NEXTera ENERGY POINT BEACH

January 16, 2015

NRC 2015-0001
10 CFR 50.90

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

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

Response to Request for Additional Information (Probabilistic Risk Assessment)
License Amendment Request 271 Associated with NFPA 805

References:
(1) NextEra Energy Point Beach, LLC, letter to NRC, dated June 26, 2013, "License Amendment Request 271, Transition to 10 CFR 50.48(c) - NFPA 805, 'Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants,' 2001 Edition" (ML131820453)
(2) NRC e-mail to NextEra Energy Point Beach, LLC, dated September 9, 2013, "Point Beach Nuclear Plant, Units 1 and 2 – Acceptance Review Regarding the NFPA 805 License Amendment Request – Opportunity to Supplement (TAC Nos. MF2372 and NF2373)" (ML13256A197)
(3) NextEra Energy Point Beach, LLC, letter to NRC, dated September 16, 2013, "License Amendment Request 271 Supplement 1 Transition to 10 CFR 50.48(c) – NFPA 805" (ML13259A273)
(4) NRC letter to NextEra Energy Point Beach, LLC, dated September 25, 2013, "Point Beach Nuclear Plant, Units 1 and 2 - Acceptance of Licensing Action re: License Amendment Request to Transition to NFPA 805, 'Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants' (TAC NOS. MF2372 and MF2373)" (ML13267A037)
(5) NRC e-mail to NextEra Energy Point Beach, LLC, dated November 19, 2014, "RE: Point Beach Nuclear Plant, Units 1 and 2 – Follow-up Requests for Additional Information (AFPB) re: NFPA 805 License Amendment Request Review (TAC Nos. MF2372 and MF2373)" (ML14325A540)

Pursuant to 10 CFR 50.90, NextEra Energy Point Beach, LLC, (NextEra) requested to amend Renewed Facility Operating Licenses DPR-24 and DPR-27 for Point Beach Nuclear Plant (PBNP), Units 1 and 2 (Reference 1 and supplemented via Reference 3). The NRC accepted the license amendment request for review in response to Reference (2), as documented in Reference (4).

The NRC Staff has determined that additional information (Reference 5) is required to complete its evaluation. The Enclosure provides the NextEra response to the NRC Staff's request for additional information.

This letter contains no new Regulatory Commitments and no revisions to existing Regulatory Commitments.

If you have any questions regarding this letter, please contact Mike Millen at (920) 755-7845.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on January 16, 2015.

Very truly yours,

NextEra Energy Point Beach, LLC

Eric McCartney
Site Vice President

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE

NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (PROBABILISTIC RISK ASSESSMENT) LICENSE AMENDMENT REQUEST 271 ASSOCIATED WITH NFPA 805

Pursuant to 10 CFR 50.90, NextEra Energy Point Beach, LLC, (NextEra) requested to amend renewed Facility Operating Licenses DPR-24 and DPR-27 for Point Beach Nuclear Plant (PBNP), Units 1 and 2 (Reference 1 and supplemented via Reference 3). The NRC accepted the license amendment request for review in response to Reference (2), as documented in Reference (4).

The NRC Staff has determined that additional information (Reference 5) is required to complete its evaluation. This Enclosure provides the NextEra responses to the NRC Staff's requests for additional information.

PRA RAI 05.01 *(Justification of Reduced Transient Heat Release Rates)*

It is not clear that the response to PRA RAI 05.b (ADAMS Accession No. ML14210A645) provides adequate justification for the reduced heat release rates (HRRs) credited in the Fire PRA. The response explains that the "quantities of combustibles needed to perform activities would not typically exceed the reduced heat release rates modelled in the fire PRA", but that "I[i]n the event that combustibles are required to be brought into these areas, their presence will require a continuous fire watch." The NRC staff notes that for the two cited fire areas, the licensee's Fire PRA does not credit a continuous fire watch, but rather reduced HRRs, and that the controls described in the response do preclude the possibility of transient combustibles present in quantities that would exceed the reduced HRR used in the fire PRA. Accordingly, it is not clear whether the controls discussed in the RAI response are the current controls or the updated controls credited in the Fire PRA.

In light of these observations, please describe the updated controls that are credited in the Fire PRA for limiting transient combustibles, and justify that they provide an adequate basis for the reduced HRRs used in the Cable Spreading Room and Vital Switchgear Room.

NextEra Response

The controls to be imposed will be to restrict all transient combustibles in these fire zones with specific compensatory actions to be in place in timeframes during which transient combustibles must be in the fire zone to support a particular maintenance or testing activity. With these controls in place, the expected transient combustibles in the fire zones will be negligible, and 69 kW (FZ 305, Vital Switchgear Room) and 142 kW (FZ 318, Cable Spreading Room) heat release rates (HRR) are assumed to bound potential infringement of the new transient controls.

