NEXTera ENERGY POINT BEACH

August 26, 2010

NRC 2010-0123
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 electronic mail to NextEra Energy Point Beach, LLC, dated August 2, 2010, Point Beach Nuclear Plant, Units 1 and 2 - Draft RAIs re: Extended Power Uprate and Associated with Diesel FO Storage Requirements (TAC Nos. ME1044 & ME1045) (ML102170241)

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 was required to enable the staff's continued review of the request. Enclosure 1 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 August 26, 2010.

Very truly yours,

NextEra Energy Point Beach, LLC

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 Electrical Engineering 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.

EEEB-1

The following questions are related to information provided in response to request for additional information related to extended power uprate and EDG loading/fuel oil consumption, (LAR 261) NextEra letter dated September 25, 2009 (ADAMS Accession No. ML092750395) (Reference 3):

Enclosure 8 has the following statement related to the fuel oil consumption calculation:

> *"Revision 5 includes the following changes: (1) Removes the 10% margin identified for the T-176A and T-176B day tank capacity determination. This margin was provided for initial tank sizing and is not applicable to subsequent capacity evaluations; (2) Clarifies the basis for the High Heating Value to be used for Ultra Low Sulfur Diesel and recalculates fuel consumption rate at PBNP fuel conditions to address A/R 0114489; (3) Removes the conservatism in the temperature correction used for the fuel oil consumption rate determination."*

a.) *Industry Standard ANSI/ANS-59.51-1997 "Fuel Oil System For Safety-Related Emergency Diesel Generators" (previously ANSI N195-1976), as endorsed by Regulatory Guide 1.137, Section 5.5.1, states that each diesel shall have a day tank with sufficient capacity to maintain at least 60 minutes of operation and that this capacity shall assume the fuel consumption with the diesel running at 100% continuous rated plus a minimum additional margin of 10%. This requirement is under component performance requirements.*

i) *Please provide an explanation as to why this requirement is being deleted from your calculation.*

ii) *The calculation uses the load dependant method of calculating the fuel oil storage requirements. Please clarify if the 10% margin has been removed from the fuel oil storage required on site for seven day operation of EDGs.*

iii) *Provide details on the changes associated with the consumption rate related to Ultra Low Sulfur fuel at the bounding density allowable by Technical Specifications.*

NextEra Response

a.i) Wisconsin Electric letter to the NRC, dated May 26, 1994 (Reference 4) discussed the criteria used to size the emergency diesel generator (EDG) G-03 and G-04 day tanks (T-176A and T-176B). As noted in Attachment 3 Item 6, and in the Bases of proposed Technical Specification 15.3.7, included in Reference (4), the fuel oil system tank sizing was based on a fuel oil consumption rate of approximately 205 gallons per hour (gph).

The EDG fuel oil calculation determines a fuel oil consumption rate based on EDG testing with corrections for the allowed range of fuel oil specific gravity and for ultra low sulfur diesel fuel oil. Additionally, the EDG fuel oil calculation enhances accurate basis for determining the unusable volume at the bottom of the EDG G-03 and G-04 day tanks. The use of this refined basis for the fuel oil consumption rate and for the unusable volume has reduced the margin in the original day tank sizing.

The combined purpose of the auxiliary feedwater (AFW) system and Alternative Source Term (AST) modifications is to reduce EDG loading to ensure that the EDGs will remain below their 2000-hour load rating for worst case design basis accident loading. As such, the EDG fuel oil calculation was revised to document the impact on EDG fuel oil consumption with the loads remaining below the 2000-hour load rating for all EDGs.

The revised EDG fuel oil calculation determined the required fuel oil quantity for 60 minutes and 120 minutes of operation utilizing the 2000-hour load rating, whereas the previous revision used the 195-hour load rating for EDGs G-03 and G-04. The revised EDG fuel oil calculation validated the following for the T-176A and T-176B fuel oil day tanks for G-03 and G-04:

- the capacity is sufficient to maintain a minimum of 60 minutes of operation after decreasing to the low level alarm setpoint; and

- the capacity is sufficient to maintain a minimum of 120 minutes of continuous operation at 100% rated load with no makeup.

The calculated fuel oil requirements along with the available margin, for the day tanks associated with EDGs G-03 and G-04 are:

60 Minutes	
Required volume for 60 minutes of operation	28.71 ft^3
Available tank volume at low level setpoint	35.78 ft^3
Total unusable tank volume	4.293 ft^3
Available Margin: [35.78 - 4.293] - 28.71	2.777 ft^3
120 Minutes	
Required volume for 120 minutes of operation	57.42 ft^3
Available tank volume at high level setpoint	63.60 ft^3
Total unusable tank volume	4.293 ft^3
Available Margin: [63.60 - 4.293] – 57.42	1.887 ft^3

Therefore, given the refinements in the fuel oil consumption rates and unusable tank volume, the 10% margin used in the initial sizing of the G-03 and G-04 day tanks (Reference 4), is no longer applicable.

a.ii) Reference (4), Attachment 7, Section 4.4.2.2.1, discussed the criteria used to size the EDG storage tanks. A 10% margin was not part of the sizing criteria.

