UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 22, 2010

Mr. Larry Meyer
Site Vice President
NextEra Energy Point Beach, LLC
6610 Nuclear Road
Two Rivers, WI 54241-9516

SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 - REQUEST FOR ADDITIONAL INFORMATION FROM PROBABILISTIC RISK ASSESSMENT LICENSING BRANCH RE: EXTENDED POWER UPRATE (TAC NOS. ME1044 AND ME1045)

Dear Mr. Meyer:

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated April 7, 2009, as supplemented by letters dated September 11 and October 9, 2009 (Agencywide Documents Access and Management System Accession Nos. ML091250564, ML092570205, and ML092860098), FPL Energy Point Beach, LLC, submitted a request to increase each unit's licensed core power level from 1540 megawatts thermal (MWt) to 1800 MWt reactor core power, and revise the technical specifications to support operation at this increased core thermal power level.

The NRC staff is reviewing your submittal and has determined that additional information is required to complete the review. The specific information requested is addressed in the enclosure to this letter. During a discussion with your staff on April 13, 2010, it was agreed that you would provide the additional information within 45 days of the date of this letter.

The NRC staff considers that timely responses to requests for additional information help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-2048.

Sincerely,

Thomas J. Wengert for

Justin C. Poole, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

Enclosure:
Request for Additional Information

cc w/encl: Distribution via ListServ

REQUEST FOR ADDITIONAL INFORMATION

POINT BEACH NUCLEAR POWER PLANT, UNITS 1 AND 2 (PBNP)

DOCKET NOS. 50-266 AND 50-301

APLA-1: As a result of performing the Individual Plant Examination (IPE), PBNP identified four modifications and six cost-effective improvements to the plant. Please describe modifications and improvements identified in the IPE, but not yet implemented, which affect the Extended Power Uprate (EPU) and address the risk impact for these issues.

APLA-2: EPU Licensing Report Section 2.13.1.3 states PBNP internal events Probabilistic Risk Assessment (PRA) received a formal industry Westinghouse Owners Group (WOG) peer review in June 2001. Please identify the guidelines or standard used during this peer review.

APLA-3: WOG PRA peer review items DA-03, DA-05, and DA-06 focuses on common cause failure (CCF) groupings and CCF applicability in the PBNP PRA. DA-05 discusses service water pumps. Provide justification for excluding potential CCF contributions for running service water pumps, explain why running and standby pumps are decoupled, and why the global CCF event for service water pumps does not include the probability of pumps two through five failing. DA-06 discusses common cause failures of diesel generators. Provide an explanation of how maintenance crew CCF is modeled for diesels G-01, G-02, G-03, and G-04.

APLA-4: WOG PRA peer review item QU-10 and DA-05 focuses on CCF grouping and calculations for loss of instrument air. The peer review states that loss of instrument air is the leading CCF contributor to core damage for the PBNP PRA. EPU Licensing Report Section 2.13.1-63 states instrument air affects operation of Auxiliary Feedwater, feed and bleed cooling, and Reactant Coolant System depressurization. Provide a brief description explaining how the CCF is calculated for all four air compressors and explain how intermediate CCF is modeled in the PBNP PRA for the air compressors. (i.e., failure of 2 of 4, failure of 3 of 4). Provide a sensitivity analysis to explain the impact on EPU.

APLA-5: Increased heat associated with EPU is expected to increase steam flow during normal operations and after a plant trip. Increased steam flow from the steam generators can result in unexpected flow-induced vibration. Please explain how the EPU affects flow-induced vibration in PBNP steam generators. Also, please compare the recovery time available for steam generator overfills scenarios for pre-EPU and post-EPU.

APLA-6: Due to the EPU, some pipe segments may exceed industry standards for flow velocity (e.g., turbine building feedline, turbine building extraction steam). How does PBNP address pipe segments that exceed flow velocity post-EPU?

APLA-7: Significant EPU-related modifications are proposed for both units of PBNP, such as replacement of Main Feedwater Pumps, Feedwater Heaters, and Main Transformers. Briefly describe existing or future programs that will sufficiently address potential break-in failures and reliability of new equipment. Please provide a sensitivity analysis for the break-in period.