The 69 kW and 142 kW HRRs are based on an evaluation of the potential infringement of the proposed administrative controls, where administrative procedures will implement a zero transient combustible control criteria, except for transient combustibles to support maintenance or testing with associated specific compensatory actions . The expectation is that the implementation of a zero transient combustible limit with exceptions noted will significantly reduce the size of potential transient combustibles, which could be placed in the zone infringing on the applied HRR limits. This type of transient combustible control is a newly imposed criterion that will require a monitoring program to address future adherence to the requirements. Should an infringement of these controls occur, the results of post-transition monitoring with respect to these controls will be the basis for implementation of appropriate corrective actions.

PRA RAI 10.01 *(Main Control Room Abandonment Modeling)*

The response to PRA RAI 10 (ADAMS Accession No. ML14210A645) does not directly address the question in the RAI about how estimation of CDF/CLERP for Main Control Room (MCR) abandonment due to loss of habitability (LOH) considers fire induced failures including spurious actuations. Regarding determination of non-abandonment scenario CCDP/CLERP, the response states: "N[n]o split fractions are used to credit abandonment," and that "in some cases, this is conservative as there is some possibility that operators decide to abandon." It is not completely clear how these statements address the question of how fire impacts are considered in the estimation of CDF/LERF. The analysis appears to indicate that the human error probabilities (HEPs) used to calculate the CCDP for MCR abandonment do not include actions (e.g., manually trip reactor coolant pumps (RCPs), isolation of letdown flow, isolation of open main steam isolation valves (MSIVs)) to mitigate fire-induced failures or actuations.

The response provided to PRA RAI 16 appears to indicate that a single CDF/LERF was used to model MCR abandonment due to LOH (i.e., one scenario with a CCDP of 0.56). This appears inconsistent with the response to PRA RAI 10 which refers to more than one CDF for these scenarios (e.g., the phrase is used: "are multiplied together to determine the abandonment CDF for each scenario"). In general, due to the range of failures associated with remote shutdown operations, it is expected that a range of CCDPs is needed to characterize the likelihood of shutdown failure associated with MCR abandonment for either LOH or loss of control (LOC).

In light of these observations, please:

a) *Explain how estimation of CDFs/CLERPs for MCR abandonment due to LOH addresses fire induced failures including spurious actuations, and why the estimation of CCDP/CLERP does not appear to include operator actions to recover the impact of spurious actuations. Identify the actions credited in the Fire PRA for MCR abandonment and justify that the operator actions credited include actions necessary for alternate shutdown.*

b) *Explain the statements made in response to PRA RAI 10, "N[n]o split fractions are used to credit abandonment" and that "in some cases, this is conservative as there is some possibility that operators decide to abandon," and how these statements address the question of fire-induced impact on estimation of CDFs/CLERPs for MCR abandonment on LOH.*

c) *Justify the single abandonment CCDPs for the post transition and compliant plants for both LOH and LOC given that a range of CCDPs is possible.*

NextEra Response

a) The development of the post-transition model CCDP/CLERP values for Main Control Room (MCR) abandonment for loss of habitability is based on a detailed Human Reliability Analysis (HRA) of AOP-10A, "Safe Shutdown – Local Control." AOP-10A is designed to accommodate both LOH and LOC for the worst-case Appendix R fire scenario in the MCR, Cable Spreading Room, or 4160V Vital Switchgear Room, with extensive damage that results in alternate shutdown outside of the main control room. AOP-10A includes initial steps in the MCR to isolate and trip critical plant equipment related to safe shutdown. This includes, but is not limited to, the following actions performed in the MCR to prevent spurious operation and enable recovery of components that may have spuriously operated: de-energizing feeder breakers, tripping Reactor Coolant Pumps (RCPs), tripping main feed pumps, shutting Main Steam Isolation Valves (MSIVs), shutting PORV block valves. Additionally, later steps in the AOP-10A procedure and attachments prescribe operators to locally isolate or recover equipment that may or may not have been affected by fire-induced failures, which includes fire-induced spurious operations.

Based on AOP-10A and its attachments, actions credited in the detailed MCR Abandonment HRA are developed for the following:

- Failure of Unit 1 Control Operator to provide AFW decay heat removal to each unit per AOP-10A Attachment C by aligning Turbine Driven AFW pump to B Steam Generator.
- Failure of Third Reactor Operator to provide AFW decay heat removal to each unit per AOP-10A Attachment B by gagging open Turbine Driven AFW pump recirculation valves to prevent pump damage.
- Failure of Unit 2 Control Operator to provide charging to each unit per Attachment D by aligning a charging pump to alternate shutdown power and by local valve alignment.
- Failure of DOS to align B-08 and B-09 to charging and SW pumps to each unit per AOP-10A Attachment A by aligning alternate power to charging and service water pumps.
- Failure of Third Reactor Operator to align Gas Turbine Generator G-05 to 13.8 kV Bus H-01 for both units per AOP-10A Attachment B by starting G-05 and supplying Bus H-01.
- Failure of an operator to place battery charger in service for both units per 0-SOP-DC-005 and 0-SOP-DC-003 by aligning the D-109 battery charger to bus D-03 when it is powered from bus B-81.

