



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

January 8, 2002

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

Gentlemen:

In the Matter of	)	Docket Nos. 50-260
Tennessee Valley Authority	)	50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 2 AND 3 - REQUEST FOR  
ADOPTION OF BOILING WATER REACTOR VESSEL INTERNALS PROJECT  
(BWRVIP)-75 WELD EXAMINATION SCHEDULE**

- References:
1. BWRVIP letter to NRC dated October 27, 1999, "BWR Vessel and Internals Project, Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules (BWRVIP-75)"
  2. NRC letter to BWRVIP Chairman dated September 15, 2000, "Safety Evaluation of the BWRVIP Vessel and Internals Project, BWR Vessel and Internals Project, Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules (BWRVIP-75), EPRI Report TR-113932, October 1999 (TAC No. MA5012)"

In reference 1, the BWRVIP submitted a report, "BWRVIP Technical Basis for revisions to Generic Letter (GL) 88-01 Inspection Schedules (BWRVIP-75)" for NRC review and approval. In reference 2, NRC issued a Safety Evaluation (SE), which approved the BWRVIP-75 inspection schedule for use, with the exception of nine open items, in lieu of the schedule established in NUREG-0313, Revision 2, to address the staff's positions described in GL 88-01.

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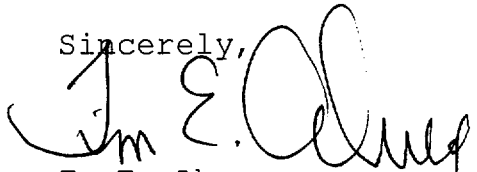
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TVA requests NRC approval to adopt the revised austenitic stainless steel piping weld inspection schedule criteria contained in Electric Power Research Institute (EPRI) proprietary report TR-113932 (BWRVIP-75), as modified in the enclosure, in lieu of our present commitments to GL 88-01. The proposed alternative applies to welds and piping within the scope of GL 88-01 and NUREG 0313, Revision 2. Those welds selected for examination in accordance with the BFN Units 2 and 3 Risk-Informed Inservice Inspection Programs are not affected by this proposed alternative.

The enclosure to this letter provides the basis and justification for a revised inspection schedule in accordance with BWRVIP-75 and addresses the open items identified in the NRC safety evaluation (reference 2). TVA requests that NRC review and approve this request by March 1, 2002, to support the spring refueling outage for Unit 3.

If you have any questions, please contact me at (256) 729-2636.

Sincerely,

A handwritten signature in black ink, appearing to read "T. E. Abney", is written over the typed name and title.

T. E. Abney  
Manager of Licensing  
and Industrial Affairs

cc: See Page 3

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Enclosure

cc: (Enclosure)

(Via NRC Electronic Distribution)

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## ENCLOSURE

### TENNESSEE VALLEY AUTHORITY BROWNS FERRY NUCLEAR PLANT (BFN) UNITS 2 AND 3

#### AUSTENITIC WELD INSPECTION SAMPLE SIZE AND SCHEDULING IN ACCORDANCE WITH BWRVIP-75

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#### Background

The current BFN augmented intergranular stress corrosion cracking (IGSCC) examination program is implemented by the applicable unit's Inservice Inspection (ISI) Program. The existing ISI programs follow the sample size and scheduling requirements in GL 88-01 and NUREG 0313, Revision 2, with the exception of Category A welds in Unit 2 which are evaluated for examination in accordance with TVA's Risk-Informed ISI Program. The BFN risk informed evaluation process was approved in safety evaluations transmitted by NRC letters dated January 19, 2001 (TAC No. MA8873) for Unit 2, and February 11, 2000 (TAC No. MA5355) for Unit 3.

The BWRVIP submitted a report, "BWR Vessel and Internals Project, Technical Basis for Revisions to GL 88-01 Inspection Schedules (BWRVIP-75)," to NRC for review on October 27, 1999. The report proposed revisions to the extent and frequency of austenitic stainless steel piping weld examination schedules contained in GL 88-01. The proposed revisions are based on piping examination results and service experience from BWR operation and the benefits of improved water chemistry. NRC issued a Safety Evaluation Report approving the adoption of BWRVIP-75 guidance on September 15, 2000, with nine open items to be addressed by licensees.

