

June 7, 2004

U.S. Nuclear Regulatory Commission  
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Washington, D.C. 20555-0001

Gentlemen:

In the Matter of ) Docket No. 50-259  
Tennessee Valley Authority )

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNIT 1 - RESPONSE TO NRC  
BULLETIN NO. 90-01, SUPPLEMENT 1 - LOSS OF FILL OIL IN  
TRANSMITTERS MANUFACTURED BY ROSEMOUNT**

This letter provides TVA's response to NRC Bulletin 90-01, Supplement 1, "Loss of Fill Oil in Transmitters Manufactured by Rosemount," for BFN Unit 1 (Reference 1). TVA responded to NRC Bulletin 90-01, Supplement 1 by letter dated March 5, 1993 for BFN Units 1, 2, and 3 (Reference 2). In that response, TVA committed to notify the NRC of its plans for resolution of the Rosemount transmitter issue for BFN Unit 1 prior to restart from its current extended outage. This letter fulfills that commitment.

The NRC closed this issue for BFN Units 2 and 3 in a Safety Evaluation transmitted by letter dated April 4, 1995 (Reference 3). In that letter, the NRC acknowledged TVA's commitment to notify the NRC of its resolution of NRC Bulletin 90-01, Supplement 1 for BFN Unit 1 prior to its restart, and indicated that the NRC staff's evaluation of the issue for BFN Unit 1 would be provided following the NRC's receipt of the requested information. TVA is replacing the BFN Unit 1 Rosemount transmitters that meet the criteria specified in NRC Bulletin 90-01, Supplement 1 with new or refurbished transmitters. These actions are consistent with those taken for BFN Unit 3, which was closed out by the NRC in Reference 3.

Enclosure 1 contains TVA's response to the NRC Bulletin 90-01, Supplement 1 requested actions.

Enclosure 2 identifies one new commitment contained within this submittal.

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

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 7, 2004.

Sincerely,

**Original signed by:**

T. E. Abney  
Manager of Licensing  
and Industry Affairs

References:

1. NRC Bulletin 90-01, Supplement 1, dated December 22, 1992, "Loss of Fill Oil in Transmitters Manufactured by Rosemount."
2. Letter from TVA to NRC dated March 05, 1993, "Browns Ferry Nuclear Plant (BFN) - Units 1, 2, and 3 - Response to NRC Bulletin No. 90-01, Supplement 1 - Loss of Fill Oil in Transmitters Manufactured by Rosemount."
3. Letter from NRC to TVA dated April 4, 1995, "NRC Bulletin 90-01, Supplement 1, Loss of Fill Oil in Transmitters Manufactured by Rosemount - Browns Ferry Nuclear Plant Units 1, 2, and 3 (TAC Nos. M85361, M85362, and M85363)."

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(Via NRC Electronic Distribution)  
U.S. Nuclear Regulatory Commission  
Region II  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW, Suite 23T85  
Atlanta, Georgia 30303-3415

Mr. Stephen J. Cahill, Branch Chief  
U.S. Nuclear Regulatory Commission  
Region II  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW, Suite 23T85  
Atlanta, Georgia 30303-8931

NRC Senior Resident Inspector  
Browns Ferry Nuclear Plant  
10833 Shaw Road  
Athens, AL 35611-6970

Kahtan N. Jabbour, Senior Project Manager  
U.S. Nuclear Regulatory Commission  
(MS 08G9)  
One White Flint, North  
11555 Rockville Pike  
Rockville, Maryland 20852-2739

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MJB:BAB  
Enclosures

cc: (w/o Enclosures):

A. S. Bhatnagar, LP 6A-C  
M. J. Burzynski, BR 4X-C  
J. E. Maddox, LP 6A-C  
R. F. Marks, PAB 1C-BFN  
R. G. Jones, NAB 1A-BFN  
D. C. Olcsvary, LP 6A-C  
J. R. Rupert, NAB 1A-BFN  
K. W. Singer, LP 6A-C  
M. D. Skaggs, POB 2C-BFN  
E. J. Vigluicci, ET 11A-K  
NSRB Support, LP 5M-C  
EDMS-K (w/Enclosure)

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**ENCLOSURE 1**

**TENNESSEE VALLEY AUTHORITY  
BROWN FERRY NUCLEAR (BFN) UNIT 1**

**RESPONSE TO NRC BULLETIN 90-01  
LOSS OF FILL OIL IN  
TRANSMITTERS MANUFACTURED BY ROSEMOUNT**

On December 22, 1992, the NRC issued NRC Bulletin 90-01, Supplement 1 (Supplement 1), "Loss of Fill Oil in Transmitters Manufactured by Rosemount," (Reference 1). That bulletin discussed reported failures of Rosemount Models 1153 and 1154 transmitters, and requested that licensees take specific actions to identify, and replace or monitor those transmitters identified as being from suspect lots. The actions requested in Supplement 1 superseded those requested in previously issued NRC Bulletin 90-01 (Reference 2).

At the time of issuance of Supplement 1, BFN Unit was in its current extended outage. TVA responded to Supplement 1 by letter dated March 5, 1993 (Reference 3), for BFN Units 1, 2, and 3, but committed to notify the NRC at a later date, and prior to BFN Unit 1 restart, of the disposition of suspect transmitters installed in BFN Unit 1. The NRC closed out this issue for BFN Units 2 and 3 with a safety evaluation dated April 4, 1995 (Reference 4), and acknowledged TVA's commitment to address the issue for BFN Unit 1 prior to its restart. TVA's responses for BFN Unit 1 to the actions requested in Supplement 1 are provided below. TVA's planned actions for addressing the issue for BFN Unit 1 (i.e., replacing all transmitters in the suspect lots) are consistent with those actions taken for BFN Unit 3 which were closed by the NRC in Reference 4.