Enclosure

APLA-8: Due to increased decay heat during EPU operations more pressure operated relief valves (PORV) maybe required for successful feed and bleed post-EPU. Please provide a basis for determining success criteria for feed-and-bleed with and without charging availability post-EPU.

APLA-9: Pressurizer level may have larger variation due to the power uprate. Since it is possible that the higher water level could lead to increased PORV challenges and less pressurizer steam volume to react to pressure changes, please address the risk impact of larger variations in pressurizer level for PBNP post-EPU.

APLA-10: The PBNP EPU submittal states that over 100 unique post-initiator operator actions were developed for the PBNP PRA and only those operator actions evaluated as having significant impact to EPU were analyzed. Please explain the criteria used to determine those operator actions significant to EPU. Based on previous submittals, the staff has accepted the following minimum criteria for operator action screening:

- F-V (with respect to core damage frequency (CDF) and large early release frequency (LERF)) importance measure ≥ 5E-3
- RAW (with respect to CDF and LERF) importance measure ≥ 2.0
- Time critical (≤ 30 minutes available) action

Please analyze all post-initiator operator actions which fall within the screening criteria listed above or provide basis for the screening criteria chosen for EPU review.

APLA-11: Please explain why installation of a self-cooled air compressor and backup air supply for the Pressurizer Auxiliary Spray Valve contributes to differing changes in risk metrics between Unit 1 and Unit 2.

APLA-12: EPU Licensing Report Section 2.13.1-43 provides requantification analysis of human error probability. Please describe any new operator actions developed due to the EPU that could impact the PRA and describe the methodology utilized to determine the error probability associated with the new actions.

APLA-13: The staff requests responses for the following information on Low Power and Shutdown operations:

a. Explain how the EPU affects the scheduling of outage activities.

b. Provide additional information regarding the reliability and availability of equipment used for shutdown conditions

c. Explain how the EPU affects the availability of equipment or instrumentation used for contingency plans

d. Explain how the EPU affects the ability of the operator to close containment.

APLA-14: The majority of risk impact due to EPU implementation typically relates to human reliability. The Nuclear Regulatory Commission (NRC) staff finds considerable inconsistencies between the PBNP human reliability risk evaluation and prior EPU submittals from other utilities. The following questions address the analyses conducted by PBNP in regard to human reliability:

a. The licensee states that over 100 unique post-initiator operator actions were developed for the PBNP PRA and the vast majority of these events are not impacted by the EPU. 34 human error probabilities (HEP) are identified as having an impact on the EPU. Many of the identified HEPs were substantially increased by 400 percent to 1400 percent. Increases in HEP by this amount are not typically seen by NRC staff in other plant EPU submittals. Please explain why PBNP PRA has uncharacteristically high increases in HEP values for an EPU application. Are the increases in HEP values attributable entirely to EPU or has there been a change in methodology between pre- and post-EPU. If different methodologies were used for pre- and post-EPU, please provide a delta change in HEP values using the same methodology.

b. For Feed and Bleed action, HEP-IA-FO-04748 Operator fails to Reopen 3047 or 3048, the system time window was reduced from 56 minutes to 35 minutes and high dependency was assigned for recovery actions. This change results in HEP increase of 35 percent for the EPU application. Feed and Bleed action, HEP-MFW-CSPH1-06, also reduces time from 56 minutes to 35 minutes and high dependency was assigned for recovery actions, however; HEP for this action increase by 1370 percent for the EPU. Please explain why operator actions developed based on the time to reach feed and bleed initiation criteria after a transient event vary by two orders of magnitude.

c. Dependency levels were changed for the majority of HEPs from medium to high. Please explain criteria used to determine dependency levels for HEPs pre- and post-EPU.

d. Given that the HEPs are the primary change in risk impact for EPU, please provide more realistic HEP values and their pre- and post-EPU results.

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ADAMS Accession Number: ML101040946 *per memo dated March 5, 2010

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DATE	04/19/10	04/16/10	03/05/10	04/22/10

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