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

February 4, 2015

Mr. Dean Curtland, Site Vice President
c/o Michael Ossing
Seabrook Station
NextEra Energy Seabrook, LLC
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT REGARDING THE FIXED INCORE DETECTOR SYSTEM ANALYSIS (TAC NO. MF2751)

Dear Mr. Curtland:

The Commission has issued the enclosed Amendment No. 143 to Facility Operating License No. NPF-86 for the Seabrook Station, Unit No. 1 (Seabrook). This amendment consists of changes to the facility technical specifications (TSs) in response to your application dated September 10, 2013, as supplemented by letters dated March 12, 2014, June 12, 2014, December 11, 2014, and January 8, 2015.

The amendment allows a change in the Seabrook TSs to allow use of In-Core Instrumentation manufactured by AREVA by modifying TS 6.8.1.6.b, "Core Operating Limits Report," by adding AREVA Licensing Report ANP-3243P, "Seabrook Station Unit 1 Fixed Incore Detector System (FIDS) Analysis Supplement to YAEC-1855P A," which supplements and modifies the previously-approved methodology in YAEC-1855PA, "Seabrook Station Unit 1 FIDS Analysis," October, 1992. The amendment also modifies the surveillance requirements associated with the heat flux hot channel factor and nuclear enthalpy rise hot channel factor to include revised uncertainty values when measurements are obtained using the FIDS.

Enclosure 3 transmitted herewith contains sensitive unclassified information
When separated from Enclosure 3, this document is decontrolled.

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

Sincerely,

John G. Lamb, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosures:
1. Amendment No. 143 to NPF-86
2. Non-Proprietary Safety Evaluation
3. Proprietary Safety Evaluation

cc w/encls 1 & 2: Distribution via Listserv

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

NEXTERA ENERGY SEABROOK, LLC, ET AL.*

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 143
License No. NPF-86

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

   A. The application for amendment filed by NextEra Energy Seabrook, LLC, et al., (the licensee) dated September 10, 2013, as supplemented by letters dated March 12, 2014, June 12, 2014, December 11, 2014, and January 8, 2015, 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.

*NextEra Energy Seabrook, LLC is authorized to act as agent for the: Hudson Light & Power Department, Massachusetts Municipal Wholesale Electric Company, and Taunton Municipal Light Plant and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraphs 2.C.(2) and 2.G of Facility Operating License No. NPF-86 are hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 143, and the Environmental Protection Plan contained in Appendix B are incorporated into the Facility License No. NPF-86. NextEra Energy Seabrook, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

G Fixed Incore Detector System Analysis

If the methodology described in Appendix B of ANP-3243P, Revision 1, "Seabrook Station, Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," is utilized in any plant surveillance then that licensee must notify the NRC by letter of that plant's conditions and results of that surveillance.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Meena Khanna, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and
Technical Specifications

Date of Issuance: February 4, 2015

ATTACHMENT TO LICENSE AMENDMENT NO. 143

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

Replace the following page of Facility Operating License No. NPF-86 with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove	Insert
3	3
6	6

Replace the following pages of Appendix A, Technical Specifications, with the attached revised pages as indicated. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

Remove	Insert
3/4 2-6	3/4 2-6
3/4 2-6b	3/4 2-6b
6-19	6-19

(4) NextEra Energy Seabrook, LLC, pursuant to the Act and 10 CFR 30, 40, and 70, to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(5) NextEra Energy Seabrook, LLC, pursuant to the Act and 10 CFR 30, 40, and 70, 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;

(6) NextEra Energy Seabrook, LLC, pursuant to the Act and 10 CFR 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility authorized herein; and

(7) DELETED

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I 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; is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

NextEra Energy Seabrook, LLC, is authorized to operate the facility at reactor core power levels not in excess of 3648 megawatts thermal (100% of rated power).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 143*, and the Environmental Protection Plan contained in Appendix B are incorporated into the Facility License No. NPF-86. NextEra Energy Seabrook, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) License Transfer to FPL Energy Seabrook, LLC**

a. On the closing date(s) of the transfer of any ownership interests in Seabrook Station covered by the Order approving the transfer, FPL Energy Seabrook, LLC**, shall obtain from each respective transferring owner all of the accumulated decommissioning trust funds for the facility, and ensure the deposit of such funds and additional funds, if necessary, into a decommissioning trust or trusts for Seabrook Station established by FPL Energy Seabrook, LLC**, such that the amount of such funds deposited meets or exceeds the amount required under 10 CFR 50.75 with respect to the interest in Seabrook Station FPL Energy Seabrook, LLC**, acquires on such dates(s).

* Implemented
** On April 16, 2009, the name "FPL Energy Seabrook, LLC" was changed to "NextEra Energy Seabrook, LLC".

E. Physical Security

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provision of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans[1], submitted by letter dated September 23, 2004, and supplemented by letters dated October 15, October 22, and October 29, 2004, and May 18, 2006, is entitled: "Florida Power and Light & FPL Energy Seabrook Physical Security Plan, Training and Qualification Plan and Safeguards Contingency Plan." The set contains Safeguards Information protected under 10 CFR 73.21. NextEra Energy Seabrook, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The NextEra Energy Seabrook, LLC CSP was approved by License Amendment No. 127 (as supplemented by a clarification approved by License Amendment No. 132).