The EDG fuel oil calculation does not utilize the "load dependent" methodology detailed in Appendix B of ANSI 59.51. The EDG fuel oil calculation utilizes a fuel consumption rate, dependent on the 2000-hour rating of the EDG and a minimum quality fuel, to determine the amount of fuel oil for normal 7-day operation.

a.iii) The EDG fuel oil calculation used information from the U.S. Environmental Protection Agency (EPA) finalized new fuel standards for diesel engines and NRC Information Notice 2006-22, New Ultra-Low-Sulfur Diesel Fuel Oil Could Adversely Impact Diesel Engine Performance, to establish an energy content reduction, which was then used to select values for the higher heating value for the ultra low sulfur fuel. Please refer to the response to Question 1.e for additional detail.

b.) Please verify that the Appendix R related fuel oil requirements with spurious accident signal actuations associated with EDG(s) operation or Gas Turbine operation is not the bounding case for fuel oil storage requirements.

NextEra Response

The bounding EDG set for Appendix R compliance, determined by the EDG fuel oil calculation, are G-01 and G-02. The calculated required fuel oil storage for G-01 and G-02 is 31,450 gallons in the T-175A and T-175B storage tanks. Compared to the 7 days calculated in the EDG fuel oil calculation of 36,676 gallons, the 10 CFR 50, Appendix R-related fuel oil requirements are not bounding.

The gas turbine is not considered in the above comparison, since it draws fuel oil from tanks T-32A and T-32B. Therefore, the gas turbine operation for an Appendix R event is not bounding, since its fuel oil storage is independent of the EDG fuel oil storage tanks.

c.) *Assumption 17 states that fuel oil consumption rate at 2951 kW is equal to that at 2848 kW. Please provide supporting documentation. Provide details on the method used to evaluate fuel oil consumption at different EDG loadings during a seven day operation.*

NextEra Response

The latest revision of the EDG fuel oil calculation deleted Assumption 17. The 195-hour load rating is no longer required, as the EDG maximum loads for all four EDGs remain below the 2000-hour rating. As such, Assumption 17 is deleted as it pertains to the 195-hour load rating for EDGs G-03 and G-04. As noted in the NextEra response to Question a.ii above, the EDG fuel oil calculation utilizes a fuel consumption rate dependent on the 2000-hour rating of the EDGs and a minimum quality fuel to determine the amount of fuel oil for 7 days of operation. Therefore, the 2000-hour rating is the only fuel consumption rate used to determine the volume used during 7-day EDG operation.

d.) *Assumption 18 states that the average loading of the EDGs over a seven day period is used for fuel oil consumption. The justification provided in assumption 20 is based on a future rebuild of a service water pump.*

Please provide details on the current load profile of EDG(s) loading and fuel oil consumption for current plant design using actual loading over a seven day period.

NextEra Response

The latest revision to the EDG fuel oil calculation does not utilize the "load dependent" methodology detailed in Appendix B of ANSI 59.51-1997. Under this revision, the 195-hour load rating is no longer required as the EDG loading calculations have been revised for the AFW system and AST modifications to demonstrate that EDG loads remains below the 2000-hour rating. The 2000-hour load ratings utilized for determining the normal 7-day consumption are listed in the Bases for Technical Specification 3.8.1, AC Sources - Operating.

e.) *The latest revision of the calculation imposes a restriction on the BTU/pound for fuel oil receipt.*

Please provide details on the actual value of BTU/pound used in the calculation and the method used to convert BTUs to gallons per kW/hr. Provide data on the BTU content of the fuel oil currently available in the storage tanks.

NextEra Response

The EDG fuel oil calculation examines a range of fuel oil heat capacities based on specific gravity (SG). This range is from 0.83 SG and 19,478 BTU/lb to 0.89 SG and 19,098 BTU/lb. These values have been adjusted for the use of Ultra Low Sulfur Diesel (ULSD) fuel oil. The fuel oil consumption rate in gallons per kW/hr is based on data from the EDG manufacturer's performance tests and multiplying by the ratio of the heat capacity of fuel in the tests to the heat capacities of 19,478 BTU/lb and 19,098 BTU/lb. The consumption rate corresponding to a heat capacity of 19,478 BTU/lb was found to be the most conservative, and it was used in the calculation.

The most recent quarterly sampling of the fuel oil in the emergency fuel oil tanks demonstrated the following heat capacities:

T-175A	19,504 BTU/lb
T-175B	19,515 BTU/lb

These values exceed the acceptable range of values stated above.

References

(1) NRC electronic mail to NextEra Energy Point Beach, LLC, dated August 2, 2010, Point Beach Nuclear Plant, Units 1 and 2 - Draft RAIs re: Extended Power Uprate and Associated with Diesel FO Storage Requirements (TAC Nos. ME1044 & ME1045) (ML102170241)

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(3) NextEra Energy Point Beach, LLC letter to NRC, dated September 25, 2009, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML092750395)

(4) Wisconsin Electric letter to the NRC dated May 26, 1994, Dockets 50-266 and 50-301, Technical Specifications Change Request 166, Modification to TS 15.3.0 – Limiting Conditions for Operation, 15.3.14 – Fire Protection System, 15.3.7 – Auxiliary Electrical Systems, and 15.4.6 – Emergency Power System Periodic Tests, Point Beach Nuclear Plants, Units 1 and 2