NEXTera ENERGY POINT BEACH

December 19, 2014

NRC 2014-0077
10 CFR 50.54(f)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

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

NextEra Energy Point Beach, LLC's Full Compliance Report for the March 12, 2012 Commission Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)

References: (1) U.S. Nuclear Regulatory Commission, Order Number EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Effective Immediately)," dated March 12, 2012 [ML12056A044]
(2) U.S. Nuclear Regulatory Commission, Interim Staff Guidance JLD-ISG-2012-03, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation," Revision 0, dated August 29, 2012 [ML12221A339]
(3) NEI 12-02, Revision 1, Industry Guidance for Compliance with NRC Order EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," dated August 2012 [ML12240A307]
(4) NextEra Energy Point Beach, LLC's Initial Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated October 26, 2012 [ML12305A200]
(5) NextEra Energy Point Beach, LLC's Overall Integrated Plan in Response to March 12, 2012 Commission Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated February 22, 2013 [ML13053A399]

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued an order (Reference 1) to NextEra Energy Point Beach, LLC (Point Beach). Reference (1) was immediately effective and directed NextEra to install reliable spent fuel pool level instrumentation.

Reference (1) required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference (2) endorses industry guidance document NEI 12-02, Revision 1 (Reference 3) with clarifications and exceptions identified in Reference (2). Reference (4) provided the Point Beach initial status report regarding mitigation strategies. Reference (5) provided the Point Beach Overall Integrated Plan.

Reference (1) requires submission of a report to the Commission when full compliance with requirements described in Attachment 2 or Attachment 3 of Reference (1) is achieved. The purpose of this letter is to provide the full compliance report to the Commission pursuant to Section IV, Condition C.3, of Reference (1). The Enclosure to this letter provides the full compliance report.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact Mr. Mike Millen, Licensing Manager, at 920/755-7845.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on December 19, 2014.

Very truly yours,

NextEra Energy Point Beach, LLC

Eric McCartney
Site Vice President

Enclosure

cc: Director, Office of Nuclear Reactor Regulation
Administrator, Region III, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
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ENCLOSURE

NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT

FULL COMPLIANCE REPORT FOR THE
MARCH 12, 2012 COMMISSION ORDER TO MODIFY LICENSES
WITH REGARD TO RELIABLE SPENT FUEL POOL INSTRUMENTATION
(ORDER NUMBER EA-12-051)

INTRODUCTION

NextEra Energy Point Beach, LLC (Point Beach) has installed two independent full scale level monitors for our Spent Fuel Pools (SFPs) in response to Order EA-12-051, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," (Reference 2). The information provided herein documents full compliance for Point Beach Units 1 and 2 with Reference 2.

Request for Information - All RAIs were either responded to, and closed, in response letter (Reference 3) or were incorporated into the ISE Open Items.

ISE Open Items – All Point Beach ISE Open Items have been closed.

ISE Confirmatory Items – Complete pending NRC Closure.

Licensee Identified Open Items – Complete pending NRC Closure.

Point Beach had provided a response via e-portal for the items requested in Reference 7 and considers them to be complete. (See Table 1 below)

MILESTONE SCHEDULE – ITEMS COMPLETE

Point Beach Milestone	Completion Date
Commence Engineering and Design	1Q 2013
Complete Design	2Q 2014
Complete Procurement of SFP Instruments	3Q 2014
Complete Installation of SFP Instruments	4Q 2014
Instruments Operational and Training completed	4Q 2014

ORDER EA-12-051 COMPLIANCE ELEMENTS SUMMARY

The elements identified below for Point Beach, as well as the Site response submittal (Reference 1), the 6-Month Status Reports (References 4, 5 and 6), and the response to request for additional information (Reference 3), demonstrate compliance with Order EA-12-051.

IDENTIFICATION OF LEVELS OF REQUIRED MONITORING - COMPLETE

Point Beach has identified the three required levels for monitoring SFP level in compliance with Order EA-12-051. These levels have been integrated into the site processes for monitoring level during events and responding to loss of SFP inventory.

INSTRUMENT DESIGN FEATURES - COMPLETE

The design of the instruments installed at Point Beach comply with the requirements specified in the order and described in NEI 12-02 "Industry Guidance for Compliance with NRC Order EA-12-051." The instruments have been installed in accordance with the station design control process.

The instruments have been arranged to provide reasonable protection against missiles. The instruments have been mounted to retain design configuration during and following the maximum expected ground motion. The instruments will be reliable during expected environmental and radiological conditions when the SFP is at saturation for extended periods. The instruments are independent of each other and have separate and diverse power supplies. The instruments will maintain their designed accuracy following a power interruption and are designed to allow for routine testing and calibration.

The instrument display is readily accessible during postulated events and allows for SFP level information to be promptly available to decision makers.

PROGRAM FEATURES - COMPLETE

Training for Point Beach has been completed in accordance with an accepted training process as recommended in NEI 12-02, Section 4.1.

Operating and maintenance procedures, for Point Beach have been developed, and integrated with existing procedures. Procedures have been verified and are available for use in accordance with the site procedure control program.

Site processes have been established to ensure the instruments are maintained at their design accuracy.

TABLE 1

NRC No.	NRC QUESTION DESCRIPTION	LICENSEE QUESTION RESPONSE
1	**Please provide the following:** **a) The design criteria that will be used to estimate the total loading on the mounting device(s), including static weight loads and dynamic loads. Describe the methodology that will be used to estimate the total loading, inclusive of design basis maximum seismic loads and the hydrodynamic loads that could result from pool sloshing or other effects that could accompany such seismic forces.** **b) A description of the manner in which the level sensor (and stilling well, if appropriate) will be attached to the refueling floor and/or other support structures for each planned point of attachment of the probe assembly. Indicate in a schematic the portions of the level sensor that will serve as points of attachment for mechanical/mounting or electrical connections.** **c) A description of the manner by which the mechanical connections will attach the level instrument to permanent SFP structures so as to support the level sensor assembly.**	a) All SFPIS equipment will be designed in accordance with the Point Beach Nuclear Plant Safe Shutdown Earthquake (SSE) design requirements. The vendor, Westinghouse, has evaluated the structural integrity of the mounting brackets in calculation CN-PEUS-13-28. The GTSTRUDL model, used by Westinghouse to calculate the stresses in the bracket assembly, considers load combinations for the dead load, live load and seismic load on the bracket. The reactionary forces calculated from these loads become the design inputs to design the mounting bracket anchorage to the refuel floor to withstand a Safe Shutdown Earthquake (SSE). <u>Seismic</u> The seismic loads are obtained from Point Beach Nuclear Plant's response spectra. The following methodology was used in determining the stresses on the bracket assembly: • Frequency analysis, taking into account the dead weight and the hydrodynamic mass of the structure, is performed to obtain the natural frequencies of the structure in all three directions. • SSE response spectra analysis is performed to obtain member stresses and support reactions. • Modal responses are combined using the Ten Percent Method per U.S. NRC Regulatory Guide 1.92, Revision 1, "Combining Modal Responses and Spatial Components in Seismic Response Analysis". This method is endorsed per Appendix A.5 of the Updated FSAR for Point Beach Nuclear Plant. • The seismic loads for each of the three directions are combined by the Square Root of the Sum of Squares (SRSS) Method. • Sloshing analysis is performed to obtain liquid pressure and its impact on bracket design. • The seismic results are combined with the dead load results and the hydrodynamic pressure results in absolute sum. These combined results are compared with the allowable stress values. <u>Sloshing</u> Sloshing forces were obtained by analysis. The TID-7024, Nuclear Reactors and Earthquakes, 1963, by the US Atomic Energy Commission, approach has been used to estimate the wave height and natural frequency. Horizontal and vertical impact force on the bracket components was calculated using the wave height and natural frequency obtained using TID-7024 approach. Using this methodology, sloshing forces have been calculated and added to the total reactionary forces that would be applicable for bracket anchorage design. The analysis also determined that the level probe can withstand a credible design basis seismic event. During the design basis event, the SFP water level is expected to rise and parts of the level sensor probe are assumed to become submerged in borated water. The load impact due to the rising water and submergence of the bracket components has also been considered for the overall sloshing impact. Reliable operation of the level measurement sensor with a submerged interconnecting cable has been demonstrated by analysis of previous Westinghouse testing of the cable, and the vendor's cable qualification. Boron build up on the probe has been analyzed to determine the potential effects