TVA proposes to adopt the examination sampling and schedule described in BWRVIP-75 as modified by the open items in the NRC safety evaluation described below for BFN Units 2 and 3.

The Open Item Numbers correspond to those listed in the NRC safety evaluation (reference 2). The IGSCC examination categories referenced are those listed in GL 88-01 and NUREG 0313, Revision 2.

### Open Item 3.1 Proposed Inspection Frequency and Scope for Category A Welds

The Category A welds are included in the Risk-Informed Inservice Inspection (RI-ISI) program for BFN Units 2 and 3. The risk informed evaluation process was approved by NRC letters dated January 19, 2001 (TAC No. MA8873) for Unit 2, and February 11, 2000 (TAC No. MA5355) for Unit 3. The Category A welds in Unit 2 were specifically addressed in that unit's safety evaluation since the risk-informed analysis reduced the number of welds subject to examination when compared to the requirements of GL 88-01.

The risk informed process at BFN determines the consequence and failure probability for each Category A weld in high safety significant segments, which is then incorporated into the risk ranking process. The applicable degradation mechanisms are considered along with mitigation efforts - resistant materials, stress improvement, and/or Hydrogen Water Chemistry. TVA will perform the selection, frequency, and sample expansion for the Category A welds in accordance with the applicable unit's RI-ISI program.

### Open Item 3.2 Proposed Inspection Frequency for Category B Welds

There are no Category B welds in BFN Units 2 and 3.

### Open Item 3.3 Proposed Inspection Frequency for Category C Welds

The Category C welds for BFN Units 2 and 3 have received either Induction Heat Stress Improvement (IHSI) or Mechanical Stress Improvement Process (MSIP) as an IGSCC mitigating measure. The welds which received IHSI only will be considered for inclusion in the BWRVIP-75 sampling and frequency based on compliance with the recommendations of BWRVIP-61, "Induction Heating Stress Improvement Effectiveness on Crack Growth in Operating Plants."

TVA proposes to utilize the normal water chemistry (NWC) sample size of 25 percent over a ten year interval for the Category C welds.

#### Open Item 3.4 Proposed Inspection Frequency for Category E Welds (weld overlay repair)

TVA proposes to utilize the NWC sample size of 25 percent over a ten year interval for the examination of Category E weldments with weld overlay repair. The Category E weldments identified for the 25 percent inspection frequency will have been examined during two successive satisfactory inspections with qualified procedures where no indication of crack growth or new cracking has occurred in the weld overlay or in the upper portion (defined as approximately 25 percent) of the piping and weld under the weld overlay. TVA's proposal is a compromise between the BWRVIP-75 position of one post inspection and the NRC position requiring three post inspections.

#### Open Item 3.5 Inspection of Category E Welds (Stress Improved) with Existing Cracks

TVA proposes to schedule the Category E weld examination with existing cracks and no overlay in accordance with the Category D NWC schedule of once per six years. This would be done following three successive satisfactory inspections with qualified procedures. TVA's proposal is a compromise between the BWRVIP-75 position of two successive inspections and the NRC position requiring four successive inspections.

#### Open Item 3.6 Sample Expansion

Sample expansion will be performed in accordance with the requirements of GL 88-01 with the exception of Category A welds, which follow the Risk-Informed ISI Program criteria for each unit.

#### Open Item 3.7 Reactor Water Coolant Conductivity

The reactor water coolant conductivity goal for BFN Units 2 and 3 is less than 0.11  $\mu\text{S}/\text{cm}$ . Typical daily values are in the 0.10  $\mu\text{S}/\text{cm}$  range. The administrative limit for conductivity is 0.30  $\mu\text{S}/\text{cm}$ . These values are consistent with the recommendations of BWRVIP-29.

### Open Item 3.8 Effective HWC and NMCA Programs

BFN Units 2 and 3 have implemented hydrogen water chemistry (HWC) and noble metal chemistry addition (NMCA) programs. However, BFN is currently requesting IGSCC inspection schedules in accordance with a normal water chemistry program.

### Open Item 3.9 Identification of Safety Significant Locations

TVA will utilize risk insights and specific weld criteria, including potential degradation mechanisms, to identify safety significant locations for examination. Personnel selecting the inspection locations will be knowledgeable of the IGSCC mechanism and its impact on the subject piping systems.