of magnitude estimate for the corresponding risk contribution is sufficient. The licensee performed an analysis of the impact of external events in Section 6.3 of Enclosure 4 of the LAR. The licensee's analysis reflected the contribution from internal flooding, fire, seismic, and other external events. Section 4.2.1 states that both the fire and internal flooding models are peer reviewed against the requirements in the PRA Standard and RG 1.200, Revision 2, and are discussed in Section 6.3.1, "External Events and Internal Flooding Contribution – Qualitative Insights" of Enclosure 4. The seismic and other external events results are also discussed in these sections and are included in the quantitative evaluation with a qualitative assessment to discuss the impact.

The licensee stated that the seismic risk is derived from the seismic margin analysis (SMA) performed for the individual plant examination of external events (IPEEE). A discussion is provided on the seismic contribution to at-power CDF and at-power LERF for both units. A conservative SMA estimate was used for quantifying the contribution to LERF. The licensee determined that the proposed extension of the ILRT interval does not impact the frequency of any seismic initiating event or the reliability of active equipment used in seismic initiating event sequences. The licensee also performed a seismic risk sensitivity evaluation by assuming a seismic-induced CDF of 1.1E-5/yr [year], which is based on the bounding "weakest link model" described in Table D-1 of Appendix D to the NRC Safety/Risk Assessment for Generic Issue 199 (GI-199), "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants." This sensitivity evaluation showed that the delta LERF is relatively insensitive to an increase in seismic risk. Based on this sensitivity study, the licensee determined that the baseline quantitative seismic CDF and LERF contributions were appropriate for use in the delta LERF impact of the ILRT Type A test interval extension.

For the "other external events" category, the licensee included external flooding, tornado, high winds, transportation and near-by industrial facility hazards, turbine missile, heavy load drop, aircraft crash, etc. Based on the low probability of occurrence and plant design features, these external events screened out. However, the licensee used an order of magnitude estimate for the CDF and LERF contributions to CDF and LERF from their IPEEE screening values in their quantitative evaluation. The licensee's proposed extension of the ILRT test interval does not impact the initiating events frequencies of the other external events or the reliability of active components needed to mitigate these events.

Based on its review of the above information, the NRC staff finds the licensee's analysis of the impact of external events is acceptable for the ILRT application. Furthermore, the licensee has evaluated its internal events PRA against the current PRA standard and Revision 2 of RG 1.200. The NRC staff finds that the licensee has addressed the relevant findings and gaps from the peer reviews and that they have no impact on the results of this application. Therefore, the NRC staff concludes that the internal events PRA model used by the licensee is of sufficient quality to support the evaluation of changes to ILRT frequencies. Accordingly, the first condition is met.

3.2.4 Estimated Risk Increase

The second condition stipulates that the licensee submit documentation indicating that the estimated risk increase associated with permanently extending the ILRT interval to 15 years is small, and consistent with the guidance in RG 1.174 and the clarification provided in Section

3.2.4-5 of the NRC SER for NEI 94-01, Revision 2, and EPRI TR-1009325, Revision 2. Specifically, a small increase in population dose should be defined as an increase in population dose of less than or equal to either 1.0 person-rem per year or 1 percent of the total population dose, whichever is less restrictive. In addition, a small increase in conditional containment failure probability (CCFP) should be defined as a value marginally greater than that accepted in previous one-time 15-year ILRT extension requests. This would require that the increase in CCFP be less than or equal to 1.5 percentage points. Additionally, for plants that rely on containment over-pressure for net positive suction head (NPSH) for emergency core cooling system (ECCS) injection, both CDF and LERF were evaluated and compared with the risk acceptance guidelines in RG 1.174. As discussed in Section 3.2.4 of this SE, PBNP, Units 1 and 2, do not rely on containment overpressure for ECCS performance. Thus, the associated risk metrics include LERF, population dose, and CCFP.