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		on the sensor. The following Westinghouse documents provide information with respect to the design criteria used, and a description of the methodology used to estimate the total loading on the device. a. CN-PEUS-13-28 – Pool-side Bracket Seismic Analysis b. WNA-TR-03149-GEN – Sloshing Analysis c. EQ-QR-269, WNA-TR-03149-GEN, EQ-TP-353 – Seismic Qualification of other components of SFPI Point Beach Nuclear Plant specific calculation NEE-009-CALC-006 – Anchorage Qualification for Spent Fuel Pool Instrumentation System Upgrades provides the qualification for the anchorage of the SFPIS equipment. The design criteria used in this calculation meets the requirements to withstand a 2x SSE and will meet the Point Beach seismic 1 installation requirements. The methods used in the calculation follow IEEE Standard 344-2004 and IEEE Standard 323-2003 for seismic qualification of the instrument. b) The level sensor, which is one long probe, will be suspended from the launch plate via coupler/connector assembly. The launch plate is a subcomponent of the bracket assembly, which is mounted to the refuel floor via anchors. Attachment 1 shows a schematic of the level sensor with mechanical attachment points. c) The bracket assembly that supports the sensor probe and launch plate will be mechanically connected to the SFP structure. The mechanical connection consists of four concrete expansion anchors that will bolt the bracket assembly to the SFP structure via the base plate. The concrete expansion anchors will be designed to withstand SSE and will meet the Point Beach seismic installation requirements. The qualification details of the bracket are provided in Westinghouse's Pool-side bracket Seismic Analysis CN-PEUS-13-28 and the qualification of the anchorage to the floor is provided in Point Beach specific calculation NEE-009-CALC-006 – Anchorage Qualification for Spent Fuel Pool Instrumentation System Upgrades.
2	**Please provide the analyses used to verify the design criteria and methodology for seismic testing of the SFP instrumentation and the electronics units, including, design basis maximum seismic loads and the hydrodynamic loads that could result from pool sloshing or other effects that could accompany such seismic forces.**	The following Westinghouse documents provide the analyses used to verify the design criteria and describe the methodology for seismic testing of the SFP instrumentation and electronics units, inclusive of design basis maximum seismic loads and hydrodynamic loads that could result from pool sloshing and other effects that could accompany such seismic forces: a. CN-PEUS-13-28 – Pool-side Bracket Seismic Analysis b. WNA-TR-03149-GEN – Sloshing Analysis c. EQ-QR-269, WNA-TR-03149-GEN, EQ-TP-353 – Seismic Qualification of other components of SFPI No equipment failures were noted as a result of seismic test runs. Seismic test data has been documented in the seismic test reports, referenced above. Point Beach specific calculations NEE-009-CALC-006 – Anchorage Qualification for Spent Fuel Pool Instrumentation System Upgrades, addresses the seismic qualification of the SFPIS equipment to the primary building structure. The design criteria used in this calculation satisfies the requirements to withstand 2x SSE and will meet the Point Beach seismic installation requirements for mounting the readout displays in the Primary Auxiliary Building.

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3	**For each of the mounting attachments required to attach SFP level equipment to plant structures, please describe the design inputs, and the methodology that was used to qualify the structural integrity of the affected structures/equipment**	RAI-2 provides the design criteria and methodology used by Westinghouse for the mounting attachments. The Westinghouse documents provide the analyses used to verify the design criteria and describe the methodology for seismic testing of the SFP instrumentation and electronics units, inclusive of design basis maximum seismic loads and hydrodynamic loads that could result from pool sloshing and other effects that could accompany such seismic forces: Point Beach specific calculations NEE-009-CALC-006 – Anchorage Qualification for Spent Fuel Pool Instrumentation System Upgrades, addresses the seismic qualification of the SFPIS equipment to the primary building structure. The design criteria used in this calculation satisfies the requirements to withstand 2x SSE and will meet the Point Beach seismic installation requirements for mounting the readout displays in the Primary Auxiliary Building.
4	**Please provide the following:** **a) A description of the specific method or combination of methods you intend to apply to demonstrate the reliability of the permanently installed equipment under beyond-design-basis ambient temperature, humidity, shock, vibration, and radiation conditions.** **b) A description of the testing and/or analyses that will be conducted to provide assurance that the equipment will perform reliably under the worst-case credible design basis loading at the location where the equipment will be mounted. Include a discussion of this seismic reliability demonstration as it applies to a) the level sensor mounted in the SFP area, and b) any control boxes, electronics, or read-out and re-transmitting devices that will be employed to convey the level information from the level sensor to the plant operators or emergency responders.**	a) Beyond Design Basis Environment – Westinghouse qualified the components (probe, connector, cable) of the SFPIS located in the SFP area to the beyond design basis environment. Components of the system were subjected to beyond design basis conditions of heat and humidity, thermal and radiation aging mechanisms. This testing confirmed functionality of these system components under these beyond design basis environmental conditions. Westinghouse performed testing to ensure aging of the components in the SFP area will not have a significant effect on the ability of the equipment to perform following a plant design basis earthquake. Reports with the test results document compliance to the Order. Subsequent to Westinghouse's environmental testing and placing the instruments in service at Point Beach, Westinghouse identified a potential condition under evaluation which may warrant upgrade of coax connections in the spent fuel pool area. This potential condition is documented and being addressed under the plant's corrective action program. Reference Westinghouse documents EQ-TP-351, WNA-TR-03149-GEN, and EQ-TP-354 for description of specific qualification methods. Mild Environment – Westinghouse qualified the system components (display panel, sensor) that reside in the mild environment conditions to determine that the components can satisfactorily perform to those conditions. Westinghouse has determined that aging does not have a significant effect on the ability of the equipment to perform following a plant design basis earthquake. Reports with the test results document compliance to the Order. Reference Westinghouse documents EQ-QR-269, WNA-TR-03149-GEN for description of specific methods. Shock and Vibration – SFPIS pool side brackets were analyzed for SSE design requirements per NRC order EA-12-051 and NEI 12-02 guidance. As provided by the NRC Order EA-12-051, the NEI 12-02 guidance and as clarified by the NRC interim staff guidance, the probe, coaxial cable, and the mounting brackets are "inherently resistant to shock and vibration loadings." As a result, no additional shock and vibration testing is required for these components. SFPIS pool side brackets for both the primary and backup Westinghouse SFP measurement channels will be permanently installed and fixed to rigid refuel floors, which are Seismic Category 1 structures. The SFPI system components, such as level sensor and its bracket, display enclosure and its bracket, were subjected to seismic testing, including shock and vibration test requirements. The results for shock and vibration tests were consistent with the anticipated shock and vibration expected to be seen by mounted equipment. The level sensor electronics are enclosed in a NEMA-4X housing. The display electronics panel utilizes a NEMA-4X rated stainless steel housing as well. These housings will be mounted to a seismically qualified wall and will contain the active electronics, and aid in protecting the internal components from vibration induced damage. Reference Westinghouse reports WNA-DS-02957, WNA-TR-04757-GEN for shock and vibration.