The HRA for each of the events in the list above includes additional conservative timing for performing steps 1-4 of EOP-0 (Unit 1/2 Safety Related, REACTOR TRIP OR SAFETY INJECTION), along with the steps of AOP-10A (MCR isolation, etc.) that precede the events/actions in the above list.

For each MCR fire scenario, where loss of habitability forces abandonment of the MCR and where local safe shutdown is required, the same procedure (AOP-10A) is executed. Because AOP-10A accommodates potential fire-induced equipment failures in the most severe fire scenario cases, it is justified for the post-transition model to use the failure probability of the operator actions in AOP-10A as a bound for the variety of possible fire-induced failures for fire scenarios that lead to MCR abandonment due to LOH.

b) The purpose of the first statement ("N[n]o split fractions are used to credit abandonment") is to identify that there is no split fraction used to partition ignition frequency between abandonment and non-abandonment cases. The full fire frequency is applied to both scenarios that lead to abandonment caused by LOH (utilizing AOP-10A for alternate shutdown), and to non-abandonment scenarios where AOP-10A is not used. In abandonment cases caused by LOH, recoveries of fire-induced failures are captured in and are bounded by AOP-10A as per the discussion in the response to Part (a) of this RAI. Non-abandonment scenarios utilize actions outside of AOP-10A to mitigate potential fire-induced impacts. The fraction of scenarios leading to loss of habitability is not removed. Therefore, the non-abandonment fire frequencies are slightly larger than they would be, if a split-fraction for the abandonment cases was applied. As a result, the CDF/LERF values are conservative due to the higher fire frequencies.

   The second statement ("In some cases, this is conservative as there is some possibility that operators decide to abandon") reflects that no credit is given for the operators' decision to execute AOP-10A outside of LOH for the post-transition model. For example, a fire scenario in the MCR has the potential to include a decision to use AOP-10A should the loss of control be severe enough to warrant alternate shutdown. In all applicable fire areas and scenarios of the compliant model, critical actions required for alternate shutdown are considered for LOH and LOC as per the discussion in the response to Part (c) of this RAI. This treatment of LOH/LOC leads to conservative CDF/LERF results in the post-transition model, and may be non-conservative for the CDF/LERF values for the compliant case, as per discussion in the response to Part (c), to maintain conservatism in delta risk calculations between the post-transition and compliant models.

c) As stated in the responses to Parts (a) and (b) of this RAI, LOH is bounded in the post-transition plant model using AOP-10A. This procedure was designed for a worst-case Appendix R fire and incorporates procedural steps to isolate and recover from fire-induced failures caused by fires in the MCR, Cable Spreading Room, or 4160V Vital Switchgear Room. Abandonment actions (AOP-10A) are not credited in the PRA for fires that can cause a loss of control (LOC) in the MCR in the post-transition model. Applicable Emergency Operating Procedures (EOPs) and Abnormal Operating Procedures (AOPs) that do not invoke AOP-10A are utilized for those fires.

As per Attachment W of the LAR, the compliant plant model uses Conditional Core Damage Probability (CCDP) and Conditional Large Early Release Probability (CLERP) values of 0.19 and 0.019, respectively, as upper limits for any fire scenario in the 4kV Vital Switchgear Room (Fire Area A24), Cable Spreading Room (Fire Area A30) and Control Room (Fire Area A31). Any CCDP/CLERP values for scenarios in Fire Areas A24, A30, and A31 determined to be below these upper limits are retained to avoid non-conservatism in delta risk calculations. The abandonment CCDP/CLERP values for the compliant model assume that operators are perfect in recognizing that a fire has become severe enough to warrant alternate shutdown and operators are perfect in executing the steps required for alternate shutdown. The values are thereby only formulated based on a summation of significant equipment failures related to alternate shutdown (gas turbine G-05 and turbine-driven AFW pumps 1(2)P-29). Essentially, this allows for the compliant case to take credit for both LOC and LOH with a conservative basis (i.e., consequences of severe fires in these compliant plant fire areas with high CCDP/CLERP values are overridden by alternate shutdown actions to mitigate risk and to provide an upper bound for compliant plant risk results).

PRA RAI 13.01 *(Fire PRA Credit for Westinghouse RCP Seals)*

There appears to be a possible mismatch between the RCP shutdown seals that will be installed and credit taken for these seals in the Fire PRA. The response to PRA RAI 13 (ADAMS Accession No. ML14210A645) states that report PWROG-14001-P/NP, "PRA Model for the Generation III Westinghouse Shutdown Seal" was used as the basis for credit taken in the Fire PRA integrated analysis provided in response to PRA RAI 03. However, updated Table S-2 of the LAR, Item MOD-3 (The RCP Seal will be upgraded to Westinghouse Shutdown Seals), does not indicate which seals (e.g., Generation 2 or 3 Westinghouse Shutdown Seals) will be installed.