F. Fire Protection

NextEra Energy Seabrook, LLC, shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report, the Fire Protection Program Report, and the Fire Protection of Safe Shutdown Capability report for the facility, as supplemented and amended, and as approved in the Safety Evaluation Report, dated March 1983; Supplement 4, dated May 1986; Supplement 5, dated July 1986; Supplement 6, dated October 1986; Supplement 7, dated October 1987; and Supplement 8, dated May 1989 subject to the following provisions: NextEra Energy Seabrook, LLC, may make changes to the approved fire protection program without prior approval of the Commission, only if those changes would not adversely affect the ability to achieve and maintain shutdown in the event of a fire.

G. Fixed Incore Detector Analysis

If the methodology described in Appendix B of ANP-3243P, Revision 1, "Seabrook Station, Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," is utilized in any plant surveillance then NextEra must notify the NRC by letter of the plant's conditions and results of that surveillance.

H. Financial Protection

The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

I. DELETED

---

[1]The Training and Qualification Plan and Safeguards Contingency Plan are Appendices to the Security Plan.

SURVEILLANCE REQUIREMENTS

4.2.2.1 The provisions of Specification 4.0.4 are not applicable.

4.2.2.2 $F_Q(Z)$ shall be evaluated to determine if $F_Q(Z)$ is within its limits by:

a. Using the incore detectors to obtain a power distribution map at any THERMAL POWER greater than 5% of RATED THERMAL POWER.

b. Increasing the measured $F_Q(Z)$ component of the power distribution map by 3% to account for manufacturing tolerances and further increasing the value by 5% to account for measurement uncertainties.

c. Satisfying the following relationship:

$$F_Q^M(Z) \leq \frac{F_Q^{RTP} \times K(Z)}{P \times W(Z)} \quad \text{for } P > 0.5$$

$$F_Q^M(Z) \leq \frac{F_Q^{RTP} \times K(Z)}{0.5 \times W(Z)} \quad \text{for } P \leq 0.5$$

where $F_Q^M(Z)$ is the measured $F_Q(Z)$ increased by the allowances for manufacturing tolerances and measurement uncertainty, F_Q^{RTP} is the F_Q limit, K(Z) is the normalized $F_Q(Z)$ as a function of core height, P is the relative THERMAL POWER, and W(Z) is the cycle dependent function that accounts for power distribution transients encountered during normal operation. F_Q^{RTP}, K(Z), and W(Z) are specified in the COLR.

d. Measuring $F_Q^M(Z)$ according to the following schedule:

1) Upon achieving equilibrium conditions after exceeding by 20% or more of RATED THERMAL POWER, the THERMAL POWER at which $F_Q(Z)$ was last determined*, or

2) In accordance with the Surveillance Frequency Control Program, whichever occurs first.

* During power escalation at the beginning of each cycle, power level may be increased until a power level for extended operation has been achieved and a power distribution map obtained.

g. The limits specified in Specification 4.2.2.2.c, 4.2.2.2.e, and 4.2.2.2.f above are not applicable in the following core plane regions:

1) Lower core region from 0 to 10%, inclusive.

2) Upper core region from 90 to 100%, inclusive.

4.2.2.3 When $F_Q(Z)$ is measured for reasons other than meeting the requirements of Specification 4.2.2.2, an overall measured $F_Q(Z)$ shall be obtained from a power distribution map and increased by 3% to account for manufacturing tolerances and further increased by 5% to account for measurement uncertainty.

4.2.2.4 (THIS SPECIFICATION NUMBER IS NOT USED)

6.8.1.6.b (Continued)

8. YAEC-1856P, "System Transient Analysis Methodology Using RETRAN for PWR Applications," December, 1992.

   Methodology for Specification:
   2.2.1 - Limiting Safety System Settings
   3.1.1.3 - Moderator Temperature Coefficient
   3.1.3.5 - Shutdown Rod Insertion Limit
   3.1.3.6 - Control Rod Insertion Limits
   3.2.1 - AXIAL FLUX DIFFERENCE
   3.2.2 - Heat Flux Hot Channel Factor
   3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor

9. YAEC-1752, "STAR Methodology Application for PWRs, Control Rod Ejection, Main Steam Line Break," October, 1990.

   Methodology for Specification:
   3.1.1.3 - Moderator Temperature Coefficient
   3.1.3.5 - Shutdown Rod Insertion Limit
   3.1.3.6 - Control Rod Insertion Limits
   3.2.1 - AXIAL FLUX DIFFERENCE
   3.2.2 - Heat Flux Hot Channel Factor
   3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor

10. YAEC-1855PA, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis," October, 1992.

    ANP-3243P, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," Revision 1, May 2014.

    Methodology for Specification:
    3.2.1 - AXIAL FLUX DIFFERENCE
    3.2.2 - Heat Flux Hot Channel Factor
    3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor

11. YAEC-1624P, "Maine Yankee RPS Setpoint Methodology Using Statistical Combination of Uncertainties - Volume 1 - Prevention of Fuel Centerline Melt," March, 1988.

    Methodology for Specification:
    3.2.1 - AXIAL FLUX DIFFERENCE
    3.2.2 - Heat Flux Hot Channel Factor
    3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 143

TO FACILITY OPERATING LICENSE NO. NPF-86

NEXTERA ENERGY SEABROOK, LLC

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

Proprietary information pursuant to
Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.390.
has been redacted from this document. Redacted information is identified by blank space enclosed within double brackets as shown here **[[ ]]**.

Enclosure 2

1.0 INTRODUCTION

By application dated September 10, 2013 (Ref. 1), as supplemented by letters dated March 12, 2014 (Ref. 2), June 12, 2014 (Ref. 3), December 11, 2014 (Ref. 4), and January 8, 2015 (Ref. 5), NextEra Energy Seabrook, LLC (NextEra or the licensee) requested changes to the technical specifications (TSs) for Seabrook Station, Unit 1 (Seabrook).