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	c) A description of the specific method or combination of methods that will be used to confirm the reliability of the permanently installed equipment such that following a seismic event the instrument will maintain its required accuracy.	below listed standards: • IEEE 344-2004, IEEE Recommended Practice for Seismic Qualification of Class 1E Electrical Equipment for Nuclear Power Generating Stations • IEEE-323-1974, Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations • USNRC Regulatory Guide 1.100, Rev. 3 • USNRC Regulatory Guide 1.92, Rev. 1 • NEE-009-CALC-006 – Anchorage Qualification for Spent Fuel Pool Instrumentation System Upgrades Seismic adequacy of the level sensor probe supporting bracket within the SFP area was demonstrated by analysis as discussed in response to RAI-2. c) Westinghouse has seismically qualified the SFPI instrument and its components. CN PEUS-13-28 describes Pool-side Bracket Seismic Analysis, EQ-QR-269, WNA-TR-03149-GEN, EQ-TP-353 describe remaining seismic qualifications of the instrument components. With the instrument being seismically qualified and installed as described in RAI 2b response, the instrument is assured to maintain reliable and accurate indication when required. Westinghouse report WNA-CN-00301-GEN and Point Beach Engineering Change 276803 provide the channel accuracy from measurement to display. Reference Attachment 2 – items 8, 12, 17
5	**For RAI No. 4 above, please provide the results for the selected methods, tests and analyses utilized to demonstrate the qualification and reliability of the installed equipment in accordance with the Order requirements.**	Below is a summary of the test conditions used by Westinghouse to qualify the SFPIS. These test conditions are also documented in Attachment 2, Items 3 thru 8. Environmental conditions for SFPIS components installed in the spent fuel pool area at Point Beach are bounded by the test conditions. The radiation TID for beyond design basis conditions (BDB) at the floor above the SFP when the SFP water level is at Level 3 is 9.4E+06 R γ, based on the results of calculation N-89-024, Dose Rates at Elev. 66' From Opt. Fuel Assembly in Reactor Cavity During Varying Depths of Water. The results of calculation N-89-024 were adjusted using a conservative "1/r" distance correction to reflect the difference in the location of the top of the fuel rack in the SFP (El. 39'0") and the location used in the calculation (El. 55'2") and a conservative power correction factor of 1.3 to reflect changes in the fuel assembly source term due to power uprate. The BDB radiation value to which the Westinghouse equipment is qualified to is 1E+09 R γ for the probe stainless steel cable in the spent fuel pool and 1E+07 R γ for the equipment above the pool, per Section 5.1.2 of WNA-TR-03149-GEN. When the SFP water level is at Level 3, the only components of the SFPI that are exposed to high radiation are the stainless steel probe and anchor. These components are manufactured from materials that are resistant to radiation effects and which can withstand a 40 year radiation dose. The radiation TID for BDB conditions at the floor above the SFP when the SFP water level is at Level 2 is 8E+01 R γ based on the results of calculation N-89-024 and corrected in the same manner described earlier. Westinghouse updated the design specification (WNA-DS-02957-GEN) and LTR-SFPIS-13-35, Revision 1 ,documentation to include the above technical justification. Environmental Conditions for SFPIS Components in the Spent Fuel Pool Area Level sensor probe, coax coupler and connector assembly, launch plate and pool side bracket assembly, coax cable are

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designed and qualified to operate reliably in the below specified environmental conditions.

Parameter	Normal	BDB
Temperature	50-140°F	212°F
Pressure	Atmospheric	Atmospheric
Humidity	0-95% RH	100% (saturated steam)
Radiation TID γ (above pool)	1E03 Rads	1E07 Rads
Radiation TID γ (12" above top of fuel rack)	1E09 Rads (probe and weight only)	1E07 Rads

Environmental Conditions Outside of the Spent Fuel Pool Area

The level sensor transmitter and bracket, electronics display enclosure and bracket are designed and qualified to operate reliably in the below specified environmental conditions.

Parameter	Normal	BDB	BDB (Level Sensor Electronics Only)
Temperature	50-120°F	140°F	140°F
Pressure	Atmospheric	Atmospheric	Atmospheric
Humidity	0-95% RH	0-95% (non-condensing)	0-100% (non-condensing)
Duration	7 days	7 days	7 days
Radiation TID γ	≤ 1E03 R γ	≤ 1E03 R	≤ 1E03 R

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		Thermal and Radiation Aging – organic components in SFP area Westinghouse documents EQ-QR-269, EQ-TP-354, WNA-TR-03149-GEN (Attachment 2, item 6) provide thermal and radiation aging program details for the SFPI components. Westinghouse completed their thermal and radiation aging testing programs to qualify the SFPI components to 10 years. The Westinghouse summary report, EQ-QR-269, contains an open item to track resolution of the potential shortfall of the radiation dose calculation by Steris. Westinghouse provided an interim position response for the radiation aging program performed on the SFPIS. (LTR-EQ-14-163) It was concluded by Westinghouse that the radiation program for the SFPIS included requirements for margin and uncertainty based on the industry standards and known accuracy of the Steris dosimetry equipment. The radiation aging certificate for the SFPIS equipment identifies that a minimum of 12.1 Mrads was achieved; therefore, it is shown that the actual minimum radiation dose that was achieved for the SFPIS equipment is sufficient for a 10-year specimen. NextEra is tracking closure of this open item. NextEra will complete the test report reviews when available. Seismic Category I Testing Seismic qualification testing performed by Westinghouse along with the technical evaluations performed by Westinghouse confirms that the SFPIS meets the seismic requirements of the vendor's design specification (Attachment 2, item 1). Westinghouse's design specification satisfies the Point Beach installation requirements to withstand a SSE. Vibration Justification As specified in RAI-4, components of the system (i.e., bracket, transmitter enclosure, display enclosure, and readout display) will be permanently installed to meet the requirements to withstand a SSE and will meet the Point Beach seismic installation requirements. Westinghouse has analyzed the pool side bracket to withstand design basis SSE. Other components of the SFPIS were subjected to shock and vibration during the seismic testing and met the requirements necessary for mounted equipment. Sloshing Justification The sloshing calculation performed by Westinghouse (Attachment 2, item 9) was reviewed for a design basis seismic event and found acceptable. Sloshing forces were taken into consideration for the anchorage design of the pool side bracket to ensure the bracket is rigidly mounted to include sloshing affects.

