September 3, 2010

NRC 2010-0141
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 241
Alternate Source Term
Response to Request for Additional Information

References:
(1) FPL Energy Point Beach, LLC letter to NRC, dated December 8, 2008, License Amendment Request 241, Alternate Source Term (ML083450683)
(2) NRC letter to NextEra Energy Point Beach, LLC, dated January 5, 2010, Point Beach Nuclear Plant, Units 1 and 2 – Request for Additional Information Regarding Alternate Source Term (TAC Nos. ME0219 and ME0220) (ML093630246)
(3) NextEra Energy Point Beach, LLC letter to NRC, dated February 4, 2010, License Amendment Request 241, Alternate Source Term, Response to Request for Additional Information (ML100360065)

NextEra Energy Point Beach, LLC (NextEra) submitted License Amendment Request (LAR) 241 (Reference 1) to the NRC pursuant to 10 CFR 50.90. The proposed amendment would revise the current licensing basis to implement the alternative source term (AST) through reanalysis of the radiological consequences of the Point Beach Nuclear Plant (PBNP) final safety analysis report (FSAR) Chapter 14 accidents.

Via Reference (2), the NRC staff determined that additional information was required to enable the staff's continued review of Reference (1). NextEra responded to the NRC request via Reference (3). During a telephone conference on August 25, 2010, the NRC requested additional information to complete the review of the response provided in Reference (3). The NextEra response to the request for additional information is provided in Enclosure 1.

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 September 3, 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 241
EXTENDED POWER UPRATE
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

During a telephone conference conducted on August 25, 2010, the NRC determined that additional information was required to enable the staff's continued review of License Amendment Request (LAR) 241, Alternative Source Term (Reference 1). The following information is provided by NextEra Energy Point Beach, LLC (NextEra) in response to the NRC staff's request.

Question 1

Provide a summary of the LOCA control room dose analysis performed without credit for the VNPAB that was referenced in the response to Question 4 of the NRC's request for additional information dated January 5, 2010.

NextEra Response

As stated in the response to Question 4 of Reference 2, to address the common plenum condition, NextEra performed dose analyses, without credit for the primary auxiliary building ventilation (VNPAB) system for large-break loss-of-coolant accident. The analysis used was the same that was used for the alternative source term methodology that was submitted to the NRC in Reference 1. The assumptions are the same used in Reference 1 except that the control room X/Q values for the run considering emergency core cooling system (ECCS) leakage to the PAB were revised to reflect no credit for VNPAB, and flashing fractions for ECCS leakage were revised based on the time dependent sump temperature.

The values appropriate for releases without the VNPAB in service are listed below and compared to the values modeled in Reference 1.

Time Period	Control Room X/Q Assuming VNPAB In Service (sec/m^3)	Control Room X/Q Assuming VNPAB Out of Service (sec/m^3)
0-2 hours	1.80E-3	6.78E-3
2-8 hours	1.31E-3	5.03E-3
8-24 hours	5.15E-4	1.72E-3
24-96 hours	4.03E-4	1.60E-3
96-720 hours	3.03E-4	1.34E-3

With regard to flashing fractions for ECCS leakage based on sump temperature, the assumptions in Reference 1 were revised as follows:

This model assumes that the airborne fraction is approximately 0.01 above the calculated flashing fraction and that when the value calculated in this manner drops below 0.02 a value of 0.02 is assumed. This minimum airborne fraction is maintained for the 30-day duration of the event. The flashing fraction is determined based on Regulatory Guide (RG) 1.183 Appendix A, Position 5.4. The flashing fraction is calculated by:

$$FF = \frac{h_{f1} - h_{f2}}{h_{fg}}$$

where:

