



April 28, 2010

NRC 2010-0033  
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

License Amendment Request 261  
Extended Power Uprate  
Response to Request for Additional Information

- References:
- (1) FPL Energy Point Beach, LLC letter to NRC, dated April 7, 2009, License Amendment Request 261, Extended Power Uprate (ML091250564)
  - (2) NRC letter to NextEra Energy Point Beach, LLC, dated March 25, 2010, Point Beach Nuclear Plant, Units 1 and 2 – Request for Additional Information from Fire Protection Branch Re: Extended Power Uprate (ML100750685)

NextEra Energy Point Beach, LLC (NextEra) submitted License Amendment Request (LAR) 261 (Reference 1) to the NRC pursuant to 10 CFR 50.90. The proposed amendment would increase each unit's licensed thermal power level from 1540 megawatts thermal (MWt) to 1800 MWt, and revise the Technical Specifications to support operation at the increased thermal power level.

Via Reference (2), the NRC staff determined that additional information is required to enable the staff's continued review of LAR 261. 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.

The information contained in this letter does not alter the no significant hazards consideration contained in Reference (1) and continues to satisfy the criteria of 10 CFR 51.22 for categorical exclusion from the requirements of an environmental assessment.

In accordance with 10 CFR 50.91, a copy of this letter is being provided to the designated Wisconsin Official.

I declare under penalty of perjury that the foregoing is true and correct.  
Executed on April 28, 2010.

Very truly yours,

NextEra Energy Point Beach, LLC

A handwritten signature in black ink, appearing to read "LM" followed by "Fur".

Larry Meyer  
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 1

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

#### LICENSE AMENDMENT REQUEST 261 EXTENDED POWER UPRATE RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

The NRC staff determined that additional information was required (Reference 1) to enable the Fire Protection Branch to complete its review of License Amendment Request (LAR) 261, Extended Power Uprate (EPU) (Reference 2). The following information is provided by NextEra Energy Point Beach, LLC (NextEra) in response to the NRC staff's request.

#### **Fire Protection RAI #1**

*In RS-001, Revision 0, Review Standard for Extended Power Uprates (EPUs), Attachment 1 to Matrix 5, "Supplemental Fire Protection Review Criteria," states that "Power uprates typically result in increases in decay heat generation following plant trips. These increases in decay heat usually do not affect the elements of a fire protection program related to (1) administrative controls, (2) fire suppression and detection systems, (3) fire barriers, (4) fire protection responsibilities of plant personnel, and (5) procedures and resources necessary for the repair of systems required to achieve and maintain cold shutdown. In addition, an increase in decay heat will usually not result in an increase in the potential for a radiological release resulting from a fire. However, the licensee's application should confirm that these elements are not impacted by the extended power uprate."*

*The NRC staff note that license amendment request (LAR) 261, Attachment 5, Section 2.5.1.4.2. "Technical Evaluations", on page 2.5.1.4-5, specifically addresses only items (1) and (4) above. Provide statements to address items (2), (3), and (5).*

#### **NextEra Response**

Items (2) and (3) are addressed in LAR 261, Attachment 5, Page 2.5.1.4-5, which states:

"Operating at increased core power level, along with the associated increase in decay heat, does not affect the following elements of the fire protection program:

- Addition of new combustible material
- Fire barriers, penetrations, doors, or the plant radio system
- Ventilation air flow patterns
- Plant fire programs or the Fire Protection Evaluation Report
- Fire wrap and fire coatings on structural steel
- Fire protection suppression or fire detection system components
- Safety-related components within an area protected by the fire suppression system"

In addition, LAR 261, Attachment 5, Section 2.5.1.4 states, "The EPU will not result in an increase in the potential for a radiological release resulting from a fire."

Item (5) - EPU does not alter the elements of the fire protection program as it relates to procedures and resources. The assumed fire damage for operation at EPU is not changed. EPU does not add or modify equipment required to transition from hot shutdown and achieve cold shutdown. Accordingly, EPU does not change repairs credited for post-fire cold shutdown. The resources and materials required to complete the repairs are not changed by EPU.

Therefore, the procedures and resources necessary for the repair of systems required to achieve and maintain cold shutdown are not changed.