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6	**Please provide the NRC staff with the final configuration of the power supply source for each channel so the staff may conclude the two channels are independent from a power supply assignment perspective.**	The primary level channel will be powered from a 120VAC Emergency Lighting Panel, 37-E. This panel can be aligned to the Unit 2 Train A backup 1E Emergency power supply via MCC 2B-32 which is fed from 2B-03 which is fed from 2A-05 and can be aligned to EDG G-02 (normal) or EDG G-01 (alternate). Panel 37-E is located in the PAB, accessible from plant elevation 66 foot and Is located on the north wall near the Spent Fuel Pool. The backup level channel is powered from 120VAC Emergency Lighting Panel 31-E. Panel 31-E is powered from MCC 1B-42 which is fed from 1B-04 which is fed from 1A-06 and can be aligned to EDG G-03 (normal) or EDG G-04 (alternate). Panel 31-E is located in the PAB, accessible from plant Elevation 66 foot and is located on the south wall near the Spent Fuel Pool
7	**Please provide the results of the calculation depicting the battery backup duty cycle requirements demonstrating that the capacity is sufficient to maintain the level indication function until offsite resource availability assured.**	The Westinghouse Report, WNA-CN-00300-GEN, provides the results of the calculation depicting the battery backup duty cycle. This calculation demonstrates that battery capacity is 4.22 days to maintain the level indicating function to the display location, located in the 26 foot Primary Auxiliary Building at Point Beach. The Flex designated guidelines for Point Beach is 3 days; therefore, the results of the calculation meet the requirements laid out by the site.
8	**Please provide the following:** **a) An estimate of the expected instrument channel accuracy performance under both (a) normal SFP level conditions (approximately Level 1 or higher) and (b) at the beyond design-basis conditions (i.e., radiation, temperature, humidity, post-seismic and post-shock conditions) that would be present if the SFP level were at the Level 2 and Level 3 datum points.** **b) A description of the methodology that will be used for determining the maximum allowed deviation from the instrument channel design accuracy that will be employed under normal operating conditions as an acceptance criterion for a calibration procedure to flag to operators and to technicians that**	a) The Westinghouse documents WNA-CN-00301-GEN (Attachment 2, item 17) and WNA DS 02957-GEN (Attachment 2, item 1) describe the channel accuracy under both (a) normal SFP level conditions and (b) at the Beyond Design Basis (BDB) conditions that would be present if SFP level were at Level 2 and Level 3 datum points. Each instrument channel will be accurate to within ±3"during normal spent fuel pool level conditions. The instrument channels will retain this accuracy after BDB conditions, in accordance with the above Westinghouse documents. This value is within the channel accuracy requirements of the Order (±1 foot). b) The Westinghouse document WNA-TP-04709-GEN (Attachment 2, item 20) describes the methodology for routine testing/calibration verification and calibration methodology. This document also specifies the required accuracy criteria under normal operating conditions. Point Beach calibration and channel verification procedures will follow the guidance and criteria provided in this document. Instrument channel calibration will be performed if the level indication reflects a value that is outside the acceptance band established in the Point Beach calibration and channel verification procedures. Instrument channel loop accuracy and set point deviation/error are determined using the Point Beach Design Guide, DG-I01 for safety related instruments. The methodology used to determine the set point deviation in this standard is consistent with ANSI/ISA-67.04.01-2000. Per this methodology, since drift value was not specified by the vendor, a default random drift value of ±1% of span (or ±1% of full scale, for conservatism) for mechanical components was assigned. A setting tolerance of twice the reference accuracy, which is a typical value, was applied to the indicator to yield an overall setting tolerance of ± 2% of full scale. This value will be used for the calibration procedure being developed for this instrument loop. The resultant non-negligible terms (Reference Accuracy, Drift, Readability, Measurement and Test Equipment Effect, and Setting Tolerance) are all random terms, and will be combined using the Square Root Sum of Squares (SRSS) methodology given in Design Guide

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	the channel requires adjustment to within the normal condition design accuracy.	DG-I01. Thus, the maximum deviation introduced by the indicator, in percent of full span, is computed. Calibration will be performed once per refueling cycle for Point Beach. Per Westinghouse document WNA-TP-04709-GEN (Attachment 2, item 20) calibration on a SFP level channel is to be completed within 60 days of a planned refueling outage considering normal testing scheduling allowances (e.g. 25%). This is in compliance with the NEI 12-02 guidance for Spent Fuel Pool Instrumentation.
9	**Please provide the following:** **a) A description of the capability and provisions the proposed level sensing equipment will have to enable periodic testing and calibration, including how this capability enables the equipment to be tested in-situ.** **b) A description of the ways testing and calibration will enable performance of regular channel checks of each independent channel against the other and against any other permanently-installed SFP level instrumentation.** **c) A description of how functional checks will be performed, and the frequency at which they will be conducted. Describe how calibration tests will be performed, and the frequency at which they will be conducted. Provide a discussion as to how these surveillances will be incorporated into the plant surveillance program.** **d) A description of what preventive maintenance tasks are required to be performed during normal operation, and**	a) Westinghouse calibration procedure WNA-TP-04709-GEN (Attachment 2, item 20) and functional test procedure WNA-TP-04613-GEN (Attachment 2, item 10) describe the capabilities and provisions of SFPI periodic testing and calibration, including in-situ testing. Point Beach will utilize the Westinghouse calibration procedure for the functional check at the pool side bracket. b) The level displayed by the channels will be verified per the Point Beach administrative and operating procedures, as recommended by Westinghouse vendor technical manual WNA-GO-00127-GEN (Attachment 2, item 19). If the level is not within the required accuracy per Westinghouse recommended tolerance in WNA-TP-04709-GEN (Attachment 2, item 20), channel calibration will be performed. c) Functional checks will be performed per Westinghouse functionality test procedure WNA-TP-04613-GEN (Attachment 2, item 10) at the Westinghouse recommended frequency. Calibration tests will be performed per Westinghouse calibration procedure WNA-TP-04709-GEN (Attachment 2, item 20) at the Westinghouse recommended frequency. d) Point Beach will develop preventive maintenance tasks for the SFPI per Westinghouse recommendation identified in the technical manual WNA-GO-00127-GEN (Attachment 2, item 19) to assure that the channels are fully conditioned to accurately and reliably perform their functions when needed.