Therefore, please provide the following:

a) *Explain which Westinghouse Shutdown Seals will be installed.*

b) *If the credit taken in the Fire PRA is not consistent with the report cited in the RAI response, then identify the proper report on which the analysis relies.*

NextEra Response

a) Point Beach is installing the Westinghouse Electric Company (WEC) SHIELD® Generation III Shutdown Seal (SDS) into the Reactor Coolant Pump (RCP) seals for Point Beach Nuclear Plant, Units 1 and 2. The Generation III SDS was installed in the two Unit 1 RCPs during the U1R35 refueling outage in October 2014 and is planned for installation in the two Unit 2 RCPs during U2R34 scheduled in fall 2015.

b) The report cited in the response to PRA RAI 03 – Integrated Analysis, Table PRA RAI 3.a-1, Item 13, was WEC Report PWROG-14001-P/NP, "PRA Model for the Generation III Westinghouse Shutdown Seal, PA-RMSC-0499R2." This report is applicable to the SDSs installed and planned to be installed in Point Beach Nuclear Plant, Units 1 and 2, respectively. The PRA model for the WEC SHIELD® Generation III SDS was incorporated into the Fire PRA for the quantification results provided in the 120 Day RAI Response (Reference 6).

   A markup to the updated LAR Table S-2 from the September 25, 2014 Letter NRC 2014-0056 (Attachment 5 of Enclosure 2) is included at the end of this enclosure.

PRA RAI 16.01 *(Calculation of Change-in-Risk)*

The approach and basis for calculation of the change-in-risk for "MCR abandonment non-habitability cases" (i.e., loss of control (LOC) cases) is not clear. This response and updated Section W.2.1 of the LAR explain that MCR abandonment is credited in the compliant plant model for the MCR, Cable Spreading Room, and the 4kV Vital Switchgear Room, for both habitability and non-habitability scenarios. In contrast, the response indicates that in the post-transition plant model MCR abandonment is not credited for LOC scenarios. Accordingly, it appears that for these fire areas the compliant and post-transition plants for LOC scenarios are based on different models: MCR abandonment is modeled for the compliant plant and not modeled for the post-transition plant.

For the MCR abandonment scenarios, the response explains that in the compliant plant model operator actions are assumed to be successful and so the CCDP (0.19) is based on the likelihood of random hardware failures associated with alternate shutdown. The response does not discuss contributors to CCDP for the post-transition plant model, but the NRC staff infers that the contributors are fire-induced and random failures of normal shutdown systems and actions. Of concern is that the difference in compliant plant and post-transition plant models can produce anomalous change-in-risk results. For example, it is possible that the post-transition plant CDF/LERF could be less than the compliant plant CDF/LERF which would result in a negative change-in-risk. Given a CCDP of 0.19 for MCR abandonment, it appears likely that there are a number of fires in the cited abandonment fire areas that would result in a lower CCDP for the post-transition plant model. The staff notes that a conservative estimate of the compliant plant model CCDP can lead to non-conservative change-in-risk estimates. The response to PRA RAI 16.a appears to address, though it is not certain, the possibility of anomalous change-in-risk results.

In light of these observations, please provide the following:

a) *Explain how calculation of the change-in-risk for LOC scenarios in which MCR abandonment is credited in the compliant but not the post-transition plant model avoids producing anomalous results such as a negative change-in-risk. Also, explain what the following phrase means: "An example of application would be if a specific fire scenario in an abandonment area had a CCDP of 0.75 this CCDP would be replaced with the 0.19 ceiling, because it is assumed the operators have perfect judgment to initiate abandonment, when it will reduce plant risk."*

b) *Of the nine random failure contributors to the estimate of 0.19 for CCDP of the compliant plant in MCR abandonment scenarios, discuss the dominant contributors and justify that an overly conservative complaint plant CCDP estimate does not lead to a non-conservative change-in-risk estimate.*

NextEra Response

a) The post-transition model does not credit Main Control Room (MCR) abandonment/alternate shutdown actions (AOP-10A, Safe Shutdown – Local Control) due to loss of control (LOC) for fires in the MCR, Cable Spreading Room, and 4kV Vital Switchgear Room. Fires that do not force abandonment due to loss of habitability (LOH) in the post-transition model utilize AOPs and EOPs that do not invoke AOP-10A. This conservative approach results in CDF/LERF estimates relating to abandonment that are higher than the expected best estimate for the post-transition plant. The compliant plant has an upper limit for fire scenarios in the MCR, Cable Spreading Room, and 4kV Vital Switchgear Room based on abandonment CCDP/CLERP values of 0.19 and 0.019, respectively. These values are based on a summation of significant equipment failures related to alternate shutdown (gas turbine G-05 and turbine-driven AFW pumps 1(2)P-29).