It should be noted that this response corrects information previously reported in Reference 3 for BFN Unit 1. Reference 3 incorrectly stated that four of the 28 BFN Unit 1 transmitters that met the criteria identified in Supplement 1 fell into the category of Requested Action 1f (Pressure < 500 psig). This response correctly reports that all 28 of these transmitters fall into the category of Requested Action 1c (500 psig < Pressure < 1500 psig). Regardless, as discussed below, TVA is replacing all 28 transmitters with new or refurbished units.

**Requested Action 1:**

Review plant records and identify any Rosemount Model 1153 Series B, Model 1153 Series D or Model 1154 transmitters manufactured before July 11, 1989, that are used or may be used in the future in either safety-related systems or systems installed in

accordance with 10 CFR 50.62 (the Anticipated Transient Without Scram (ATWS) rule).

**TVA Response:**

Plant records have been reviewed for BFN Unit 1. Twenty-eight (28) transmitters meeting the criteria above were identified.

**Requested Action 1a:**

Expediently replace, or monitor for the life of the transmitter on a monthly basis using an enhanced surveillance monitoring program, any transmitters that have a normal operating pressure greater than 1500 psi and that are installed in reactor protection trip systems, ESF actuation systems or ATWS systems.

**TVA Response:**

BFN Unit 1 has no transmitters installed meeting the criteria of Requested Action 1a.

**Requested Action 1b:**

Replace, or monitor for the life of the transmitter on a quarterly basis using an enhanced surveillance monitoring program, any transmitters that have a normal operating pressure greater than 1500 psi and that are used in safety-related applications but are not installed in reactor protection trip systems, ESF actuation systems, or ATWS systems.

**TVA Response:**

BFN Unit 1 has no transmitters installed meeting the criteria of Requested Action 1b.

**Requested Action 1c:**

Replace, or monitor on a monthly basis using an enhanced surveillance monitoring program, until the transmitter reaches the appropriate psi-month threshold criterion recommended by Rosemount, any transmitters that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi, that are installed in reactor protection trip systems, ESF actuation systems or ATWS systems.

**TVA Response:**

TVA identified 28 transmitters meeting the criteria identified in Requested Action 1c. TVA will replace these transmitters prior to BFN Unit 1 restart.

**Requested Action 1d:**

Replace, or monitor at least once every refueling cycle, but not exceeding 24 months, using an enhanced surveillance monitoring program until the transmitter reaches the appropriate psi-month threshold criterion recommended by Rosemount, any transmitters used in safety-related systems that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi, and that are not installed in reactor protection trip systems, ESF actuation systems, or ATWS systems.

**TVA Response:**

BFN Unit 1 has no transmitters installed meeting the criteria of Requested Action 1d.

**Requested Action 1e:**

At licensee discretion, exclude from the enhanced surveillance program any transmitters that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi that have reached the appropriate psi-month threshold criterion recommended by Rosemount (60,000 psi-months or 130,000 psi-months depending on the range code of the transmitter).

**TVA Response:**

TVA will replace those transmitters meeting the criteria of Requested Action 1. Therefore no enhanced monitoring program is planned.

**Requested Action 1f:**

At licensee discretion, exclude from enhanced monitoring program those transmitters included in requested Action 1 that have a normal operating pressure less than 500 psig. Exclusion is permissible provided that there is a high degree of confidence in the reliability of the function consistent with safety significance and there is a high degree of confidence in the ability to detect failures.

**TVA Response:**

BFN Unit 1 has no transmitters installed meeting the criteria of Requested Action 1f.

**Requested Action 2:**

Evaluate the enhanced surveillance monitoring program to ensure that the program provides measurement data with an accuracy range

consistent with that needed for comparison with manufacturer drift data criteria for determining degradation caused by a loss of fill-oil.

**TVA Response:**

TVA will replace the 28 transmitters meeting the criteria of Requested Action 1. Therefore no enhanced monitoring program is planned.

References:

1. NRC Bulletin 90-01, Supplement 1, dated December 22, 1992, "Loss of Fill Oil in Transmitters Manufactured by Rosemount."
2. NRC Bulletin 90-01, dated March 9, 1990, "Loss of Fill Oil in Transmitters Manufactured by Rosemount."
3. Letter from TVA to NRC dated March 5, 1993, "Browns Ferry Nuclear Plant (BFN) - Units 1, 2, and 3 - Response to NRC Bulletin No. 90-01 Supplement 1 - Loss of Fill Oil in Transmitters Manufactured by Rosemount."
4. Letter from NRC to TVA dated April 4, 1995, "NRC Bulletin 90-01, Supplement 1, Loss of Fill Oil in Transmitters Manufactured by Rosemount - Browns Ferry Nuclear Plant Units 1, 2, and 3 (TAC Nos. M85361, M85362, and M85363)."

**ENCLOSURE 2**

**TENNESSEE VALLEY AUTHORITY  
BROWN FERRY NUCLEAR (BFN) UNIT 1**

**RESPONSE TO NRC BULLETIN 90-01  
LOSS OF FILL OIL IN  
TRANSMITTERS MANUFACTURED BY ROSEMOUNT**

**COMMITMENT SUMMARY**

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Prior to Unit 1 restart, TVA will replace the 28 Model 1153 Series B, Model 1153 series D, and Model 1154 Rosemount transmitters manufactured prior to July 11, 1989 installed in BFN Unit 1 safety-related or ATWS applications.