## NRR-PMDAPEm Resource

**From:** Beltz, Terry
**Sent:** Thursday, July 11, 2013 8:19 AM
**To:** 'Millen, Michael'
**Cc:** 'harv.hanneman@nexteraenergy.com'; 'Clark, Roger'; Carlson, Robert; Widrevitz, Dan
**Subject:** Point Beach Nuclear Plant, Units 1 and 2 - Draft Requests for Additional Information (EVIB) Supporting Review of LAR to Implement New PTLR (TAC Nos. MF0532 and MF0533)
**Attachments:** Point Beach Nuclear Plant, Units 1 and 2 - Draft Requests for Additional Information (EVIB) (TAC Nos. MF0532 and MF0533).docx

Dear Mr. Millen:

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated January 15, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13016A028), and supplemented by letters dated March 1, 2013 (ADAMS Accession No. ML13063A292) and April 18, 2013 (ADAMS Accession No. ML13113A008), NextEra Energy Point Beach, LLC submitted for NRC staff review and approval a license amendment request to implement a new Pressure Temperature Limits Report for the Point Beach Nuclear Plant, Units 1 and 2.

The NRC staff in the Vessel & Internals Integrity Branch (EVIB) of the Office of Nuclear Reactor Regulatory has identified areas where additional information is needed to complete its review. The draft requests for additional information (RAI) are provided as an attachment to this e-mail.

You may accept the draft RAI as a formal Request for Additional Information and provide a response by August 16, 2013. Alternatively, you may request to discuss the contents of this draft RAI with the NRC staff in a conference call, including any change to the proposed response date.

Please let me know if you have any questions or concerns.

Sincerely,

TERRY A. BELTZ, SENIOR PROJECT MANAGER
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REQUEST FOR ADDITIONAL INFORMATION

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

PRESSURE TEMPERATURE LIMITS REPORT REVISION

DOCKET NOS. 50-266 AND 50-301

(TAC NOS. MF0532 AND MF0533)

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated January 15, 2013 (Reference 1), and supplemented by letters dated March 1, 2013 (Reference 2) and April 18, 2013 (Reference 3), NextEra Energy Point Beach, LLC (the licensee) submitted for NRC staff review and approval a license amendment request to implement a new Pressure Temperature Limits Report (PTLR) for the Point Beach Nuclear Plant (PBNP), Units 1 and 2.

In order to complete its review, the NRC staff requires response to the requests for additional information (RAI) provided below.

**RAI 1**

The submittal and supplemental letters contain several sets of fluence values.

Please confirm that the fluence values used in the PTLR were those generated as part of the 2009 extended power uprate effort.

**RAI 2**

The PTLR curves provided in Enclosure 2 to the April 18, 2013, letter are titled "… applicable to 53 EFPY [effective full-power years]…," and elsewhere in the submittal it is stated that these curves are applicable to 50 EFPY by current reckoning.

Please confirm that these labels will be accurately updated if/when placed into use.

**RAI 3**

Please provide essential parameters such as thermal diffusivity for the NRC staff to validate the difference between the RPV coolant temperature and the RPV metal temperature.

Additionally clarify how RPV metal temperature at the crack tip was derived.

**RAI 4**

The regulations in 10 CFR Part 50, Appendix G, Paragraph IV.A state that, "the pressure-retaining components of the reactor coolant pressure boundary [RCPB] that are made of ferritic materials must meet the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code [ASME Code, Section III], supplemented by the additional requirements set forth in [paragraph IV.A.2, "Pressure-Temperature (P-T) Limits and Minimum Temperature Requirements"]…" Therefore, 10 CFR Part 50, Appendix G requires that P-T limits be developed for the ferritic materials in the reactor vessel (RV) beltline (neutron fluence ≥ $1 \times 10^{17}$ n/cm$^2$, E > 1 MeV), as well as ferritic materials not in the RV beltline (neutron fluence < $1 \times 10^{17}$ n/cm$^2$, E > 1 MeV). Further, 10 CFR Part 50, Appendix G requires that all RCPB components must meet the ASME Code, Section III requirements. The relevant ASME Code, Section III requirement that will affect the P-T limits is the lowest service temperature requirement for all RCPB components specified in Section III, NB-2332(b).

The P-T limit calculations for ferritic RCPB components that are not RV beltline shell materials may define P-T curves that are more limiting than those calculated for the RV beltline shell materials due to the following factors:

1. RV nozzles, penetrations, and other discontinuities have complex geometries that may exhibit significantly higher stresses than those for the RV beltline shell region. These higher stresses can potentially result in more restrictive P-T limits, even if the reference temperature ($RT_{NDT}$) for these components is not as high as that of RV beltline shell materials that have simpler geometries.

2. Ferritic RCPB components that are not part of the RV may have initial $RT_{NDT}$ values, which may define a more restrictive lowest operating temperature in the P -T limits than those for the RV beltline shell materials.

Consequently, please describe how the P-T limit curves submitted for PBNP units and the methodology used to develop these curves, considered all RV materials (beltline and non-beltline) and the lowest service temperature of all ferritic RCPB materials, consistent with the requirements of 10 CFR Part 50, Appendix G.

Your description should include the following:

- Confirm availability of material data (initial $RT_{NDT}$ and copper and nickel contents) for all non-beltline ferritic materials for all PBNP RPVs and demonstrate that none of them will become limiting under the 50 EFPY fluence.

- Confirm that the lowest service temperatures (LSTs) for all ferritic RCPB components that are not part of the RV have been established for both Point Beach units, and the lowest temperature of 60 °F in the proposed P-T limits are higher than these LSTs.

References

1. Letter from Larry Meyer, NextEra Energy LLC, to NRC, “License Amendment Request 252 Technical Specification 5.6.5, Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR),” dated January 15, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13016A028).

2. Letter from Larry Meyer, NextEra Energy LLC, to NRC, “Supplement to License Amendment Request 252 Technical Specification 5.6.5, Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR),” dated March 1, 2013 (ADAMS Accession No. ML13063A292).

3. Letter from Larry Meyer, NextEra Energy LLC, to NRC, “Supplement 2 to License Amendment Request 252 Technical Specification 5.6.5, Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR),” dated April 18, 2013 (ADAMS Accession No. ML13113A008).