The licensee reported the results of the plant-specific risk assessment in Section 3.5.3 of Enclosure 1 and Section 7.0 of Enclosure 4 to the LAR. Details of the risk assessment are provided in Enclosure 4. The reported risk impacts are based on a change in the Type A containment ILRT frequency from three tests in 10 years (the test frequency under 10 CFR Part 50 Appendix J, Option A) to one test in 15 years and also account for the risk from undetected containment leaks due to steel liner corrosion. The following conclusions can be drawn from the licensee's analysis associated with extending the Type A ILRT frequency:

1. The reported increase in LERF for internal events is 4.68E-08/yr for Unit 1 and 4.67E 08/yr for Unit 2. The increase in LERF for combined internal and external events is 6.58E-07/yr for Unit 1 and 7.48E-07/yr for Unit 2. The risk contribution from external events includes the effects of internal floods, internal fires, seismic events, and other external events as discussed in Section 3.2.1 of this Safety Evaluation. These changes in risk are considered to be "small" (i.e., between 1E-06/yr and 1E 07/year) per the acceptance guidelines in RG 1.174. An assessment of total baseline LERF is required to show that the total LERF is less than 1E-05/yr. The licensee estimated the total LERF for internal and external events as 3.0E-06/yr for Unit 1 and 3.2E-06/yr for Unit 2. The total LERF for both units is below the acceptance guideline of 1E-05/year in RG 1.174 for a "small" change.

2. The reported change in Type A ILRT frequency from three in 10 years to once in 15 years results in a calculated increase in the total population dose for both units of 2.88E-02 person-rem/year from internal events. As reported in Section 7.0 of Attachment 4 of the LAR, this estimate increases to 0.405 person-rem/year for Unit 1 and 0.461 person-rem/year for Unit 2 when both internal and external events are considered. The reported increase in total population dose is below the acceptance criteria provided in EPRI TR-1009325, Revision 2-A, and defined in Section 3.2.4.6 of the NRC SER for NEI 94-01, Revision 2. Thus, the increase in the total integrated plant risk for the proposed change is considered small and supportive of the proposed change.

3. The increase in CCFP due to the change in test frequency from three in 10 years to once in 15 years for both units is 0.92 percent. This value is below the acceptance guidelines in Section 3.2.4.6 of the NRC SER for NEI 94-01, Revision 2 and supportive of the proposed change.

Based on the risk assessment results, the NRC staff concludes that the increase in LERF is small and consistent with the acceptance guidelines of RG 1.174, and the increase in the total population dose and the magnitude of the change in the CCFP for the proposed change are small. The defense-in-depth philosophy is maintained as the independence of barriers will not

be degraded as a result of the requested change, and the use of the three quantitative risk metrics collectively ensures that the balance between prevention of core damage, prevention of containment failure, and consequence mitigation is preserved. Accordingly, the second condition is met.

3.2.5 Leak Rate for the Large Pre-Existing Containment Leak Rate Case

The third condition stipulates that in order to make the methodology in EPRI TR-1009325, Revision 2, acceptable, the average leak rate for the pre-existing containment large leak rate accident case (i.e., accident case 3b) used by the licensees shall be 100 L_a instead of 35 L_a. As noted by the licensee in Section 3.5.1 of Enclosure 1 to the LAR, the methodology in EPRI TR-1009325, Revision 2-A, incorporated the use of 100 L_a as the average leak rate for the pre-existing containment large leakage rate accident case (accident case 3b), and this value has been used in the PBNP plant-specific risk assessment. Accordingly, the third condition is met.

3.2.6 Applicability if Containment Overpressure is Credited for ECCS Performance

The fourth condition stipulates that in instances where containment overpressure is relied upon for ECCS performance, a LAR is required to be submitted. In Section 3.5.1 of Enclosure 1 of the LAR, the licensee stated that containment overpressure is not relied upon for ECCS performance at PBNP. Accordingly, the fourth condition is not applicable.

3.3 Overall Evaluation of the Proposed Extension of ILRT and LLRT Test Intervals

The NRC staff reviewed the Type A, Type B, and Type C, leakage test results related to the licensee's proposal to extend 10 CFR 50, Appendix J, test intervals.