The amendment allows a change in the Seabrook TSs to allow use of In-Core Instrumentation (ICI) manufactured by AREVA by modifying TS 6.8.1.6.b, "Core Operating Limits Report," by adding AREVA Licensing Report ANP-3243P, "Seabrook Station Unit 1 Fixed Incore Detector System (FIDS) Analysis Supplement to YAEC-1855P A." This supplements and modifies the previously U.S. Nuclear Regulatory Commission (NRC)-approved methodology in YAEC-1855PA, "Seabrook Station Unit 1 FIDS Analysis," dated October, 1992. The amendment also modifies the surveillance requirements (SRs) associated with the heat flux hot channel factor and nuclear enthalpy rise hot channel factor to include revised uncertainty values when measurements are obtained using the FIDS.

The supplements dated March 12, 2014, June 12, 2014, December 11, 2014, and January 8, 2015, 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 original proposed no significant hazards consideration determination as published in the *Federal Register* on February 4, 2014 (79 FR 6649).

The letter dated June 12, 2014, contained an updated uncertainty analysis utilizing the Monte Carlo methods and revised TS pages. Also, the letter dated December 11, 2014, contained revised TS pages.

2.0 BACKGROUND

By letter dated July 24, 2014 (Ref. 6), the NRC issued Amendment No. 141 to Facility Operating License No. NPF-86 for Seabrook. Amendment No. 141 modified Seabrook's TSs by relocating specific surveillance frequencies to a licensee-controlled program with implementation of Nuclear Energy Institute (NEI) 04-10, "Risk-Informed Technical Specification Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies." The changes were consistent with NRC-approved Technical Specifications Task Force (TSTF) Standard Technical Specifications (STS) change TSTF-425, "Relocate Surveillance Frequencies to Licensee Controlled-[Risk Informed Technical Specifications Task Force] RITSTF Initiative 5b," Revision 3.

By letter dated October 21, 2013 (Ref. 7), the NRC staff determined that the information contained in the following document be withheld from public disclosure, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.390, "Public inspections, exemptions, requests for withholding:"

> Attachment 2 of the letter from NextEra to Document Control Desk (NRC) dated September 10, 2013: ANP-3243P, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA."

A non-proprietary version (Ref. 8) of ANP-3243NP is contained in Attachment 4 of the letter dated September 10, 2013.

In support of this review, the NRC staff performed an onsite audit at AREVA's facilities in Lynchburg, Virginia in January 2014. By letter dated February 10, 2014 (Ref. 9), the NRC staff issued a Request for Additional Information (RAI). By letter dated March 12, 2014 (Ref. 2), NextEra provided responses to the NRC staff's RAI questions.

By letter dated April 18, 2014 (Ref. 10), the NRC staff determined that the information contained in the following document be withheld from public disclosure pursuant to 10 CFR 2.390:

> Attachment 2 to SBK-L-14049 "Proprietary Version Response to Request for Additional Information Regarding License Amendment Request 13-05 Fixed Incore Detector System Analysis Methodology" [AREVA's Licensing Document ANP-324301 P, Revision 0, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA- Request for Additional Information."]

A non-proprietary version of the document listed above (Attachment 1 to NextEra's letter dated March 12, 2014) has been placed in the NRC's Public Document Room and added to the ADAMS Public Electronic Reading Room (Ref. 2).

By letter dated July 17, 2014 (Ref. 11), the NRC staff determined that the information contained in the following document be withheld from public disclosure pursuant to 10 CFR 2.390:

> Attachment 5 to SBK-L-14090 "AREVA Licensing Report ANP-3243P, Revision 1, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA (Proprietary)."

A non-proprietary version of the document listed above (Attachment 3 to NextEra's letter dated June 12, 2014) has been placed in the NRC's Public Document Room and added to the ADAMS Public Electronic Reading Room (Ref. 3).

3.0 REGULATORY EVALUATION

The regulations in 10 CFR 50.36, "Technical specifications," are the regulatory requirements related to the contents of the TSs. Specifically, 10 CFR 50.36(a)(1) states, in part, that "Each applicant for a license authorizing operation of a production or utilization facility shall include in its application proposed technical specifications in accordance with the requirements of this section." In 10 CFR 50.36(c)(3), "Surveillance requirements," it states that, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions of operation will be met."

The NRC staff's acceptance criteria for this application are based on the following General Design Criteria (GDCs) in Appendix A of 10 CFR 50:

- GDC-10, "Reactor design," states: "The reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences."

  This criterion is applicable insofar as the Reactor Protection System must be capable of terminating any anticipated transients, including unstable power oscillations, without challenge to the fuel.

- GDC-13, "Instrumentation and control," states: "Instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges."

  This criterion is applicable insofar as instrumentation and controls must be provided to monitor variables and systems affecting the fission process over anticipated ranges for normal operation, anticipated operational occurrences (AOOs) and accident conditions, and to maintain the variables and systems within prescribed operating ranges.

- GDC-20, "Protection system functions," states: "The protection system shall be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety."

  This criterion is applicable insofar as the Reactor Protection System must be designed to initiate the reactivity control systems automatically to assure that acceptable fuel design limits are not exceeded as a result of AOOs and to automatically initiate operation of systems and components important to safety under accident conditions.

- GDC-29, "Protection against anticipated operational occurrences," states: "The protection and reactivity control systems shall be designed to assure an extremely high probability of accomplishing their safety functions in the event of anticipated operational occurrences."