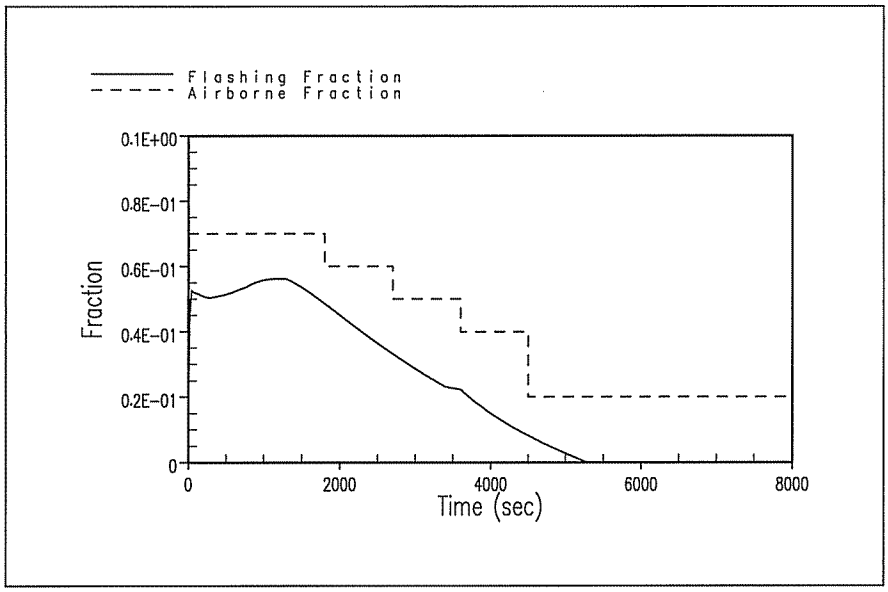
- h_{f1} is the enthalpy of the sump fluid. This is evaluated using the time dependant sump temperature and the system design pressure
- h_{f2} is the enthalpy of liquid at saturation conditions (14.7 psia, 212°F) = 180.16 Btu/lbm
- h_{fg} is the heat of vaporization at 212°F = 970.3 Btu/lbm

Table 1 below presents the points selected from the sump temperature data to develop the airborne fractions assumed in this case. The value in each time period is based on the maximum temperature in that period.

Table 1: Airborne Fractions

Time Period (Seconds)	Sump Temperature (°F)	Calculated Flashing Fraction	Assumed Airborne Fraction
0 – 1800	265.8	0.056	0.07
1800 – 2700	258.5	0.049	0.06
2700 – 3600	243.8	0.033	0.05
3600 – 4500	233.3	0.022	0.04
4500 – 5300	219.7	0.008	0.02
> 5300	< 212	0.0	0.02

The calculated time-dependant flashing fraction is presented in the figure below compared to the assumed airborne fraction.



The flashing fraction methodology was developed consistent with that applied for the R.E. Ginna Nuclear Power Plant AST Analysis submitted via Reference 3 (ML042020571), and subsequently approved by the NRC in Reference 4 (ML050320491).

Utilizing the AST methodology provided in Reference 1, and applying the same Reference 1 inputs with the exception of the ones noted above, the revised LOCA Control Room dose analysis results in the following total effective dose equivalent (TEDE) values:

Control Room – All Pathways (excludes shine)	4.23 REM
Control Room – Shine	0.28 REM
Control Room – Total Dose	4.51 REM

Considering operation of VNPAB has no influence on offsite doses for LOCA, the exclusion area boundary and low population zone doses presented in Reference 1 remain valid.

References

(1) FPL Energy Point Beach, LLC letter to NRC, dated December 8, 2008, License Amendment Request 241, Alternative Source Term (ML083450683)

(2) NextEra Energy Point Beach, LLC letter to NRC, dated February 4, 2010, License Amendment Request 241, Alternate Source Term, Response to Request for Additional Information (ML100360065)

(3) Constellation Energy letter to NRC, dated July 14, 2004, R.E. Ginna Nuclear Power Plant, Revised Atmospheric Dispersion Factors (x/Q) and Dose Analysis (ML042020571)

(4) NRC letter to Constellation Energy, dated February 25, 2005, R.E. Ginna Nuclear Power Plant – Amendment Re: Modification of the Control Room Emergency Air Treatment System and Change to Dose Calculation Methodology to Alternate Source Term (TAC No. MB9123) (ML050320491)