The ILRT results provided in the LAR "Unit 1" table contained in LAR Section 3.1.1, "Type A Testing," indicate that the previous two consecutive Type A tests for Unit 1 were successful with containment performance leakage rates less than the maximum allowable (i.e., 1.0 L_a at P_a) contained in the leakage rate acceptance criteria of TS 5.5.15.a. Therefore, the NRC staff finds that the performance history of the Unit 1 Type A tests supports extending the current ILRT interval on a permanent basis to 15 years as permitted by NEI 94-01, Revision 3-A, and the conditions and limitations of NEI 94-01, Revision 2-A.

Similarly, the ILRT results provided in the LAR "Unit 2" table contained in LAR Section 3.1.1, "Type A Testing," indicate that the previous two consecutive Type A tests for Unit 2 were successful with containment performance leakage rates less than the maximum allowable (i.e., 1.0 L_a at P_a) contained in the leakage rate acceptance criteria of TS 5.5.15.a. Therefore, the NRC staff finds that the performance history of the Unit 2 Type A tests supports extending the current ILRT interval on a permanent basis to 15 years as permitted by NEI 94-01, Revision 3-A, and the conditions and limitations of NEI 94-01, Revision 2-A.

The NRC staff reviewed the Unit 1 "As-Found Min. Path" and "As-Left Max. Path" local leak rates listed in the Table entitled "Point Beach Unit 1 Type Band C Leakage Rate Summation History" contained in LAR Section 3.1.2, "Type B and C Testing." The NRC staff notes that the results of the "As-Found Min. Path" and "As-Left Max. Path" for all the recent (i.e., since refueling outage U1R31 in 2008) Type B and C tests are substantially less than the Type B and Type C test TS limit of ≤ 0.60 L_a contained in TS 5.5.15.d.2. The NRC staff reviewed the corrective action taken, as identified in LAR Section 3.1.2, for the CIVs associated with Penetration 1P-6 (i.e., 1WL-1721). The CIVs associated with 1P-6 failed the PBNP Type C LLRT program "Limit" during refueling outage U1R37 in 2017. Based on that review, the NRC staff has concluded that the licensee had taken adequate corrective action for the failed Unit 1 LLRT.

The NRC staff reviewed the Unit 2 "As-Found Min. Path" and "As-Left Max. Path" local leak rates listed in the Table entitled "Point Beach Unit 2 Type Band C Leakage Rate Summation History" contained in LAR Section 3.1.2, "Type B and C Testing." The NRC staff notes that the results of the "As-Found Min. Path" and "As-Left Max. Path" for all the recent (i.e., since refueling outage U2R29 in 2008) Type B and C tests are substantially less than the Type B and Type C test TS limit of $\leq 0.60\ L_a$ contained in TS 5.5.15.d.2. The NRC staff reviewed the corrective actions taken as identified in LAR Section 3.1.2, for the CIVs associated with the four local leak rate test failures in the past 36 months. Based on that review, the NRC staff has concluded that the licensee had taken adequate corrective action for the failed Unit 2 LLRTs.

Accordingly, the NRC staff finds that the licensee is effectively implementing the PBNP Type B and Type C performance-based leakage rate test programs as required by 10 CFR Part 50, Appendix J, Option B. Therefore, the NRC staff finds that the performance history of the licensee's Type B, and Type C tests supports extending the current Type C test interval to 75 months as permitted by NEI 94-01, Revision 3-A, for PBNP.

3.4 Overall Summary

In LAR 288, the licensee proposed to extend the PBNP current performance-based Type A test interval to no longer than 15 years by adopting NEI 94-01, Revision 3-A and the conditions and limitations of NEI 94-01, Revision 2-A, as the implementation documents in TS 5.5.15. This change would allow NextEra to conduct the next Unit 1 Type A test no later than November 2026, in lieu of the current requirement of no later than November 2021. Similarly, this change would allow NextEra to conduct the next Unit 2 Type A test no later than April 2026, in lieu of the current requirement of no later than April 2021.