  This criterion is applicable insofar as the protection and reactivity control systems shall be designed to assure an extremely high probability of accomplishing their safety functions in the event of anticipated operational occurrences.

The NRC staff's regulatory criteria in this review are based on the following relevant sections of NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants:"

a. SRP Section 4.2 "Fuel System Design,"
b. SRP Section 4.4 "Thermal and Hydraulic Design," and
c. SRP Section 7.2 "Reactor Trip System."

4.0 TECHNICAL EVALUATION

As stated above, the licensee requests, in its amendment, a change in the Seabrook TSs to allow the use of ICI manufactured by AREVA by modifying TS 6.8.1.6.b, by adding AREVA Licensing Report ANP-3243P. This supplements and modifies the previously NRC-approved methodology. The amendment also modifies the SRs associated with the heat flux hot channel factor and nuclear enthalpy rise hot channel factor to include revised uncertainty values when measurements are obtained using the FIDS.

AREVA Licensing Report ANP-3243P provides modifications to the FIDS Analysis methodology described in YAEC-1855PA. The FIDS Analysis methodology has been in use at Seabrook Station to monitor core power distribution surveillance parameters since Cycle 5 in 1995. The FIDS uses fixed platinum detectors, which are predominantly gamma sensitive and have a contribution from neutron capture. The FIDS have operated successfully for over 20 years of operation. In 2007, Seabrook undertook a phased detector replacement project. The specification for the replacement detectors were designed to be a like-for-like replacement. However, changes in manufacturing techniques required changes to the FIDS Analysis methodology to incorporate correction factors to normalize the replacement and the original detector signals to the standard detector performance required by the analysis methodology.

AREVA Licensing Report ANP-3243P describes the detector performance trending analysis of the 15 cycles, documents the proposed modifications to the FIDS Analysis methodology, and provides a new determination of the resulting measurement uncertainty for the F_Q and $F_{\Delta H}$ TS surveillance parameters.

4.1 Existing TS and Proposed TS Changes

4.1.1 TS 4.2.2.2.b

The existing TS wording is as follows:

> Increasing the measured $F_Q(Z)$ component of the power distribution map by 3% to account for manufacturing tolerances and further increasing the value by 5% when using the moveable incore detectors or 5.21% when using the fixed incore detectors to account for measurement uncertainties.

The proposed wording, as stated in the licensee's amendment request, is as follows:

Increasing the measured $F_Q(Z)$ component of the power distribution map by 3% to account for manufacturing tolerances and further increasing the value by 5% to account for measurement uncertainties.

4.1.2 TS 4.2.2.3

The existing TS wording is as follows:

When $F_Q(Z)$ is measured for reasons other than meeting the requirements of Specification 4.2.2.2, an overall measured $F_Q(Z)$ shall be obtained from a power distribution map and increased by 3% to account for manufacturing tolerances and further increased by 5% when using the moveable incore detectors or 5.21% when using the fixed incore detectors to account for measurement uncertainty.

The proposed wording, as stated in the licensee's amendment request, is as follows:

When $F_Q(Z)$ is measured for reasons other than meeting the requirements of Specification 4.2.2.2, an overall measured $F_Q(Z)$ shall be obtained from a power distribution map and increased by 3% to account for manufacturing tolerances and further increased by 5% to account for measurement uncertainty.

4.1.3 TS 6.8.1.6.b.10

The existing wording is as follows:

10. YAEC-1855PA, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis," October, 1992.

    Methodology for Specification:
    3.2.1 - AXIAL FLUX DIFFERENCE
    3.2.2 - Heat Flux Hot Channel Factor
    3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor

The proposed wording, as stated in the licensee's amendment request, is as follows:

10. YAEC-1855PA, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis," October, 1992.

    ANP-3243P, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," Revision 1, May 2014.

    Methodology for Specification:
    3.2.1 - AXIAL FLUX DIFFERENCE
    3.2.2 - Heat Flux Hot Channel Factor
    3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor

4.2 NRC Staff Evaluation

In support of this review, the NRC staff performed an onsite audit at AREVA's facilities in Lynchburg, Virginia in January 2014. By letter dated February 10, 2014 (Ref. 9), the NRC staff issued a Request for Additional Information (RAI). By letter dated March 12, 2014 (Ref. 2), NextEra provided its responses to the NRC staff's RAI questions.

Details pertaining to the NRC staff audit and review of the RAI responses are provided in Appendix A of this safety evaluation.

As stated in Section 4.0 above, the licensee's amendment request supplements and modifies a previously NRC-approved methodology. In conducting its assessment of the change in methodology, the NRC staff focused its review on the following topics: (1) change in manufacturer, (2) neutron conversion factor, (3) gamma correction factor, (4) depletion correction factor, (5) new uncertainty analysis, and (6) revisions to the Seabrook Facility Operating License and TSs.

4.2.1 Change in Manufacturer

The minor manufacturing process changes have resulted in some performance differences in the detector. To accommodate for this performance difference, an engineering adjustment factor was required to bias the detector signal to the performance of the Original Equipment Manufacturer (OEM) detectors. The adjustment factor is identified as the Gamma Correction Factor (GCF). The NRC staff has confirmed that the replacement detectors are built to the original specification and within the as-built attributes of the original detectors including detector geometry, dielectric densities and component material impurities. Therefore, the NRC staff finds that these changes are acceptable.