NRC No.	NRC QUESTION DESCRIPTION	LICENSEE QUESTION RESPONSE
	the planned maximum surveillance interval that is necessary to ensure that the channels are fully conditioned to accurately and reliably perform their functions when needed.	
10	**Please describe the evaluation used to validate that the display location can be accessed without unreasonable delay following a BDB event. Include the time available for personnel to access the display as credited in the evaluation, as well as the actual time (e.g. based on walk-throughs) that it will take for personnel to access the display. Additionally, include a description of the radiological and environmental conditions on the paths personnel might take. Describe whether the display location remains habitable for radiological, heat and humidity, and other environmental conditions following a BDB event. Describe whether personnel are continuously stationed at the display or monitor the display periodically.**	The location for the SFP wide range level instrument displays will be on the 26 foot elevation of the PAB near the C-59 Waste Disposal Control Panel. The displays will be approximately 40 feet below the level sensors in an adjacent area, outside the area surrounding the SFP floor and are physically separated from each other within the PAB. They will be physically protected from the environmental and radiological conditions resulting from a beyond design basis (BDB) event. Westinghouse documents EQ-QR-269 and WNA-TR-03149-GEN (Attachment 2, item 5) provide qualification details for the SFPI components as discussed in RAI-5 above. Site specific calculation 2013-0020, PAB Scenarios for Fukushima Coping, determined the 140 degree temperature and 95% humidity for the location of the equipment at the 26 foot elevation of the PAB was acceptable for the site specific conditions. Analysis was performed using a commercial shielding program (MicroShyshine) to determine the expected dose rate in the 26 foot elevation where the equipment would be located. The fuel assembly data (dimensions and density) in N-89-024 was used; however, the fuel assembly activity was calculated using the data contained in Table 14.3.5-1, Core Activities. The data in Table 14.3.5-1 is at shutdown and is based on a core power level of 1811 MWt. The source term for the fuel assembly was calculated by dividing the core activity by the number of fuel assemblies in the core and then decaying it for 65 hours. The geometry modeled in the program was with the fuel assembly in a SFP storage location with one foot of water over the top of the fuel, the El. 46 foot concrete floor with a thickness of 18" and the dose point at Elevation 30' (four feet above floor level). The dose point was placed at a lateral distance of 150 feet from the center of the fuel assembly. The calculated dose rate was 8 mrem/hr for a 40 fuel assembly array. It is concluded based on this analysis that the equipment is bounded by the testing performed by Westinghouse and the location is accessible for personnel during a BDBE. The 26 foot elevation of the PAB is contained within a Seismic Class I structure that has multiple access routes. Normal access is provided from the south through the Radiation Protection Checkpoint. Alternate access routes are available from the Unit 1 Turbine Hall 8 foot elevation through door number 20 to the PAB and up the stairs to the C-59 panel area. Another alternate access route is available from Unit 2 Turbine Hall 8 foot elevation through door number 12 to the PAB and up the stairs to the C-59 area. Environmental conditions on the 26 foot and 8 foot levels are expected to remain habitable and accessible at saturation conditions in the SFP. Calculation 2013-0020 indicated that with an outside air temperature of 105 degrees that the temperature in the C-59 area reaches a maximum of 105 degrees in the first 24 hours assuming the SFP reached saturated conditions in 10 hours. The 26 foot elevation near the C-59 panel is a designated watch station and manned with a qualified Auxiliary Operator during normal operating conditions. During a beyond design basis event qualified operators would be implementing the FLEX strategies near the wide range level displays and would be available to obtain readings and relay that information to the control room with minimal delays. In the event that no operators are in the vicinity of the level displays it is reasonable to assume that individuals could be dispatched from the control room or the Technical Support Center, obtain readings and report level to the control room in less than one hour. This is based on transient time from the control room to the C-59 area is less than 15 minutes including time to process through the radiation checkpoint. Hand held radios, person to person contact or the PBX phone system are communication

NRC No.	NRC QUESTION DESCRIPTION	LICENSEE QUESTION RESPONSE
		systems available to transmit the information. As stated in PBN's OIP the worst case time to boil is approximately 10 hours with an additional 64 hours estimated for the level in the SFP to reach 2 feet 11 inches above the fuel. This allows sufficient time to determine SFP level and initiate makeup flow to the SFP.
11	**Please provide a list of the procedures addressing operation (both normal and abnormal response), calibration, test, maintenance, and inspection that will be developed for use of the SFP instrumentation. Include a brief description of the specific technical objectives to be achieved within each procedure.**	Answered in Second Six-Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation, dated February 28, 2014 (ML14059A086).
12	**Please provide the following:** **a) Further information describing the maintenance and testing program the licensee will establish and implement to ensure that regular testing and calibration is performed and verified by inspection and audit to demonstrate conformance with design and system readiness requirements. Please include a description of your plans for ensuring that necessary channel checks, functional tests, periodic calibration, and maintenance will be conducted for the level measurement system and its supporting equipment.** **b) A description of how the guidance in**	Answered in Second Six-Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation, dated February 28, 2014 (ML14059A086).

NRC No.	NRC QUESTION DESCRIPTION	LICENSEE QUESTION RESPONSE
	NEI 12-02 section 4.3 regarding compensatory actions for one or both non-functioning channels will be addressed. **c) A description of what compensatory actions are planned in the event that one of the instrument channels cannot be restored to functional status within 90 days.**	
13	**Please provide a description of the in-situ calibration process at the SFP location that will result in the channel calibration being maintained at its design accuracy.**	Westinghouse calibration procedure WNA-TP-04709-GEN (Attachment 2, item 20) and functional test procedure WNA-TP-04613-GEN (Attachment 2, item 10) describe the capabilities and provisions of SFPI periodic testing and calibration, including in-situ testing. Point Beach will utilize the Westinghouse calibration procedure for the functional check at the pool side bracket. The level displayed by the channels will be verified per the Point Beach administrative and operating procedures, as recommended by Westinghouse vendor technical manual WNA-GO-00127-GEN (Attachment 2, item 19). If the level is not within the required accuracy per Westinghouse recommended tolerance in WNA-TP-04709-GEN (Attachment 2, item 20), channel calibration will be performed.