### **Fire Protection RAI #2**

*LAR 261, Attachment 5, Section 2.5.1.4.2. "Technical Evaluations", on page 2.5.1.4-7, states that, "...The [Fire Protections Evaluation Report] FPER also addresses all required aspects of Separation Criteria for Safe Shutdown Capability. The separation criterion is not affected by the EPU unless a modification is created. As such, the modification process will control the changes to the alternative/dedicated or backup shutdown capability.*

*Other than modifications to the plant, governed by processes which assess the effect on Fire Protection Program, EPU does not affect the alternative shutdown methods. Modifications required as a result of EPU that modify the function of any mechanical component in the alternative safe shutdown flow paths, modify any components or circuits that provide power, control, or indication to components required for alternative safe shutdown, or introduce any plant equipment failure modes which will affect the ability to achieve any of the alternative shutdown functions, will be addressed as part of the plant modification process ... "*

*It is unclear to the NRC staff whether there are fire protection program plant modifications planned (e.g., adding new cable trays, or re-routing of existing cables, or increases in combustible loading affecting fire barriers rating, or changes to administrative controls) at EPU conditions. Clarify whether this request involves plant modifications, or changes to the fire protection program, including any proposed modifications to implement transition to Title 10 "Energy" of the Code of Federal Regulations (10 CFR) 50.48(c). The NRC staff requests the licensee to identify proposed modifications, if any, and discuss the impact of these modifications on the plant's compliance with the fire protection program licensing basis, 10 CFR 50.48, or applicable portions of 10 CFR 50, Appendix R.*

### **NextEra Response**

There are no EPU plant modifications, or changes to the fire protection program, that include proposed modifications to implement transition to Title 10 "Energy" of the Code of Federal Regulations (10 CFR) 50.48(c).

There are several modifications being implemented for the EPU that will result in minor changes to combustible loading as a result of replacement of motors, replacement and addition of cabling, and a new motor control center. Potential changes in fire loading are evaluated in accordance with the engineering change process to assure continued compliance with the site's fire protection program licensing basis.

Replacement of the main transformers requires modification to the existing transformer deluge system and the fire walls. The modified deluge system and fire walls were evaluated and determined to not impact safe shutdown following a postulated transformer fire.

The main generator modifications require an increase in hydrogen pressure. The resulting increase in hydrogen was evaluated and does not adversely affect the capability of existing fire protection features and safe shutdown following a fire.

The NextEra response to NRC Question 5 in Reference (3) and NextEra responses to NRC Questions 1, 5, and 15 of Reference (4) address auxiliary feedwater (AFW) modifications with regard to compliance to 10 CFR 50 Appendix R separation and protection.

### **Fire Protection RAI #3**

*LAR 261, Attachment 5, Section 2.5.1.4.2. "Technical Evaluations", on page 2.5.1.4-11, states that, "... EPU Evaluation: The probability of a spurious [safety injection] SI pump start or spurious [containment spray] CS initiation is unchanged for EPU operations and the time required for mitigating actions as stated above is not changed. Pending LAR 241 (ML083450683) discusses modifications to the controls of these pumps and throttling the pump discharges, which may increase the time permissible prior to unacceptable consequences..."*

*The NRC staff notes that the LAR 241 evaluation has not yet been completed. To address the possible case where the Nuclear Regulatory Commission (NRC) disapproves LAR 241, discuss how results of LAR 241 would impact the fire protection program at the EPU conditions.*

*Further, the NRC staff notes that this request is based on a deterministic evaluation, not a probabilistic one; therefore, explain (1) the relevance of the probability of a spurious SI pump start or spurious CS initiation and (2), if relevant, why the probability and the time required for mitigating actions are unchanged for EPU operations.*

### **NextEra Response**

The EPU has no effect upon the probability that a fire causes a spurious start of the safety injection (SI) or containment spray pumps. The modifications performed for alternative source term (AST) impact the realignment of a residual heat removal (RHR) pump for the recirculation phase wherein the RHR pump provides core injection and flow to the containment spray pump suction. The modification consists of adding a preset throttle position on the RHR core deluge injection valves and providing a flow limiting flow path on the containment spray pump flow path during the recirculation phase. This keeps the total RHR pump flow within design limits during the recirculation phase.

The modifications do not affect the operation of the SI or containment spray systems following a spurious start of the SI or containment spray pumps since the changes are related to remote manual operation of the valves during the recirculation phase of a postulated LOCA. The SI and containment spray pump flows following a spurious pump start are not changed by either LAR 241 or LAR 261.