   The compliant model assumes the operators recognize the need for abandonment of the MCR caused by loss of control with perfect cognition. Therefore, if a fire scenario in the MCR, Cable Spreading Room, and 4kV Vital Switchgear Room is quantified and has CCDP and CLERP values that exceed 0.19 and 0.019, respectively, the quantified CCDP/CLERP values are replaced with the ceiling values (i.e., for the cited example in this question: if an MCR fire scenario were to have a CCDP of 0.75 in the compliant model, it would be replaced with 0.19). This approach is more liberal for the LOC fire scenarios in fire areas where the abandonment procedure is applicable and results in slightly lower CDF/LERF values, as compared to best estimate results relating to the abandonment modeling.

   Since the post-transition model incorporates an approach for LOC that yields potentially higher than expected best estimates for risk, and the compliant model incorporates an approach for LOC that yields potentially lower than expected best estimates for risk, the change-in-risk values are conservatively higher with respect to treatment of LOC and do not contribute to anomalous results such as a negative change-in-risk.

b) The following are the nine random failure contributors to the estimated 0.19 CCDP for the compliant plant in MCR abandonment scenarios (see Attachment W of the LAR):
   - GAS TURBINE GENERATOR FAILS TO RUN AFTER THE FIRST HOUR
   - GAS TURBINE G-05 FAILS TO RUN IN THE FIRST HOUR
   - GAS TURBINE G-05 FAILS TO START
   - GAS TURBINE G-05 UNDER TEST AND MAINTENANCE
   - TDP 1(2)P29 FAILS TO RUN IN THE FIRST HOUR
   - TDP 1(2)P29 FAILS TO RUN IN HOURS 2-24
   - TDP 1(2)P29 TEST AND MAINTENANCE
   - TDP 1(2)P29 FAILS TO START
   - 1(2)P29 MIN FLOW RECIRC VALVE SPURIOUS ISOLATION

The most dominant contributors to the 0.19 CCDP are related to the failures of G-05. The summation of the failure probabilities is approximately 0.17 for gas turbine generator failure modes listed above. The most dominant individual failure is the unavailability of G-05 due to testing and maintenance (0.099).

This approach for the compliant model assumes that operator actions for alternate shutdown are always successful, which includes, but is not limited to, alignment and start of the G-05 gas turbine. This approach only considers significant equipment failures without consideration of human failures to execute.

The 0.19/0.019 CCDP/CLERP values are only used in the compliant case for both an upper-bound (as discussed in the response to Part (a) in this RAI for potential LOC or the CCDP/CLERP values in an MCR LOH scenario. The post-transition model does not apply the AOP-10A credit for LOC scenarios. Additionally, the LOH CCDP/CLERP values are much higher in the post-transition model versus the compliant model. As per the change-in-risk calculation, constraining the total risk of the compliant model will inherently yield higher delta risk values for CDF and LERF. Therefore, this approach is conservative and does not lead to a non-conservative change-in-risk estimate.

PRA RAI 25.01 *(Changes in Modification Identified in Attachment S)*

The response does not describe the adjustments made to the Fire PRA to add or remove credit for modifications affected in the updated Table S-2 of the LAR as requested in the RAI. Accordingly, it is not clear whether changes to modifications presented in the updated Table S-2, including the deletion of a number of modifications, are reflected in the integrated analysis provided in response to PRA RAI 03. The response to SSA RAI 05 indicates that modeling of overcurrent trip (OCT) logic was added to the Fire PRA in order to justify removing a number of modifications. The response to PRA RAI 25 states that for four modifications (i.e., MOD-17, MOD-28, MOD-29, and MOD-30) "OCT analysis confirmed this modification was not necessary," and "A[a]cceptability confirmed by final quantification." Though not clear from the response provided to PRA RAI 25, it appears that OCT logic was excluded from the original Fire PRA associated with the LAR submittal and later added so that the risk increase associated with deleting these modifications could be incorporated into the risk results.

Please describe the adjustments made to the Fire PRA to add or remove credit for modifications affected in the updated Table S-2 of the LAR used for performing the integrated analysis provided in response to PRA RAI 03, and justify that the adjustments are sufficient to reflect the altered risk resulting from the altered list of modifications.

NextEra Response

The following table includes the table for the 120-day response to PRA RAI 25 with an additional column appended to address the impact on the Fire PRA for removing or adjusting the scope of each individual modification. All of the modification changes and updates were simultaneously incorporated into the integrated analysis provided in response to PRA RAI 03. As such, the risk results presented as part of PRA RAI 03 reflect the incorporation of changes to modifications as described in the original response to PRA RAI 25.