The NRC staff has determined that the licensee's containment inspection programs support an extension of the ILRT frequency as requested in the licensee's submittal of March 30, 2018. The NRC staff finds that there is reasonable assurance that the structural integrity of the PBNP, Units 1 and 2, primary containment will continue to be monitored and maintained with the performance-based Type A test interval extended up to one test in 15 years without undue risk to public health and safety because: (1) the licensee has adequately implemented its CISI program to periodically examine, monitor, and manage the condition of its containment structure; and (2) the results of past containment concrete and liner visual inspections demonstrate acceptable performance of the containment and demonstrate that the structural integrity of the containment structure is adequate.

Consistent with the guidance in NEI 94-01, Revision 3-A, and the conditions and limitations of NEI 94-01, Revision 2-A, the licensee justified the proposed change by demonstrating adequate performance of the PBNP Containments based on: (a) plant-specific containment leakage testing program results; (b) CISI results; and (c) a plant-specific risk assessment.

Based on the NRC staff's review of the licensee's submittal of March 30, 2018, as supplemented by the information contained in the RAI response dated November 16, 2018, and the regulatory and technical evaluations above, the NRC staff finds there is reasonable assurance that the licensee satisfies the NRC conditions required to adopt NEI 94-01, Revision 3-A, and the conditions and limitations specified in NEI 94-01, Revision 2-A, as the 10 CFR Part 50 Appendix J, Option B, as the implementation documents for both PBNP, Unit 1 and Unit 2.

The NRC staff also finds that the licensee has adequately implemented its Containment Leakage Rate Testing Program (i.e., Types A, B, and C leakage tests), for the PBNP Containments. The results of past ILRTs and recent LLRTs demonstrate acceptable

performance of the PBNP Containments and demonstrate that the structural and leak-tight integrity of the containment structures are being adequately maintained. The NRC staff also finds that the structural and leak-tight integrity of the PBNP Containments will continue to be monitored and maintained if PBNP adopts NEI 94-01, Revision 3-A, and the conditions and limitations specified in NEI 94-01, Revision 2-A, as the 10 CFR Part 50 Appendix J, Option B, implementation documents for both Unit 1 and Unit 2. Accordingly, if the current Type A test intervals are extended to 15 years and if the current Type C test intervals for qualifying CIVs are extended to 75 months, the NRC staff has determined that there is reasonable assurance that the structural and leak-tight integrity for the PBNP Containments will continue to be maintained, without undue risk to public health and safety.

The NRC staff concludes that it is acceptable for PBNP to:

(i) revise TS 5.5.15, "Containment Leakage Rate Testing Program," to adopt NEI 94-01 3-A, and the conditions and limitations specified in NEI 94-01, Revision 2-A, as the 10 CFR Part 50 Appendix J, Option B, implementation documents;

(ii) delete the two existing historical exceptions (i) and (ii) associated with TS 5.5.15;

(iii) extend on a permanent basis the Type A test intervals up to 15 years; and

(iv) extend the Type C test intervals for qualifying CIVs up to 75 months.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Wisconsin State official was notified of the proposed issuance of the amendments on March 7, 2019. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or change a surveillance requirement. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluent that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously published a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding (83 FR 28461). Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

7.1 NextEra Energy Point Beach, LLC Letter (Serial No. NRC 2018-0018) to NRC dated March 30, 2018; "License Amendment Request 288, Request to Extend Containment Leakage Rate Test Frequency" NRC Docket Nos. 50-266 and 50-301; Renewed Facility Operating License Nos. DPR-24 and DPR-27; (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18092A239).

7.2 NRC Safety Evaluation, "Amendment Nos. 169 and 173 to Facility Operating License Nos. DPR-24 and DPR-27 - Point Beach Nuclear Plant, Unit Nos. 1 and 2 (TAC Nos. M95668 and M95669)," dated October 9, 1996 and November 13, 1996 (FRN ADAMS Accession No. 021970406 – ADAMS Legacy Library Accession Nos. 9610170271, 9610170267, 9610170254, 9611180088, and 9611180082).

7.3 Letter from B. Wetzel (NRC) to M. Reddemann (Nuclear Management Company, LLC), Point Beach Nuclear Power Plant, Units 1 And 2 - Issuance of Amendments Re: The Conversion to Improved Technical Specifications (TAC Nos. MA7186 and MA7187) dated August 8, 2001. (ADAMS Accession No. ML012250504).