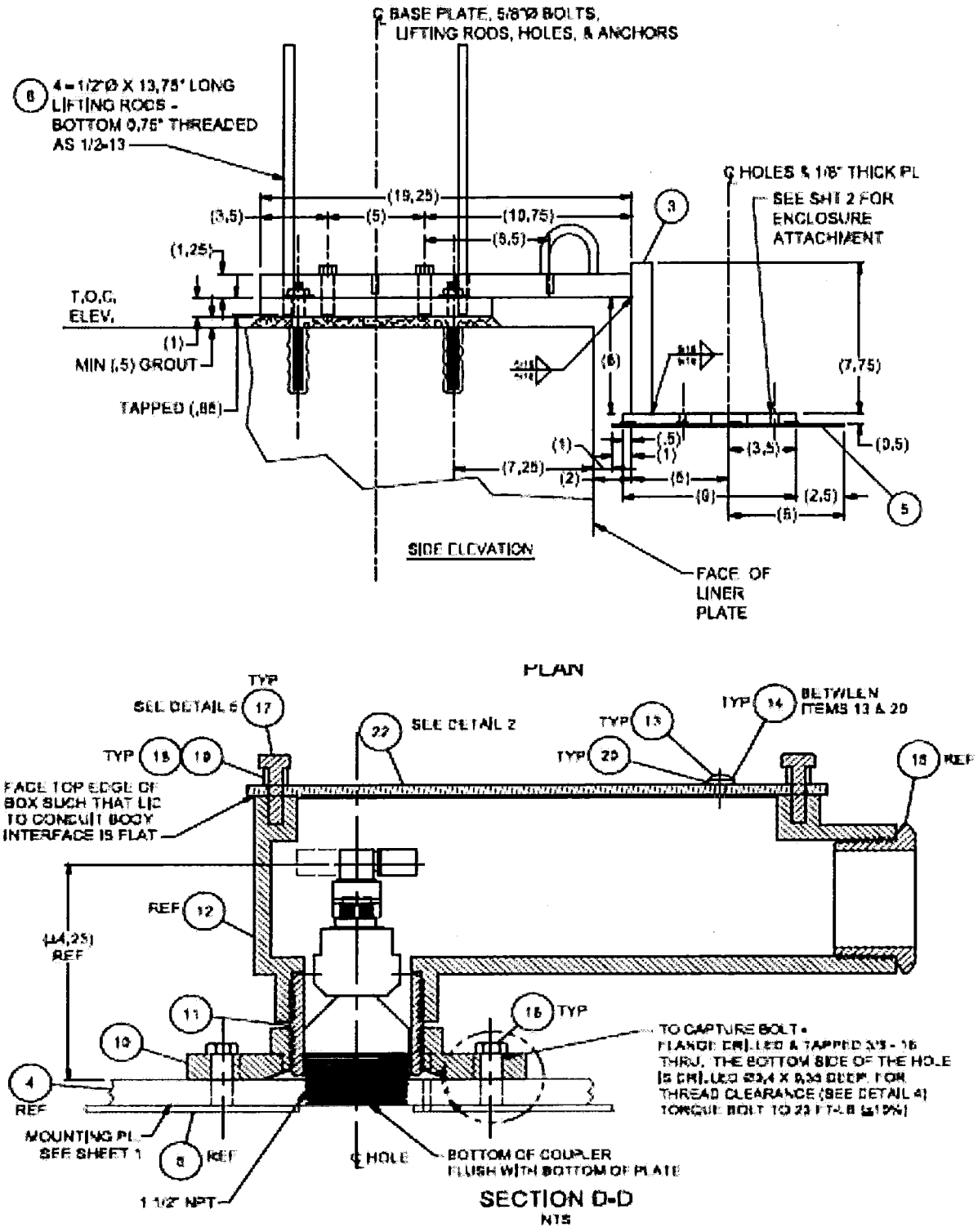
REFERENCES

The following references support the Point Beach SFPI Compliance Document:

1. NextEra Energy Point Beach, LLC's Overall Integrated Plan in Response to March 12, 2012 Commission Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated February 22, 2013 (ML13053A39)
2. NRC Order Number EA-12-051, "Issuance of Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," March 12,2012 (ML12056A044)
3. NextEra Energy Point Beach, LLC, Response to Request for Additional Information Regarding Overall Integrated Plan in Response to Order EA-12-051, "Reliable Spent Fuel Pool Instrumentation," dated July 3, 2013 (ML13186A012)
4. NextEra Energy Point Beach, LLC's First Six Month Status Report in Response to March 12, 2012 Commission Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated August 28, 2013 (ML13241A202)
5. NextEra Energy Point Beach, LLC's Second Six Month Status Report in Response to March 12, 2012 Commission Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated February 28, 2014 (ML14059A086)
6. NextEra Energy Point Beach, LLC's Final Six Month Status Report in Response to March 12, 2012 Commission Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated August 28, 2014 (ML14241A268)
7. NRC Letter to NextEra Energy Point Beach, LLC, Point Beach Nuclear Plant, Units 1 and 2 - Interim Staff Evaluation and Request for Additional Information Regarding the Overall Integrated Plan for Implementation of Order EA-12-051, Reliable Spent Fuel Pool Instrumentation (TAC Nos. MF0729 and MF0730), dated November 18, 2013 (ML13309A011)

ATTACHMENT – 1

Point Beach Schematic of the Level Sensor with Mechanical Attachment Points



#	Topic	Parameter Summary	Westinghouse Reference Document #	Additional Comment	Test or Analysis Results	Licensee Evaluation
1	Design Specification	SFPIS Requirements derived from References 1, 2, & 3	WNA-DS-02957-GEN	Contains technical SFPIS requirements based on NRC order, NEI guidance, and the ISG listed above.	N/A	NextEra has determined that WNA-DS-02957-GEN bounds the Point Beach requirements from References 1, 2 and 3.
2	Test Strategy	Per Requirements.	WNA-PT-00188-GEN	Strategy for performing the testing and verification of the SFPIS and pool-side bracket.	N/A	NextEra has determined WNA-PT-00188-GEN to be acceptable for the current design.
3	Environmental qualification for electronics enclosure with Display	50° F to 140° F, 0 to 95% RH TID ≤ 1E03 R γ normal (outside SFP area) TID ≤ 1E03 R γ abnormal (outside SFP area)	EQ-QR-269 and WNA-TR-03149-GEN for all conditions.	Results are summarized in EQ-QR-269 and WNA-TR-03149-GEN. Radiation Aging verification summarized in Section 5 of WNA-TR-03149-GEN.	Test passed conditions described.	Temperature is ≤ 140°F and humidity is ≤ 95% RH for abnormal conditions in the 26 foot general areas of the Primary Auxiliary Building (Reference 4). The above values are bounded by the values in Section 3.3 of WNA-TR-03149-GEN. The normal and abnormal TID of < 1.E03 R γ from Reference 5 (for Primary Auxiliary Building) is bounded by the justification for TID less than 1E03 rads from Section 5.1.2 of WNA-TR-03149-GEN. Aging Tests – Westinghouse completed its aging qualification of SFPIS to 10 years. Westinghouse has provided an interim position regarding the aging qualification

#	Topic	Parameter Summary	Westinghouse Reference Document #	Additional Comment	Test or Analysis Results	Licensee Evaluation
						and the open item from Steris. NextEra will complete the test report reviews when provided.
4	Environmental Testing for Level Sensor components in SFP area – Saturated Steam & Radiation	50 ° F to 212° F and 100% humidity	EQ-TP-351	Testing summarized in section 3.2.	Passed	The temperature and humidity values of 212°F and 100% RH from Reference 6 (for PAB) are bounded by Section 3.2 of WNA-TR-03149-GEN.
		1E03 R γ normal (SFP area)	WNA-TR-03149-GEN	Thermal Aging & radiation aging verification summarized in Sections 4.1 and 5 (entire system) of WNA-TR-03149-GEN.	Passed	The normal operating dose in the SFP area per Reference 5 is < 1.E03 R γ, which is bounded by Section 5.1.1 of WNA-TR-03149-GEN.
		1E07 R γ BDB (SFP area)	EQ-TP-354 (procedure) Actual test report is in progress.	Additional thermal & radiation aging programs being conducted under test procedure EQ-TP-	Additional aging program is in progress to achieve longer life.	The BDB radiation TID, 12" above top of fuel rack for Point Beach is 7.2E06 R γ, per calculation N-89-024 – Dose Rates at Elev. 66' From Opt. Fuel Assembly In Reactor Cavity during Varying Depths of Water. The

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				354.		BDB radiation value to which the Westinghouse equipment is qualified to is 1.E09 R γ for the probe stainless steel cable and weight and 1E07R γ for the equipment above the pool, per Section 5.1.2 of WNA-TR-03149-GEN. The radiation value of 7.2E06 R γ is lower than 1.E07 R γ to which Westinghouse qualified the instrument to. With SFP water level at Level 3 the only components of SFPI that are exposed to high radiation are the stainless steel probe and the stainless steel anchor. The materials with which the probe and the anchor are manufactured are resistant to radiation effects. The stainless steel anchor and stainless steel probe can withstand 40 year dose. The BDB radiation value for Level 2 is 6.4E01 R γ, per calculation N-89-024. Westinghouse updated the design specification (WNA-DS-02957-GEN) and LTR-SFPIS-13-35, Revision 1 documentation to include the above technical justification. Aging Tests – Westinghouse completed its aging qualification of SFPIS to 10 years. Westinghouse has provided an interim position regarding the aging qualification and the open item from Steris. NextEra will complete the test report reviews when provided.

