



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-15-215

October 27, 2015

10 CFR 50.55a

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

Browns Ferry Nuclear Plant, Unit 1
Renewed Facility Operating License No. DPR-33
NRC Docket No. 50-259

Subject: **Response to NRC Request for Additional Information Regarding Browns Ferry Nuclear Plant, Unit 1, American Society of Mechanical Engineers Section XI, Inservice Inspection and Augmented Program, Second Ten Year Interval Request For Relief 1-ISI-27 (CAC No. MF6401)**

- References:
1. Letter from TVA to NRC, CNL-15-125, "Browns Ferry Nuclear Plant (BFN) Unit 1, American Society of Mechanical Engineers (ASME) Section XI, Inservice Inspection (ISI) and Augmented Program, Second Ten Year Interval Request For Relief 1-ISI-27," dated June 26, 2015 (ML15181A448)
 2. Letter from NRC to TVA, "Browns Ferry Nuclear Plant, Unit 1 - Request for Additional Information Related to Relief Request for the Use of Alternatives to Certain American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI Requirements (CAC No. MF6401) (CNL-15-125)," dated October 6, 2015 (ML15274A574)

By letter dated June 26, 2015 (Reference 1), Tennessee Valley Authority (TVA) submitted a request for an alternative from inservice inspection (ISI-27), pertaining to Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code for Browns Ferry Nuclear Plant (BFN), Unit 1. The proposed alternative would provide relief from reactor vessel circumferential weld examinations currently required by ASME Code for the period of extended operation ending December 20, 2033.

By letter dated October 6, 2015, the Nuclear Regulatory Commission (NRC) sent a request for additional information (RAI) (Reference 2). The due date for the response is October 30, 2015. The enclosure to this letter provides TVA's response to the NRC RAI.

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Consistent with the standards set forth in Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50.92(c), TVA has determined that the additional information, as provided in this letter, does not affect the no significant hazards consideration determination associated with the request provided in Reference 1.

There are no new regulatory commitments contained in this submittal. Please address any questions regarding this submittal to Mr. Jamie L. Paul at (256) 729-2636.

Respectfully,



J. W. Shea
Vice President, Nuclear Licensing

Enclosure:

Response to NRC Request for Additional Information Regarding Browns Ferry Nuclear Plant, Unit 1, American Society of Mechanical Engineers Section XI, Inservice Inspection and Augmented Program, Second Ten Year Interval Request For Relief 1-ISI-27

cc (Enclosures):

NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant
NRC Project Manager - Browns Ferry Nuclear Plant

ENCLOSURE

Response to NRC Request for Additional Information Regarding Browns Ferry Nuclear Plant, Unit 1, American Society of Mechanical Engineers Section XI, Inservice Inspection and Augmented Program, Second Ten Year Interval Request For Relief 1-ISI-27

NRC RAI No. 1

The fluence value used in the June 26, 2015 request is based on the December 18, 2013 license amendment request.

The staff noted that the fluence at the clad-to-base metal interface in Table 3 of the June 26, 2015 submittal does not match that from Table B-5 of the December 18, 2013 license amendment request.

Clarify the above inconsistency and revise the June 26, 2015 letter (as needed) to accurately reflect the fluence on the beltline, circumferential (girth) weld.

TVA Response

Information from NUREG-1843 (Reference 1), Section 4.2.6.2, was provided as the basis for the June 26, 2015, request for relief. The table from NUREG-1843 comparing BFN Unit 1 Reactor Vessel (RV) limiting weld parameters to those used in the NRC evaluation of the BWRVIP-05 Report (Reference 2) was included as Table 2 of the request. The fluence values provided in the table correspond to the Peak I.D. fluence.

Table 3 of the request includes a comparison of the BWRVIP-05 data with revised BFN Unit 1 RV limiting circumferential weld parameters based upon revised BFN Unit 1 P/T curves from a December 18, 2013, License Amendment Request (LAR) (Reference 3). The value of 0.0886 provided for "Fluence at Clad/Weld Interface 10^{19} n/cm²" in Table 3 of the request is the 38 EFPY 1/4T fluence value and not the Peak I.D. fluence value. This inconsistency was entered into the TVA corrective action program as CR #1095049.

Table 3 of the request is revised to remove the inconsistency by replacing the 38 EFPY 1/4T fluence value of 0.0886E+19 n/cm² with the 38 EFPY Peak I.D. fluence of 0.128E+19 n/cm² from Table B-5 of Enclosure 2 of the Reference 3 LAR as follows:

TABLE 3

Group	B&W 64 EFPY	BFN Unit 1 38 EFPY
Cu %	0.31	0.27
Ni %	0.59	0.6
CF	196.7	184
Fluence at Clad/Weld Interface 10^{19} n/cm ²	0.19	<u>0.128</u>
Delta RT _{NDT} Without Margin (°F)	109.4	72
Initial RT _{NDT} (°F)	20	20
Mean RT _{NDT} (°F)	129.4	92
P (F/E) NRC	4.83×10^4	-
P (F/E) BWRVIP	-	-

References:

1. NUREG-1843, "Safety Evaluation Report Related to the License Renewal of the Browns Ferry Nuclear Plant, Units 1, 2, and 3," April 2006
2. NRC letter from Gus. C. Lainas to Carl Terry, Niagara Mohawk Power Company, BWRVIP Chairman, "Final Safety Evaluation of the BWRVIP Vessel and Internals Project BWRVIP-05 Report," (TAC No. M93925), July 28, 1998
3. Letter from TVA to NRC, CNL-13-148, Browns Ferry Nuclear Plant (BFN), Unit 1 - Application to Modify Technical Specifications 3.4.9, 'RCS Pressure and Temperature (P/T) Limits' (BFN TS-484), dated December 18, 2013 (ML13358A067)