7.4 U.S. Nuclear Regulatory Commission, Safety Evaluation, AC Nos. 63152 and 63153, "Containment Liner Leak Chase Channel Venting," September 18, 1989 (ADAMS Legacy Library Accession Nos. 8909270236 and 8910020122).

7.5 Letter from NRC (J. Cushing) to FPL Energy Point Beach, LLC (J. H. McCarthy), Point Beach Nuclear Plant, Units 1 And 2 - Issuance of Amendments Re: Extension of Appendix J, Type A, Integrated Leakage Rate Test Interval at Point Beach Units 1 and 2 (TAC Nos. MD7013 AND MD7014), dated February 26, 2008 (ADAMS Accession No. ML080380356).

7.6 NEI 94-01, Revision 2-A, November 19, 2008, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," (ADAMS Accession No. ML100620847).

7.7 NRC RG 1.163, dated September 1995, "Performance-Based Containment Leak-Test program," (ADAMS Accession No. ML003740058).

7.8 NEI 94-01, Revision 0, dated July 21, 1995 "Industry Guideline for Implementing Performance Based Option of 10 CFR Part 50, Appendix J" (ADAMS Accession No. ML11327A025).

7.9 Nuclear Energy Institute 94-01, Revision 2, dated August 31, 2007, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" and Electric Power Research Institute Report No. 1009325, Revision 2, August 2007, "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals." (ADAMS Accession No. ML072970206).

7.10 NRC Staff SE, dated June 25, 2008, "Final Safety Evaluation for Nuclear Energy Institute (NEI) Topical Report (TR) 94-01, Revision 2, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" and Electric Power Research Institute (EPRI) Report No. 1009325, Revision 2, August 2007, "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals" (TAC No. MC9663)" (ADAMS Accession No. ML081140105).

7.11 ANSI/ANS-56.8-2002, Reaffirmed August 9, 2011, "Containment System Leakage Testing Requirements."

7.12 ANSI/ANS-56.8-1994, Approved August 4, 1994, "Containment System Leakage Testing Requirements."

7.13 NEI 94-01, Revision 3-A, dated July 2012, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" (ADAMS Accession No. ML122210254).

7.14 Letter from S. Bahadur (NRC) to B. Bradley (NEI), dated June 8, 2012, "Final Safety Evaluation of Nuclear Energy Institute (NEI) Report 94-01, Revision 3, Industry Guideline for Implementing Performance- Based Option of 10 CFR Part 50, Appendix J (TAC No. ME2164)," (ADAMS Accession No. ML121030286).

7.15 NRC Safety Evaluation, "Point Beach Nuclear Plant (PBNP), Units 1 and 2 - Issuance of License Amendments & a Correction Letter Regarding Use of Alternate Source Term (TAC Nos. ME0219 and ME0220)," dated April 14, 2011 and May 4, 2011 (ADAMS Accession Nos. ML110240054 and ML111220078).

7.16 NextEra Energy Point Beach, LLC Letter (Serial No. NRC 2018-0050) to NRC dated November 16, 2018; "Response to Request for Additional Information Regarding License Amendment Request 288, Request to Extend Containment Leakage Rate Test Frequency" (ADAMS Accession No. ML18320A062).

7.17 Calvert Cliffs Nuclear Power Plant Unit No. 1; Docket No. 50-317 – March 27, 2002, Response to Request for Additional Information Concerning the License Amendment Request for a One-Time Integrated Leakage Rate Test Extension (ADAMS Accession No. ML020920100).

7.18 NRC Regulatory Issue Summary 2007-06 Regulatory Guide 1.200 Implementation, dated March 22, 2007 (ADAMS Accession No. ML070650428).

7.19 Regulatory Guide 1.200, Revision 2, dated March 2009, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities" (ADAMS Accession No. ML090410014).

7.20 Email from Mahesh Chawla to Eric Schultz, dated September 27, 2018 – DRAFT Request for Additional Information - License Amendment Request 288 - Request to Extend Containment Leakage Rate Test Frequency - EPID L-2018-LLA-0097 (ADAMS Accession No. ML18270A248).

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