PRA RAI 25 Table			Changes Incorporated in the Fire PRA Reflecting the Change of Modification Scope
Item	**Proposed Modification**	**Type of Change and Justification**	
EC 279326	Cable ZE23213CE in Fire Area A01-B will be protected to preserve VNBI.	Scope removed. Acceptable risk results are achieved with the existing plant design and operation. Feasible and reliable recovery actions, included in IMP-143 and Attachment G, are relied upon in lieu of the modification.	Protection for this cable was removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.
MOD-1	Bus duct between the B-03 and B-04 busses will be modified so that a HEAF is no longer a concern in Fire Areas A23N and A23S.	Scope changed. Bus bars will be replaced with cables, which are not susceptible to the HEAF failure mode. This change is addressed in the Fire Model reports for the affected areas.	The change to this MOD is the specific use of cables instead of modifying the bus ducts to prevent HEAF damage. This results in a new vulnerability of cable damage to these new cables. The fire modeling was updated for the affected fire scenarios. Risk results presented in the 120-day RAI responses reflects the updated fire modeling.
MOD-4	Add additional power inputs to B-08 and to B-09. Power to come from tie line independent of switchyard.	Clarification of description. The increased load capacity is no longer required and this mod will only provide an alternate power source.	An assumed routing scheme was incorporated in the Fire PRA to provide an alternate power source to 480V switchgear buses B-08/B-09 from 4.16 kV bus 2A-06. Risk results presented in the 120-day RAI responses reflect the modification changes.

MOD-7	The following cables will be re-routed and/or protected from fire damage in fire compartment FC187GRP. The re-routes will be reviewed to ensure attachment C and W results are not significantly impacted. ZK1I429A ZP2I429A	Clarification of description. Scope reduced based on circuit analysis from EPM Report R2337-0010-01 R0, Evaluation of Spurious Pressurizer PORV Operation Due to Instrument Failures. Acceptability confirmed by final quantification.	The original proposed modification for MOD-7 included the following: *"Protect the following cables in FZ-187: ZK1I429A and ZL1I430A ZP2I429A and ZQ2I430A"* Protections that were removed from the original MOD-7 (compared to the revised MOD-7 submitted with the 120-day RAI response) were removed from the Fire PRA model. Risk results presented in the 120-day RAI responses reflect risk with this modification updated.
MOD-8	The following PORV cables will be protected in FZ 511: ZK1I429Q ZL1I4317 ZN1I449H ZL1I430O	Scope removed. Additional refinements in circuit analysis from EPM Report R2337-0010-01 R0 determined that the cable protection was not required. Acceptability confirmed by final quantification.	Protections for these cables were removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.
MOD-9	The following PORV cables will be protected in FZ 516: ZK1I429Q ZL1I430O ZM1I4317 ZN1I449H	Scope removed. Additional refinements in circuit analysis from EPM Report R2337-0010-01 R0 determined that the cable protection was not required. Acceptability confirmed by final quantification.	Protections for these cables were removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.

MOD-10	The following cables will be re-routed and/or protected from fire damage in fire zone FZ-318. 1I429B-C-D-H-M 1I449B-E-F ZA1J136B, ZK1I429A, ZN1I449A 2I429B-C-D-H-M 2I449B-E-F ZC2J136B, ZP2I429A, ZS2I449A.	Scope reduced to a single channel of cabling. Additional refinements in circuit analysis from EPM Report R2337-0010-01 R0 determined that the cable protection was not required. Acceptability confirmed by final quantification.	The original proposed modification for MOD-10 included the following: *"Protect the following cables in FZ-318:* *1I429B-C-D-H-M* *1I430B-C-E-M-P* *1I4313, 1I4318, 1i4319* *1I431B-I-J-M-N-T-U* *1I449B-E-F* *ZA1J136B, ZK1I429A,* *ZL1I430A,* *ZM1I431A, ZN1I449A* *2I429B-C-D-H-M* *2I430B-C-E-M-P* *2I4313, 2I4318, 2I4319,* *2I431B-IJ-* *M-N-T-U* *2I449B-E-F* *ZC2J136B, ZP2I429A,* *ZQ2I430A,* *ZR2I431A, ZS2I449A"* Protections that were removed from the original MOD-10 (compared to the revised MOD-10 submitted with the 120-day RAI response) were removed from the Fire PRA model. Risk results presented in the 120-day RAI responses reflect risk with this modification updated.
MOD-12	Cables ZE2328CA and ZE2328CB in FZ 304N will be protected to make P38A available.	Scope removed. Minimal risk reduction in the final quantification results.	Protections for these cables were removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.