Note that approval of LAR 241 is required to implement LAR 261. Therefore, should LAR 241 not be approved, the EPU would not be implemented. As discussed above, implementation of

LAR 241 modifications to the containment spray and SI systems does not impact the fire protection program at EPU conditions.

#### **Fire Protection RAI #4**

*LAR 261, Attachment 5, Section 2.5.1.4.2. "Technical Evaluations", on page 2.5.1.4-12, states that, "... EPU Evaluation: The time to [steam generator] SG dryout in case of a spurious opening of an SG [atmospheric dump valve] ADV has been verified for EPU to remain between 14 and 49 minutes, depending upon the unit involved and initial conditions and the time due to conservative assumptions in the original analysis ... "*

*At EPU conditions with higher decay heat, why does the time to SG dryout in case of a spurious opening of an SG ADV still remain between 14 and 49 minutes? For example, was the original evaluation based on a range of possible conditions sufficiently conservative so as to bound even the range now possible under EPU conditions? Discuss how the assumptions in the original analysis remain valid for EPU conditions.*

#### **NextEra Response**

The original calculated time to steam generator (SG) dryout was based on available SG water volume after a reactor trip on SG low-low level and the capacity of the atmospheric steam dump valve (ADV). For EPU, the low-low SG level nominal trip setpoint is being raised from 25% to 30%, resulting in an increase in available SG volume following a reactor trip. The ADV capacity is not being changed for EPU so the calculated minimum time for SG dryout will increase. The maximum time was based on simulator runs at the current licensed power level and demonstrated that the time to dryout was significantly longer than the minimum time calculated. Even considering an increase of decay heat of 17%, the time to dryout is still predicted to be greater than the calculated time of 14 minutes.

A discrepancy in the actual capacity of the ADV used in the original Appendix R analysis was identified. The rated capacity of the ADV, when full open, is approximately 40% greater than the specified design capacity of the ADV. The above analysis of the steam generator dry out was based on the specified design ADV capacity. Using the more conservative actual ADV capacity at full open will reduce the calculated time to dry out to approximately 10 minutes from the EPU low-low level trip setpoint of 30%. The time to dry out based on the normal steam generator level of 64% is approximately 15 minutes. Note that the actual higher ADV capacity is used in applicable EPU safety analyses. The discrepancy is being addressed in the PBNP corrective action program. (CAP 01170939)

Although the calculated time based on the maximum valve capacity is less than the original calculated time, the fire response mitigation strategy and prioritization of the operator action to address ADV spurious actuation is not changed.

### **Fire Protection RAI #5**

*Some plants credit aspects of their fire protection system for other than fire protection activities, e.g., utilizing the fire water pumps and water supply as backup cooling or inventory for nonprimary reactor systems. If the Point Beach Nuclear Plant (PBNP) Units 1 and 2, credits its fire protection system in this way, the EPU LAR should identify the specific situations and discuss to what extent, if any, the EPU affects these "non-fire-protection" aspects of the plant fire protection system. If the PBNP Units 1 and 2 do not take such credit, the NRC staff requests that the licensee verify this as well.*

### **NextEra Response**

Non-fire suppression uses of the fire protection water supply for PBNP are:

- Support of post-fire safe shutdown activities by providing a backup supply of bearing cooling water to the turbine-driven auxiliary feedwater pumps. This function is not changed by EPU.
- Provide a backup source of make up water for evaporative cooling of the spent fuel pool in the event of loss of spent fuel pool cooling. The spent fuel pool make up requirement increases due to EPU, but remains well within the fire water local hose station flow capability.
- Provide a backup supply of feedwater through the use of the diesel-driven fire pump and routing of a fire hose between existing connections on the fire header to the condensate storage tanks. This function is not affected by EPU because the fire protection system makeup capability is much greater than the AFW requirement.

### **References**

- (1) NRC letter to NextEra Energy Point Beach, LLC, dated March 25, 2010, Point Beach Nuclear Plant, Units 1 and 2 – Request for Additional Information from Fire Protection Branch Re: Extended Power Uprate (ML100750685)
- (2) FPL Energy Point Beach, LLC letter to NRC, dated April 7, 2009, License Amendment Request 261, Extended Power Uprate (ML091250564)
- (3) NextEra Energy Point Beach, LLC letter to NRC, dated June 17, 2009, License Amendment Request 261 Supplement 1, Extended Power Uprate (ML091690090)
- (4) NextEra Energy Point Beach, LLC letter to NRC, dated November 21, 2009, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML093270032)