#	Topic	Parameter Summary	Westinghouse Reference Document #	Additional Comment	Test or Analysis Results	Licensee Evaluation
5	Environmental Testing for Level Sensor Electronics Housing – outside SFP	50° F to 140° F, 0 to 95% RH	WNA-TR-03149-GEN	Testing summarized in section 3.3	Passed	Temperature is ≤ 140°F and humidity is ≤ 95% RH for abnormal conditions in the Primary Auxiliary Building. The above values are bounded by the values in Section 3.3 of WNA-TR-03149-GEN.
		TID ≤ 1E03 R γ normal (outside SFP area) TID ≤ 1E03 R γ abnormal (outside SFP area)	WNA-TR-03149-GEN	Radiation Aging verification summarized in Section 5.	Passed	The normal and abnormal TID of < 1.E03 R γ from Reference 5 (for Primary Auxiliary Building) is bounded by Section 5.1.2 of WNA-TR-03149-GEN.
6	Thermal & Radiation Aging – organic components in SFP area	1E03 R γ normal (SFP area)	EQ-QR-269 and WNA-TR-03149-GEN	Thermal Aging & radiation aging verification summarized in Sections 4.1 and 5 (entire system) of WNA-TR-03149-GEN.	Passed	NextEra has determined EQ-QR-269 and WNA-TR-03149-GEN documents provided to be acceptable for Point Beach installation. See response to Item 4 above.
		1E07 R γ BDB (SFP area)	EQ-TP-354 (procedure) Actual test report is in progress.	Additional thermal & radiation aging programs being conducted under test procedure EQ-TP-354.	Additional aging program is in progress to achieve longer life.	Aging Tests – Westinghouse completed its aging qualification of SFPIS to 10 years. Westinghouse has provided an interim position regarding the aging qualification and the open item from Steris. NextEra will complete the test report reviews when provided.

#	Topic	Parameter Summary	Westinghouse Reference Document #	Additional Comment	Test or Analysis Results	Licensee Evaluation
7	Basis for Dose Requirement	SFP Normal Conditions: 1E03 R γ TID (above pool) 1E09 R γ TID (1' above fuel rack) SFP BDBE Conditions: 1E07 R γ TID (above pool) < 1E07 R γ TID (1' above fuel rack)	LTR-SFPIS-13-35 and WNA-DS-02957-GEN	Explanation of Basis for Radiation Dose Requirement (includes the clarification of production equivalency of electronics enclosure used for Seismic and EMC Testing)	Passed for all conditions	NextEra has determined the basis documents to be acceptable. The normal operating dose in the SFP area per Reference 5 is < 1.E03 R γ, which is bounded by Section 5.1.1 of WNA-TR-03149-GEN. The BDBE radiation of 7.2E06 Rem above the pool high water level (Level 1) from Reference 9 is bounded by Section 5.1.1 of WNA-TR-03149-GEN. Radiation values 1' above the fuel rack are 2E07 Rem from Reference 5. However, the justification for components that are inherently resistant to radiation effects in Section 5.1.1 of WNA-TR-03149-GEN is bounding for Point Beach.
8	Seismic Qualification	Per Spectra in WNA-DS-02957-GEN	EQ-QR-269	EQ-QR-269 summarizes the testing performed by Westinghouse	Passed	The Spectra in Reference 6 for the poolside mounting brackets bounds Point Beach for meeting the requirements to withstand a SSE. Instrument panel mounting is qualified by Reference 6.
			WNA-TR-03149-GEN	WNA-TR-03149-GEN provides high level summary of the pool-side bracket analysis and optional RTD.	Passed	

#	Topic	Parameter Summary	Westinghouse Reference Document #	Additional Comment	Test or Analysis Results	Licensee Evaluation
			EQ-TP-353 (procedure)	Seismic Pull test for new connectors is in progress under procedure, EQ-TP-353.	Passed	
9	Sloshing	N/A	LTR-SEE-II-13-47	Calculation to demonstrate that probe will not be sloshed out of the SFP.	Passed	NextEra has determined WNA-TR-03149-GEN to be acceptable. Adequate sloshing forces (inclusive of vertical and horizontal impact forces, hydrodynamic forces) were accounted to calculate the overall sloshing forces. These forces were added to design the bracket anchorage, to ensure the probe will not be sloshed due to a beyond design basis seismic event.
			WNA-TR-03149-GEN	Sloshing is also addressed in Section 7.2.	Passed	
10	Spent Fuel Pool Instrumentation System Functionality Test Procedure	Acceptance Criteria for Performance during EQ testing	WNA-TP-04613-GEN	Test procedure used to demonstrate that SFPIS meet its operational and accuracy requirements during Equipment Qualification Testing programs.	See applicable EQ test.	NextEra has determined WNA-TP-00189-GEN "Integrated Functional Test Plan" to be acceptable.
11	Boron Build-Up	Per requirement in WNA-DS-02957-GEN	WNA-TR-03149-GEN	Boron build up demonstrated through Integrated	Passed	NextEra has determined WNA-TP-00189-GEN "Integrated Functional Test Plan" to be acceptable.

#	Topic	Parameter Summary	Westinghouse Reference Document #	Additional Comment	Test or Analysis Results	Licensee Evaluation
				Functional Test (IFT).		
12	Pool-side Bracket Seismic Analysis	N/A	CN-PEUS-13-28	Also includes hydrodynamic forces, as appropriate.	Passed	See response to RAI No. 4. Point Beach seismic requirements to withstand a SSE are bounded by Reference 6 for the poolside mounting brackets.
13	Additional Brackets (Sensor Electronics and Electronics Enclosure)	N/A	WNA-DS-02957-GEN	Weights provided to licensees for their own evaluation.	N/A	See response to RAI No. 4. Point Beach has evaluated the seismic mounting requirements. Instrument panel mounting is qualified by Reference 6.
14	Shock & Vibration	WNA-DS-02957-GEN	WNA-TR-03149-GEN	Section 7 provides rationale and summary of RTD.	N/A	NextEra has determined the Westinghouse evaluation of shock and vibration in WNA-TR-03149-GEN is acceptable.
15	Requirements Traceability Matrix	Maps Requirements to documentation / evidence that Requirement is met	WNA-DC-00246-WEP	The compliance matrix maps the requirements of the NRC order, NEI guidance, ISG to the applicable technical requirements in the SFPIS design specification and maps the design specification requirements to the documentation demonstrating the	N/A	NextEra has reviewed the compliance matrix provided by Westinghouse. Some items do not apply to Point Beach and should be removed from the matrix. There are items that do apply requiring revision.