4.2.2 Neutron Conversion Factor

The Neutron Conversion Factor (NCF) is part of the current licensing basis (CLB), and has a **[[**

]] This value is used to approximate the portion of overall detector signal contribution that is due to neutron interactions with platinum. The licensee has concluded that a more accurate representation of the contribution of neutron interactions with platinum to the overall predicted detector signal can be made. This change is considered an enhancement to the evaluation model (EM) by the NRC staff.

The new form of the NCF uses **[[**

]] The form of the function, the physics, and its application are sound. Therefore, the NRC staff finds that this change is acceptable.

4.2.3 Gamma Correction Factor

The Gamma Correction Factor (GCF) is not part of the CLB and is considered a change to the EM by the NRC staff. The GCF is a simple bias term applied to the measured detector signal within the FINC code prior to processing for surveillances. This bias term **[[**

]] This is a common practice within instrumentation systems at nuclear power plants and other industries. The form of the function, the physics, and its application are sound. Therefore, the NRC staff finds that this change is acceptable.

4.2.4 Depletion Correction Factor

The Depletion Correction (DPC) Factor is not part of the CLB and is considered an enhancement to the EM by the NRC staff. Further, the CLB considers elemental platinum depletion to be insignificant. Over years of system performance monitoring, the licensee has determined that the addition of this factor would allow for a more accurate prediction of the expected detector signal for future surveillances. The process of creating this DPC [[

]] The form of the function, the physics, and its application are sound. Therefore, the NRC staff finds that this change is acceptable.

4.2.5 New Uncertainty Analysis

ANP-3243P, Revision 1, describes the EM used in determining bounding uncertainty values for three dimensional (F_Q) and two dimensional ($F_{\Delta H}$) power calculations. It also provides an analysis of the 15 cycles of operation of the Seabrook in-core detectors using the aforementioned EM. The results of this analysis are then used to provide proposed TS changes, if necessary, as described above.

The results of this analysis are:

$\sigma(F_Q)$ = [[ ]] – No TS change required
$\sigma(F_{\Delta H})$ = [[ ]] – No TS change required

The new uncertainty analysis, provided by AREVA, is the main focus of the licensee's amendment request. AREVA used standard statistical Monte Carlo methods, which were previously reviewed and approved by the NRC staff. These methods were submitted by other applicants for use at nuclear power plants, but they are still considered a change to the EM by the NRC staff. The NRC staff did not consider the use of the standard statistical Monte Carlo methods, in this application, to be a focus area; and, therefore only addressed portions of the methodology for reasonableness.

The CLB uses [[

]]

The CLB uses [[

]]

The proposed change in uncertainty analysis uses standard Monte Carlo methods [[

]] The NRC staff determined that this methodology is appropriate for the analysis provided.

The NRC staff did not perform a detailed review of the completed uncertainty analysis and did not use confirmatory calculations of the uncertainty values. The uncertainty analysis results and data plots were reviewed for expected changes. The NRC staff also reviewed the trending analysis methodology/results and concluded that there is reasonable assurance that the methodologies were applied correctly.

Appendix B of the letter dated June 12, 2014, provides a methodology for extrapolation of the EM to conditions outside of the perturbation bounds used in this analysis. The NRC staff finds that the methodology provided in Appendix B is reasonable; however, the NRC staff cannot determine the limits of the extrapolation. This situation is considered to occur very rarely, but as such, the NRC staff needs to make sure it is captured in a licensing document. Therefore, a license condition is needed in the event that the methodology, as addressed in Appendix B of the letter dated June 12, 2014, is utilized by the licensee. The license condition would require that NextEra must notify the NRC by letter as to the conditions and results of that evaluation. The NRC staff proposed the following Facility Operating License Condition 2.G, and NextEra agreed to the license condition by letter dated January 8, 2015:

> If the methodology described in Appendix B of ANP-3243P, Revision 1, "Seabrook Station, Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," is utilized in any plant surveillance then NextEra must notify the NRC by letter of that plant's conditions and results of that surveillance.

The NRC staff finds that the changes to the uncertainty analysis methodology and the final results of the analysis are acceptable. Further, the NRC staff finds the proposed Facility Operating License Condition 2.G acceptable.

4.2.6 Revisions to the Seabrook Facility Operating License and TSs

NextEra's proposed TS 4.2.2.2.b and TS 4.2.2.3, as provided in letters dated June 12, 2014, and December 11, 2014, are consistent with the results in ANP-3243P, Revision 1. The proposed changes are described in Section 4.1 above.

The addition of ANP-3243P, "Seabrook Station Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," Revision 1, May 2014," to TS 6.8.1.6.b.10 is simply to provide the latest approved methodology for that section. The NRC staff finds this change to be appropriate.

By letter dated January 8, 2015, NextEra proposed Facility Operating License Condition 2.G, as described above.

NextEra also provided proposed mark-ups to the applicable TS bases sections for information only, and those changes are both consistent with application and appropriate.

The NRC staff finds that these TS changes and Facility Operating License Condition 2.G are acceptable.