MOD-13	Protect cables ZB1B17BH, ZB1A84A1, and ZB1A84A2 in FZ 304S to restore power to 1B-04.	Scope removed. Acceptable results are achieved with existing plant design and operation, and additional transient combustible controls. IMP-144 has been updated to include Fire Zone 304S ventilation area.	Protections for these cables were removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.
MOD-14	To address the potential fail open scenarios associated with multiple spurious operation concerns, solenoid valves will be installed in the air lines supplying the Condenser Steam Dump Valves and steam inlet valves to the MSRs each on both units with a manually activated switch outside the Control Room. Cable routing and power supplies will not be in the Cable Spreading Room or the Control Room or dependent on equipment in either area.	Scope revised. Model and circuit analysis has been updated and is reflected in final quantification.	The MSO for the main steam isolation valves (MSIVs) and the condenser steam dump valves were added to the Fire PRA model to evaluate the revision to MOD-14. MOD-14 is incorporated into the Fire PRA as per Appendix I of "NFPA 805 Fire PRA Quantification Notebook" (P2091-2900-02, Revision 2) Risk results presented in the 120-day RAI responses reflect risk with this modification updated.
MOD-15	Cables ZD2426MA, ZD2426MB, and ZD2426MC, associated with letdown valve 2RC-427 in Fire Area A01-B, will be protected to prevent spurious LOCA.	Scope removed. Acceptable results are achieved with existing plant design and operation, and reliance on an action in the main control room to isolate	The Fire PRA model was enhanced to credit existing plant design and operation. Protections for these cables were removed from the Fire PRA for quantification. Risk results presented in the
		air to containment, as reflected in EPM report R2168-9999-01.	120-day RAI responses reflect risk with this modification removed.

MOD-16	Cable ZB1426MC for unit 1 and ZD2426MC for unit 2, associated with letdown valve 1/2RC-427 in FZ 318, will be protected.	Scope removed. Acceptable results are achieved with existing plant design and operation, and reliance on an action in the main control room to isolate air to containment, as reflected in EPM report R2168-9999-01.	The Fire PRA model was enhanced to credit existing plant design and operation. Protections for these cables were removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.
MOD-17	Protect the following cables in the fire areas noted to preserve DC control power to the required breakers: Cable ID: Fire Area D3102A A15 D3102A A01-H D4102A A01-G D4102A A02 D4102A A06 D4102A A24 ZAD1107A A30 ZAD1107A A23S ZFD0406A A30 ZFD0406A A68 ZFD0406A A23N ZFD0206A A23N ZFD0206A A30 ZFD1402A2 A68 ZFD1402A1 A30 ZFD1402A1/A2 A23N ZFD0208A A23N ZCD3109A1 A23S ZCD3109A1 A24 ZED0307A A15 ZED0108A A23S	Scope removed. OCT analysis confirmed this modification was not necessary. Acceptability confirmed by final quantification.	Overcurrent trip (OCT) failure modes and resulting secondary fire impacts were incorporated into the Fire PRA model. The removal of OCT-related modifications was also incorporated in the risk results for the 120-day RAI responses.

MOD-18	Either Pump P38A or P38B is required to be restored; to restore pump P38A, cables WK1I4042A and ZK1I460H in FZ 237, will be protected.	Scope removed. Pump P38B cable not credited in A01-B/46. Acceptability confirmed by final quantification.	Protections for these cables were removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.
MOD-23	Reduce dependence on instrument air for P-38 AOVs by providing 24 hour pneumatic supply.	Scope clarification.	Change in scope does not impact the Fire PRA modeling.
MOD-28	Provide coordinated fuses to prevent cables that are remote to the switchgear from preventing an over current trip for the following breaker circuits: 1A52-02, 1A52-06, 1A52-12, 1A52-85 2A52-22, 2A52-31, 2A52-49	Scope removed. OCT analysis confirmed this modification was not necessary. Acceptability confirmed by final quantification.	Overcurrent trip (OCT) failure modes and resulting secondary fire impacts were incorporated into the Fire PRA model. The removal of OCT-related modifications was also incorporated in the risk results for the 120-day RAI responses.

MOD-29	Provide coordinated fuses and additional relays to prevent cables that are remote to the switchgear from preventing an over current trip for the following breaker circuits: H52-22, H52-32, H52-16 1A52-05, 1A52-07, 1A52-08, 1A52-09, 1A52-10, 1A52-11, 1A52-13, 1A52-15, 1A52-58, 1A52-59, 1A52-84 2A52-19, 2A52-20, 2A52-21, 2A52-23, 2A52-25, 2A52-28, 2A52-30, 2A52-32, 2A52-33, 2A52-67, 2A52-73, 2A52-74, 2A52-75, 2A52-88, 2A52-89	Scope removed. OCT analysis confirmed this modification was not necessary. Acceptability confirmed by final quantification.	Overcurrent trip (OCT) failure modes and resulting secondary fire impacts were incorporated into the Fire PRA model. The removal of OCT-related modifications was also incorporated in the risk results for the 120-day RAI responses.
MOD-30	Provide automatic backup DC power to the following buses independent of fire area A24: 1-A01, 1-A02, 2-A01, 2-A02 Note: Providing self-energized over current trip devices on the individual breakers on these buses negates the requirement of backup DC power.	Scope removed. OCT analysis confirmed this modification was not necessary. Acceptability confirmed by final quantification.	Overcurrent trip (OCT) failure modes and resulting secondary fire impacts were incorporated into the Fire PRA model. The removal of OCT-related modifications was also incorporated in the risk results for the 120-day RAI responses.
MOD-31	Protect cables (ZCG0201H, ZCG0201J, ZCB0201T, and ZEG0101T) for breaker 2A5276 between 2A-03 and 2A-05 in FZ 318 from damage due to a fire in cabinet DY0A.	Scope removed. Refined fire modeling and circuit analysis confirmed this modification was not necessary.	Fire modeling and circuit analysis were updated in the Fire PRA model for the 120-day RAI responses. Protections for these cables were removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.