#	Topic	Parameter Summary	Westinghouse Reference Document #	Additional Comment	Test or Analysis Results	Licensee Evaluation
				requirement is met.		
16	Westinghouse Factory Acceptance Test, including testing of dead-zones	IFT Functional Requirements from WNA-DS-02957-GEN	WNA-TP-04752-GEN	The Integrated Functional Test (IFT) demonstrates functionality of the full system for each customer's FAT, which includes calibration of each channel.	Point Beach IFT executed/passed	NextEra has reviewed the final test reports and found them to be acceptable.
		12" dead-zone at top of probe 4" dead-zone at bottom of probe	WNA-TP-04752-GEN	Dead-zone tests are in Section 9.6.2.	N/A	
17	Channel Accuracy	+/- 3 inches per WNA-DS-02957-GEN	WNA-CN-00301-GEN	Channel accuracy from measurement to display.	Passed	NextEra has reviewed WNA-DS-02957-GEN and WNA-CN-00301-GEN and found that channel accuracy requirements are met. Point Beach calculated channel accuracy is ±6 inches.

#	Topic	Parameter Summary	Westinghouse Reference Document #	Additional Comment	Test or Analysis Results	Licensee Evaluation
18	Power Consumption	3 day battery life (minimum) 0.257 Amps power consumption	WNA-CN-00300-GEN	N/A	Passed	Point Beach has reviewed WNA-CN-00300-GEN and concluded that battery life of > 72 hours is available for Westinghouse display enclosure and meets the Order requirements. The 0.257A loading does not challenge the Point Beach electrical distribution system.
19	Technical Manual	N/A	WNA-GO-00127-GEN	Information and instructions for Operation, Installation, use, etc. are included here.	N/A	Point Beach will utilize WNA-GO-00127-GEN as input for procedure preparation.
20	Calibration	Routine Testing/calibration verification and Calibration method	WNA-TP-04709-GEN	Also, includes preventative maintenance actions such as those for Boron buildup and cable probe inspection.	N/A	Point Beach will utilize WNA-TP-04709-GEN as input for procedure preparation.
21	Failure Modes and Effects Analysis (FMEA)	N/A	WNA-AR-00377-GEN	Addresses mitigations for the potential failure modes of the system.	N/A	Point Beach will utilize WNA-AR-00377-GEN as input for procedure preparation.
22	Emissions Testing	RG 1.180, Rev. 1 test conditions	WNA-TR-03149-GEN EQ-QR-269	N/A	Passed	NextEra has reviewed the test report and found it meets requirements for radiated emissions limits and criterion B for susceptibility testing based on the modifications implemented.

REFERENCES:

1) ML12056A044, NRC Order EA-12-051, "ORDER MODIFYING LICENSES WITH REGARD TO RELIABLE SPENT FUEL POOL INSTRUMENTATION," Nuclear Regulatory Commission, March 12, 2012.
2) ML12240A307, NEI 12-02 (Revision 1), "Industry Guidance for Compliance with NRC Order EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation" August, 2012.
3) ML12221A339, Revision 0, JLD-ISG-2012-03, Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation, August 29, 2012, Nuclear Regulatory Commission Japan Lessons-Learned Project Directorate.
4) 2013-0020 – PAB Scenarios for Fukushima Coping Calculation
5) N-89-024 – Dose Rates at Elev. 66' From Opt. Fuel Assembly In Reactor Cavity during Varying Depths of Water
6) Westinghouse Calculation CN-PEUS-13-28 - Seismic Analysis of the SFP Mounting Bracket at Point Beach Units 1&2 and St. Lucie Units 1&2 Revision 2
7) NEE-009-CALC-006 – Anchorage Qualification for Spent Fuel Pool Instrumentation System Upgrades
8) Engineering Change Package 276803 - Spent Fuel Pool Instrumentation – Fukushima
9) Point Beach UFSAR Table 14.3.5-1 Core Activities
10) Westinghouse Proprietary Document, WNA-DS-02957-GEN, "Spent Fuel Pool Instrumentation System (SFPIS) Standard Product System Design Specification," Revision 4.
11) Westinghouse Proprietary Document, WNA-PT-00188-GEN, "Spent Fuel Pool Instrumentation System (SFPIS) Standard Product Test Strategy," Revision 2.
12) Westinghouse Proprietary Document, EQ-QR-269, "Design Verification Testing Summary Report for the Spent Fuel Pool Instrumentation," Revision 0
13) Westinghouse Proprietary Document, WNA-TR-03149-GEN, "SFPIS Standard Product Final Summary Design Verification Report," Revision 0
14) Westinghouse Proprietary Document, EQ-TP-351, "Environmental Qualification Test Procedure for the Spent Fuel Pool Instrumentation System Coaxial Cable and Connectors Inside the Spent Fuel Pool Area," Revision 0
15) Westinghouse Proprietary Document, EQ-TP-354, "Mechanical Preconditioning, Thermal Aging, and Radiation Aging Procedure for the Spent Fuel Pool Instrumentation System Coaxial Cables and Couplers," Revision 0
16) Westinghouse Proprietary Document, EQ-TP-360, "Environmental Test Procedure for the Sensor Housing for Spent Fuel Pool Instrumentation System," Revision 0
17) Westinghouse Proprietary Document, LTR-SFPIS-13-35, "SFPIS: Basis for Dose Requirement and Clarification of Production Equivalency of Electronics Enclosure Used for Seismic Testing," Revision 1.
18) Westinghouse Proprietary Document, LTR-SEE-II-13-47, "Determination if the Proposed Spent Fuel Pool Level Instrumentation can be Sloshed out of the Spent Fuel Pool during a Seismic Event," Revision 0

19) Westinghouse Proprietary Document, WNA-TP-04613-GEN, "Spent Fuel Pool Instrumentation System Functionality Test Procedure," Revision 5.

20) Westinghouse Proprietary Document, WNA-DC-00246-WEP, "Spent Fuel Pool Instrumentation System FPL/NextEra – Point Beach 1&2 Compliance Matrix," Revision 1

21) Westinghouse Proprietary Document, WNA-TP-04752-GEN, "Spent Fuel Pool Instrumentation System Standard Product Integrated Functional Test Procedure," Revision 1.

22) Westinghouse Proprietary Document, WNA-CN-00301-GEN, "Spent Fuel Pool Instrumentation System Channel Accuracy Analysis," Revision 1.

23) Westinghouse Proprietary Document, WNA-CN-00300-GEN, "Spent Fuel Pool Instrumentation System Power Consumption Calculation," Revision 1.

24) Westinghouse Proprietary Document, WNA-GO-00127-GEN, "Spent Fuel Pool Instrumentation System Standard Product Technical Manual," Revision 1.

25) Westinghouse Proprietary Document, WNA-TP-04709-GEN, "Spent Fuel Pool Instrumentation System Calibration Procedure," Revision 4.

26) Westinghouse Proprietary Document, WNA-AR-00377-GEN, "Spent Fuel Pool Instrumentation System Failure Modes and Effect Analysis," Revision 3.

27) Westinghouse Proprietary Document, LTR-EQ-14-163, "Interim Position for Radiation Aging of the Spent Fuel Pool Instrumentation System"