4.2.7 Technical Conclusion

The NRC staff has reviewed the licensee's analyses related to the effects of the proposed changes associated with the detector manufacturer, manufacturing processes, EM, and calculational uncertainties on the operation of the fuel assemblies. The NRC staff concludes that the licensee has adequately accounted for the effects of the proposed changes on the RPS and fuel operating limits. In addition, the NRC staff concludes that the licensee has demonstrated that the fuel design limits will not be exceeded during normal or anticipated operational transients. Further, the NRC staff concludes that the effects of postulated reactivity accidents will not cause significant damage to the fuel or to the Reactor Coolant Pressure Boundary (RCPB), or impair the capability to cool the core. Based on this evaluation, the NRC staff finds that the applicable requirements of GDCs 10, 13, 20, and 29 are met. Further, the NRC staff finds the proposed TS changes and Facility Operating License Condition 2.G are acceptable. Therefore, the NRC staff approves NextEra to use ANP-3243P, Revision 1.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Hampshire and Massachusetts State officials were notified of the proposed issuance of the amendment. The State officials provided no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (79 FR 6649, February 4, 2014). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), there is no

need for an environmental impact statement or environmental assessment to be prepared in connection with the issuance of the amendment.

7.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

8.0 REFERENCES

1. NextEra Energy Seabrook, "Seabrook Station, License Amendment Request 13-05, Fixed Incore Detector System Analysis Methodology," (SBK-L-13121), Docket No. 50-443, September 10, 2013, Agencywide Documents Access and Management System (ADAMS) Accession No. ML13260A160.

2. NextEra Energy Seabrook, "Seabrook Station, Response to Request for Additional Information Regarding License Amendment Request 13-05, Fixed Incore Detector System Analysis Methodology," (SBK-L-14049), Docket No. 50-443, March 12, 2014, ADAMS Accession No. ML14078A059.

3. NextEra Energy Seabrook, "Seabrook Station, Supplement to License Amendment Request 13-05, Fixed Incore Detector System Analysis Methodology," (SBK-L-14090), Docket No. 50-443, June 12, 2014, ADAMS Accession No. ML14167A430.

4. NextEra Energy Seabrook, "Seabrook Station, Supplement to NextEra Energy Seabrook, LLC's LAR 13-05, LAR 14-01, LAR 14-02 and LAR 14-03 in Response to Issuance of Amendment 141, Risk-Informed Justifications for the Relocation of Specific Surveillance Frequency Requirements to the Seabrook Surveillance Frequency Control Program (SFCP)," (SBK-L-14184), Docket No. 50-443, December 11, 2014, ADAMS Accession No. ML14349A646.

5. NextEra Energy Seabrook, "Seabrook Station, Response to Request for Additional Information Regarding License Amendment Request 13-05, Fixed Incore Detector System Analysis Methodology," (SBK-L-15001), Docket No. 50-443, January 8, 2015, ADAMS Accession No. ML15015A015.

6. U.S. Nuclear Regulatory Commission, "Seabrook Station, Unit No. 1 – Issuance of Amendment Regarding the Risk-Informed Justifications for the Relocation of Specific Surveillance Frequency Requirements to a Licensee-Controlled Program (TAC No. MF1958)," Docket No. 50-443, July 24, 2014, ADAMS Accession No. ML13212A069.

7. U.S. Nuclear Regulatory Commission, "Seabrook Station, Unit No. 1 – Request for Withholding Information from Public Disclosure Regarding License Amendment Request 13-05, Fixed Incore Detector System Analysis Methodology," Docket No. 50-443, October 21, 2013, ADAMS Accession No. ML13263A138.

8. Attachment 4 to letter dated September 10, 2013, from NextEra Energy Seabrook, "ATTACHMENT 4, ANP-3243NP, Seabrook Station Unit 1 Fixed Incore Detector System Analysis Supplement to YAEC-1855PA," ADAMS Accession No. ML13260A161.

9. U.S. Nuclear Regulatory Commission, "Seabrook Station, Unit No. 1 – Request for Additional Information Regarding License Amendment Request 13-05, Fixed Incore Detector System Analysis Methodology," Docket No. 50-443, February 10, 2014, ADAMS Accession No. ML14028A194.

10. U.S. Nuclear Regulatory Commission, "Request for Withholding Information from Public Disclosure for Seabrook Station, Unit No. 1, (TAC No. MF2751)," April 18, 2014, ADAMS Accession No. ML14078A106.

11. U.S. Nuclear Regulatory Commission, "Request for Withholding Information from Public Disclosure for Seabrook Station, Unit No. 1, (TAC No. MF2751)," July 17, 2014, ADAMS Accession No. ML14168A247.

Principal Contributor: Jeremy Dean

Date: February 4, 2015

Attachment: Appendix A

APPENDIX A

NUCLEAR REGULATORY COMMISSION

STAFF AUDIT DATED JANUARY 2014, AND

STAFF REVIEW OF REQUEST FOR ADDITIONAL INFORMATION RESPONSES

Proprietary information pursuant to
Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.390
has been redacted from this document. Redacted information is identified by blank space enclosed within double brackets as shown here [[ ]].

NRC Staff Audit

In January 2014, the Nuclear Regulatory Commission (NRC) staff performed an onsite audit at AREVA's facilities in Lynchburg, Virginia. During this audit, the licensee and the NRC staff discussed the submittal on the docket, and the NRC staff was given a tour of AREVA's manufacturing facility. The goal of touring the AREVA facility was to identify any physical changes to the detectors and determine the potential for any of the manufacturing process changes to adversely affect the detector's design functions.

At the conclusion of the audit, the NRC staff determined that the remainder of the review should be focused on six areas. These six areas include the following:

- A change in the manufacturer with minor changes to the manufacturing processes, relative to the Original Equipment Manufacturer (OEM) detectors,
- An improved prediction of the neutron component of the detector signal - Neutron Conversion Factor (NCF),
- Applying correction factors to the measured detector signal of the replacement detectors to better assure normalization to a standard detector performance – Gamma Correction Factor (GCF),
- Accounting and correcting the measured detector signal for detector depletion to better ensure normalization to a standard detector performance – Depletion Correction (DPC),
- Replacing the uncertainty analysis with a new analysis that better represents the true measurement uncertainty for F_Q and $F\Delta H$ over a wide range of conditions by propagating the uncertainties through the FIDS analysis system using a Monte Carlo statistical simulation method, and
- Proposed updates to the Seabrook Station's Technical Specifications.

