

Withhold from Public Disclosure Under 10 CFR 2.390(a)(4)



*Energy Harbor Nuclear Corp.
Davis-Besse Nuclear Power Station
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July 21, 2022
L-22-141

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT:
Davis-Besse Nuclear Power Station, Unit No. 1
Docket No. 50-346, License No. NPF-3
Submittal of Reanalysis for Protection Against Low Temperature Reactor Coolant
System Overpressure Events

On January 28, 2011, the U.S. Nuclear Regulatory Commission (NRC) staff issued Amendment No. 282 (ADAMS Accession No. ML103610148) to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1 (DBNPS). This amendment approved changes to the licensing basis for DBNPS associated with the methodology used for the development of the reactor coolant system pressure-temperature limit curves in the unit's Pressure -Temperature Limits Report (PTLR). This amendment also updated License Condition 2.C(3)(d) to state that prior to operation beyond 32 Effective Full Power Years (EFPY), [FirstEnergy Nuclear Operating Company] FENOC shall provide to the NRC a reanalysis and proposed modifications, as necessary, to ensure continued means of protection against low temperature reactor system overpressure (LTOP) events.

In accordance with License Condition 2.C(3)(d), Energy Harbor Nuclear Corp. hereby submits the enclosed reanalyses to ensure continued means of protection against low temperature reactor coolant system overpressure events for the Davis-Besse Nuclear Power Station, Unit No. 1. No modifications have been conducted nor are any modifications scheduled. Davis-Besse Nuclear Power Station, Unit No. 1 is estimated to be at 32 EFPY by October 10, 2022.

Enclosures B and E contain information to be withheld from public disclosure under 10 CFR 2.390(a)(4). Upon removal of Enclosures B and E, this letter is uncontrolled.

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Enclosure A to this letter is affidavit ANP-2718-007 for Enclosure B prepared in accordance with 10 CFR 2.390 requesting that the confidential commercial information provided in Enclosure B be withheld from public disclosure.

Enclosure B contains Framatome Inc. document ANP-2718P-007, "Appendix G Pressure-Temperature Limits for 52 EFPY for the Davis-Besse Nuclear Power Station." This document was prepared to summarize analyses completed to extend DBNPS operation from 32 EFPY to 52 EFPY. This analysis was prepared using the methodologies listed in DBNPS Technical Specification 5.6.4, as supplemented by NUREG-2193, "Safety Evaluation Report Related to the License Renewal of Davis-Besse Nuclear Power Station, dated August 2015, Section 3.0.3.2.14. The limit curves include explicit modeling of the reactor vessel inlet and outlet nozzle welds and the reference temperature shift for these materials based on the expected fluence at 52 EFPY.

Enclosure C contains Framatome Inc. document ANP-2718NP-007, which is the non-proprietary version of "Appendix G Pressure-Temperature Limits for 52 EFPY for Davis-Besse Nuclear Power Station."

Enclosure D to this letter is affidavit 32-9271138-001 pursuant to 10 CFR 2.390 requesting that the confidential commercial information provided in Enclosure E be withheld from public disclosure.

Enclosure E contains Areva document – 32-9271138-001 "Updated inputs to 52 EFPY P-T Operating Curves." This document generates inputs to the procedural Non-destructive testing (NDT) LTOP limits using the location corrected NDT/LTOP pressure-temperature curves and the uncertainties in pressure and temperature measurement. This document identifies that the most limiting aspect of the material analyses prepared for the 52 EFPY PTLR curves is the inlet nozzle (cold leg) forgings where they meet the nozzle belt and the welds at the same location.

Enclosure F contains Areva document 32-9344638-000 "Updated inputs to 52 EFPY P-T Operating Curves." This is the nonproprietary version of Enclosure E.

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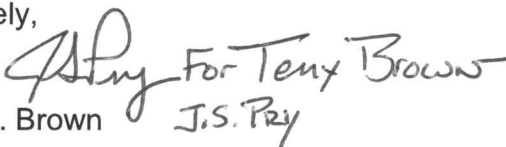
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During the spring of 2018, Energy Harbor removed the DBNPS reactor cavity dosimetry that was installed the spring of 2014 and discovered that the assumption used for fluence projects previously used for Enclosure B was incorrect. This was documented in the corrective action program. As a result, Framatome was contacted to perform a reconciliation of the new analysis for "Appendix G Pressure-Temperature limits for 52 EFPY" to account for increased reactor vessel fluence projections resulting from cycle 19 through 20 reactor cavity dosimetry analysis results. This is Enclosure G Framatome document 86-9344713-000, "Davis-Besse Reactor Vessel Embrittlement Fluence Reconciliation Through 60 Years." The analyzed fluence for these locations will be reached at 43.5 EFPY based on fast leakage flux data for fuel cycles 19 and 20. The DBNPS Pressure and Temperature Limits Report is being revised to reflect 43.5 EFPY.

There are no regulatory commitments contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Phil H. Lashley, Manager – Fleet Licensing, at (330) 696-7208.

Sincerely,


Terry J. Brown J.S. Pry

Enclosures:

- A. Affidavit Pursuant to 10 CFR 2.390 for ANP-2718-007
- B. Framatome Inc. document ANP-2718P-007, "Appendix G Pressure-Temperature Limits for 52 EFPY for the Davis-Besse Nuclear Power Station." Proprietary
- C. Framatome Inc. document ANP-2718NP-007 "Appendix G Pressure-Temperature Limits for 52 EFPY for Davis-Besse Nuclear Power Station." Nonproprietary
- D. Affidavit Pursuant to 10 CFR 2.390 for 32-9271138-001
- E. Areva document – 32-9271138-001 "Updated inputs to 52 EFPY P-T Operating Curves." Proprietary
- F. Areva document 32-9344638-000 "Updated inputs to 52 EFPY P-T Operating Curves." Nonproprietary
- G. Framatome Inc. document 86-9344713-000, "Davis-Besse Reactor Vessel Embrittlement Fluence Reconciliation Through 60 Years"

cc: NRC Region III Administrator
NRC Resident Inspector
NRC Project Manager
Utility Radiological Safety Board