MOD-32	Protect cable ZF1NB139A for breaker 252391 between 2B-39 and D-09 in FZ 318 from damage due to a fire in bus 1B-04.	Scope removed. Refined fire modeling and circuit analysis confirmed this modification was not necessary.	Fire modeling and circuit analysis were updated in the Fire PRA model for the 120-day RAI responses. Protection for this cable was removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.
MOD-33	Protect cable D1208A for breaker 2A5276 between 2A-03 and 2A-05 in FZ 318 from damage due to a fire in cabinet D-26.	Scope removed due to refined fire model and circuit analysis.	Fire modeling and circuit analysis were updated in the Fire PRA model for the 120-day RAI responses. Protection for this cable was removed from the Fire PRA for quantification. Risk results presented in the 120-day RAI responses reflect risk with this modification removed.
EC 272841 and 261021	Install low suction pressure trip logic to at least two charging pumps per unit.	New modification. Modification added to provide additional risk reduction.	Charging pump low-suction pressure trip logic was included in the Fire PRA to prevent failure on loss of adequate suction failure for charging pumps 1(2)-P2A, B, and C). This includes incorporation of an operator action to manually open CV-112B or CV-358 to provide a water source from the Refueling Water Storage Tank (RWST) or Volume Control Tank (VCT). This model logic and PRA results also include potential spurious actuations causing a low pressure trip.

References

(1) NextEra Energy Point Beach, LLC, letter to NRC, dated June 26, 2013, "License Amendment Request 271, Transition to 10 CFR 50.48(c) - NFPA 805, 'Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants,' 2001 Edition" (ML131820453)

(2) NRC e-mail to NextEra Energy Point Beach, LLC, dated September 9, 2013, "Request for Supplemental Information Regarding the Acceptability of the Proposed Amendment Request" (ML13256A197)

(3) NextEra Energy Point Beach, LLC, letter to NRC, dated September 16, 2013, "License Amendment Request 271 Supplement 1 Transition to 10 CFR 50.48(c) – NFPA 805" (ML13259A273)

(4) NRC letter to NextEra Energy Point Beach, LLC, dated September 25, 2013, "Point Beach Nuclear Plant, Units 1 and 2 - Acceptance of Licensing Action re: License Amendment Request to Transition to NFPA 805, 'Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants' (TAC NOS. MF2372 and MF2373)" (ML13267A037)

(5) NRC e-mail to NextEra Energy Point Beach, LLC, dated November 19, 2014, "RE: Point Beach Nuclear Plant, Units 1 and 2 – Follow-up Requests for Additional Information (AFPB) re: NFPA 805 License Amendment Request Review (TAC Nos. MF2372 and MF2373)" (ML14325A540)

(6) NextEra Energy Point Beach, LLC, letter to NRC, dated September 25, 2014, "Response (120 Day) to Request for Additional Information and Revision to 60 Day Response License Amendment Request 271 Associated with NFPA 805" (ML14282A446)

Table S-2 Plant Modifications Committed

Item	Rank 1	Unit	Problem Statement	Proposed Modification	LAR FPRA	Current FPRA	Comp Measure	Risk Informed Characterization
MOD-2	H	1,2	Provide additional flexibility for supplying AFW to SGs.	Cross tie TDAFWP steam supplies and pump discharge(s) to allow opposite Unit support.	Y	Y	Y	Risk is reduced by having the unaffected unit available to receive steam or add water to maintain Decay Heat Removal Compensatory measures for NFPA 805: Appropriate compensatory measures will be established as required until the modification is implemented.
MOD-3	H	1,2	When cooling flow is lost to the current RCP seal there is a rapid transition into a considerable loss of inventory as a Seal LOCA.	The RCP Seal will be upgraded to Westinghouse SHIELD® Generation III Shutdown Seal	Y	Y	N	Risk is reduced as change provides a more controllable leak rate, if cooling flow is lost to the RCP seal.
MOD-4	H	1,2	Due to current plant arrangements for credited busses there are multiple areas where busses may not be available for required Safe and Stable Equipment without extensive repairs or actions.	Add additional power inputs to B-08 and to B-09. Power to come from a tie line independent of the switchyard.	Y	Y	N	Risk is reduced by providing alternate means of AC power.