RAI Questions and NRC Staff Review

As a result of the audit, the NRC staff identified the need for additional information to complete its review of the licensee's amendment request. By letter dated February 10, 2014, the NRC staff issued a request for additional information (RAI). By letter dated March 12, 2014, NextEra provided its responses to the NRC staff's RAI questions. Provided below is a summary of the NRC staff's RAI, the licensee's response, and the NRC staff's assessment of the licensee's response for each of the technical review areas assessed during the audit.

RAI-1: Post modification testing (PMT) Program

Describe the PMT program that is used to ensure that any manufacturing differences from the original equipment manufacturer process do not create deviations from the original platinum incore detector specifications.

Resolution – RAI-1:

In its letter dated March 12, 2014, NextEra demonstrated that it performs a rigorous in-reactor PMT program at Seabrook to verify the detector functional attributes during operation of the initial replacement detectors over several cycles of operation. The PMT demonstrates equivalent operational results between the replacement and original detectors. Additionally, the finalized fabrication process controls will ensure conformance to design specifications and subsequent in-reactor performance of the replacement detectors. The licensee also performs routine in-reactor performance monitoring of the original and replacement detectors to ensure their continued performance to functional design specification.

The NRC staff concluded that the licensee's PMT program is adequate to prevent deviations from occurring in the detectors manufactured by AREVA relative to the original platinum incore detector specifications. This is necessary because AREVA's manufacturing process could not be verified to be like-for-like with the OEM process. The NRC staff was provided a tour of AREVA's facility and observed some of the processes used to make the replacement detectors. The minor departures from the OEM process will not degrade the detectors performance from that stated in the functional design specification. Any potential degradation will be observable by the licensee's PMT program. Therefore, this RAI issue is resolved.

RAI-2: Periodic Validation

Describe what periodic validation will be done, if any, to:

a. Ensure that the uncertainty components listed in Table 3 of ANP-3243P (page 37) remain applicable to the Seabrook reactor over the remainder of the reactor's lifetime.

b. Ensure that the proposed depletion correction factor, which is empirically based of historical data, continues to be representative for the new platinum incore detectors.

Resolution – RAI-2:

Signal Reproducibility, σ_a

In its letter dated March 12, 2014, NextEra stated that the Signal Reproducibility, σ_a, is dependent on physical attributes of the detector and the accuracy and stability of the Fixed Incore Detector Data Acquisition System (FIDDAS). Stability of the FIDDAS and the individual Self-Powered Detectors (SPD) is dependent on the circuit continuity of the detectors leads, signal connectors and electro-magnetic noise immunity. The FIDDAS automatically monitors each detector signal for stark or abrupt changes in circuit continuity that may result in a loss of detector compensation or emitter signal whereby the FIDDAS tags the signal unreliable. The FIDDAS instrumentation is also monitored by the Main Plant Computer System to identify detector FIDDAS failure or malfunctions and generates alarms in the Control Room. This automatic periodic validation function is performed at the one minute cycle time of the FIDDAS.

Analytical Methods, σ_b

NextEra stated that the physics analysis method uncertainty, σ_b , have not changed. The licensee further stated that the methods used in the FIDS analysis system (CASM0-3 and SIMULATE-3) have not changed since the licensing of the system.

Axial Signal Power Shape, σ_c

NextEra stated that the axial power shape uncertainty, σ_c, was determined by comparing predicted and measured axial power shapes. Data from the SIMULATE-3 code and movable fission chamber measurements were used to determine this component of uncertainty. Since SIMULATE-3 has not been modified, no change in this uncertainty component is expected.

2-Dimensional (D) Integral Detector Processing, σ_e, AND 3D Total Detector Processing, σ_d

NextEra stated that the development of the 2D & 3D Detector Processing Uncertainty Components was initially based on the limited data from Cycles 1 and 2 for the initial FIDS license granted via license amendment request (LAR) 92-14. These same Uncertainty Components have now been regenerated within ANP-3242P based on the analysis of data from Cycles 1 through 15 to accommodate many variations in core design and cycle operation. This reanalysis demonstrates very good agreement with the original analysis presented within YAEC-1855P A. Going forward, the 2D and 3D Detector Processing RMS values will continue to be evaluated by procedure for each use of the S3FINC code to satisfy TS SRs.

These procedural RMS review criteria are more restrictive than the 95/95 detector processing uncertainty component (m-p) in ANP-3243P.

The NRC staff reviewed the licensee's response and concluded that their monitoring program is adequate to assure that the detector processing uncertainty components and the DPC will remain bounding for the remainder of reactor's operating license. Therefore, this RAI issue is resolved.

RAI-3: Bias in RMS Error Trend

In Figure 5-2 of 32-9161509-000, Seabrook Cycle 14 2-D/3-D incore detector root mean square (RMS) errors, the trend of RMS errors versus core average burnup is significantly higher at beginning of life, trends downward, and stabilizes after ~6 Gigawatt days per metric ton (GWd/MT) in core average burnup. [[

]]

a. Explain this systematic behavior of 2-D/3-D incore detector RMS errors versus core average burn up.

b. Demonstrate whether this bias is seen versus the instrumented assembly's assembly average burnup.

c. Explain why it is acceptable to apply a single RMS error value for an entire cycle in the calculation of $F_{\Delta H}$ and F_Q uncertainty when the average RMS is non-conservative for early in cycle (e.g, use of 3-D average RMS value of [[ ]] in Equation 6 and 2-D average RMS value of [[ ]] in Equation 7 are not representative of actual RMS values calculation for Seabrook in the first- [[ ]] of cycle exposure).

Resolution – RAI-3:

NextEra's initial response to RAI-3, as provided by letter dated March 12, 2014, was concluded to be insufficient by the NRC staff. This facilitated a revision to ANP-3243P, Seabrook FIDS Analysis Supplement to YAEC-1855PA, by the licensee. The revision was submitted to the NRC staff for review by the licensee by letter dated June 12, 2014. The revision provided by letter dated June 12, 2014, superseded the licensee's response in its letter dated March 12, 2014.

The NRC staff has reviewed ANP-32343P, Revision 1, which is discussed in Safety Evaluation Section 4.2.5. This RAI issue does not apply to ANP-32343P Revision 1. Therefore, this RAI issue is resolved.

RAI-4: Uncertainty Analysis Data Reduction

Explain and justify the removal of the 39 state points in the uncertainty analysis. What criteria were used to exclude state points? How are the state points covered by the current thermal limits surveillance methodology?

Resolution – RAI-4:

NextEra stated that the state points were excluded due to transient Xenon concentration conditions in the reactor at the time of the snap shot taken by the core monitoring system. SIMULATE-3 3-D reactor analysis system is not approved for transient Xenon and non-equilibrium Samarium conditions. This makes the m-p, for which SIMULATE-3 provided the predicted value, comparison invalid. The NRC staff concurs that these 39 state points should not be included in the uncertainty analysis.

The licensee did not fully address the second question of RAI-4. The licensee stated that the system is only approved for steady state conditions. However, Seabrook must operate within the fuel's TS limits for operation at all times including startup. Since there is no change in the application methodology for thermal limits surveillances, the NRC staff determined that it did not need additional explanation of the methodology, because that methodology had already been approved. Therefore, this RAI issue is resolved.

RAI-5: Depletion Correction Factor

Explain how the depletion correction factor (DPC) and the uncertainty on DPC are directly or indirectly accounted for in the uncertainty analysis.

Resolution – RAI-5:

NextEra stated in its response that the magnitude of the change in DPC and of the uncertainty on DPC is very small. When included in the calculation of the uncertainties for F_Q and $F_{\Delta H}$, that change is insignificant and the overall uncertainty methodology remains conservative. The NRC staff concurs with this assessment.

In addition, the LAR supplement has a new uncertainty analysis methodology that inherently accounts for all contributors to the overall uncertainty in predicted detector signals. This contributor is indirectly accounted for in the uncertainty analysis. Therefore, this RAI issue is resolved.

RAI-6: Neutron Conversion Factor

Explain the difference in the calculation of the neutron conversion factor (NCF) and/or (how the) application of the NCF differs from the previously approved method.

Resolution – RAI-6:

In YAEC-1855PA, the neutron portion of the signal **[[**

]] In ANP-3243P, Revision 0 and ANP-3243P, Revision 1, the neutron portion of the signal is distributed by the Pt-195 neutron reaction rate in each detector so that the core average neutron component of the signal is **[[** **]]**. The individual detector Pt-195 neutron reaction rate is dependent not only on the thermal neutron flux, but also the fast neutron flux. Using the total neutron reaction rate, better captures the effect of a broader range of core design and operating conditions that make it more suitable for predicting the neutron portion of the signal for each detector.

The NRC staff concurs that this change is appropriate and provides for a more accurate calculation of local power in the reactor. This change does not adversely affect the safety function of the reactor protection system (RPS). Therefore, this RAI issue is resolved.

RAI-7: Application of the DCP and NCF

Explain the application of the DCP and NCF to overall system used in process of surveillances of $F_{\Delta H}$, F_Q, and axial flux difference. Provide a block diagram of the hardware, software, and plant procedures that used these surveillances as discussed during the January 2014 audit.

Resolution – RAI-7:

The licensee provided the information requested in this RAI. This clarification information was supplied to aid the NRC staff in understanding the processing logic of the integrated system. The NRC staff determined that this information was not required to resolve any safety issues associated with the amendment request. Therefore, this RAI issue is resolved.

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

Sincerely,

/RA/

John G. Lamb, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosures:
1. Amendment No. 143 to NPF-86
2. Non-Proprietary Safety Evaluation
3. Proprietary Safety Evaluation

cc w/encls 1 & 2: Distribution via Listserv

DISTRIBUTION:

PUBLIC	LPLI-2 R/F	RidsAcrsAcnw_MailCTR Resource
RidsNrrDorlDpr Resource	RidsNrrDorlLpl1-2 Resource	RidsRgn1MailCenter Resource
RidsNrrDssSrxb Resource	RidsNrrPMSeabrook Resource	RidsNrrLAABaxter Resource

ADAMS Accession No: Non-Proprietary SE: ML14363A275 Proprietary SE: ML14363A292

***via memo**

OFFICE	LPL1-2/PM	LPL1-2/LA	SNPB/BC*	OGC - NLO	LPL1-2/BC	LPL1-2/PM
NAME	JLamb	ABaxter	JDean	AGhosh	MKhanna	JLamb
DATE	12/23/14	01/13/15	12/19/14	1/30/15	2/2/15	2/4/15

OFFICIAL RECORD COPY