

February 7, 2005

Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 1 — CLOSEOUT OF
BULLETIN 90-01, SUPPLEMENT 1, LOSS OF FILL-OIL IN TRANSMITTERS
MANUFACTURED BY ROSEMOUNT (TAC NO. MC3381)

Dear Mr. Singer:

On March 9, 1990, the U.S. Nuclear regulatory Commission (NRC) issued Bulletin 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," which requested that licensees promptly identify and take appropriate corrective actions for Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured by Rosemount that may be or have the potential for leaking fill-oil. Subsequently, on December 22, 1992, the NRC issued Supplement 1 to Bulletin 90-01 to inform the addressees of activities taken by the NRC staff and the industry in evaluating Rosemount transmitters and to request licensees to take actions to resolve this issue.

By letter dated June 7, 2004, the Tennessee Valley Authority (TVA) submitted a response to NRC Bulletin 90-01, Supplement 1, for Browns Ferry Nuclear Plant, Unit 1. As discussed in the enclosed safety evaluation, the NRC staff finds that the response provided by TVA is acceptable. If you have any questions regarding this matter, please contact me at (301) 415-4041.

Sincerely,

/RA/

Margaret H. Chernoff, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No.: 50-259

Attachment: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
NUCLEAR REGULATORY COMMISSION BULLETIN 90-01, SUPPLEMENT 1
LOSS OF FILL-OIL IN TRANSMITTERS MANUFACTURED BY ROSEMOUNT
BROWNS FERRY NUCLEAR PLANT, UNIT 1
TENNESSEE VALLEY AUTHORITY
DOCKET NO. 50-259

1.0 INTRODUCTION

By letter dated June 7, 2004, Tennessee Valley Authority (TVA or the licensee) submitted a response to the U.S. Nuclear regulatory Commission (NRC) Bulletin 90-01, Supplement 1, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," for Browns Ferry Nuclear Plant (BFN), Unit 1.

2.0 REGULATORY EVALUATION

NRC Bulletin 90-01, Supplement 1, was issued by the NRC on December 22, 1992, to inform addressees of activities taken by the NRC staff and the industry in evaluating Rosemount transmitters and to request licensees to take actions to resolve this issue. In addition, Supplement 1 requested that the licensees review the information for applicability to their facilities, perform testing on the transmitter commensurate with its importance to safety and demonstrated failure rate, and modify, as appropriate, their actions and enhanced surveillance programs. Licensees were also requested to provide a response that included a statement as to whether or not the licensee will take the actions requested, a list of specific actions that the licensee would complete, and the schedule for completing the actions. By letter dated March 5, 1993, TVA responded to Bulletin 90-01, Supplement 1, for BFN Units 1, 2, and 3. The staff found the TVA response acceptable for BFN Units 2 and 3, and issued a safety evaluation dated April 4, 1995.

In the March 5, 1993, letter, 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. The June 7, 2004, letter was issued to fulfill that commitment.

3.0 TECHNICAL EVALUATION

3.1 NRC Bulletin 90-01, Supplement 1, requested that the licensees review the information contained in the bulletin for applicability to their facilities and take appropriate actions. Licensees were also requested to provide a response to the bulletin confirming the review of the information, whether or not the licensee would take the actions requested,

ENCLOSURE

and the schedule for completing the actions. The actions requested and TVA's response are as shown below.

3.1.1 Requested Action 1: Review plant records and identify any Rosemount Model 1153 Series B, Model 1153 Series D, and 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 ATWS [anticipated transient without scram] rule). TVA Response: Plant records have been reviewed for BFN Unit 1. Twenty-eight (28) transmitters meeting the criteria above were identified.

3.1.2 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, engineered safety feature (ESF) actuation systems or ATWS systems.

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

3.1.3 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.

3.1.4 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.

3.1.5 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.

- 3.1.6 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.

- 3.1.7 Requested Action 1f: At licensee discretion, exclude from the enhanced surveillance program any transmitters that have a normal operating pressure less than or equal to 500 psi. A high degree of confidence should be maintained for detecting failure of these transmitters caused by a loss of fill-oil and a high degree of reliability should be maintained for the function consistent with its safety significance.

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

- 3.1.8 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.

- 3.2 The staff has reviewed TVA's response to the requested actions, and in the case of Requested Actions 1, 1a, 1b, 1d, and 1f, BFN Unit 1 has no transmitters that meet the criteria, and therefore no action is required. In the case of Requested Action 1c, 1e, and 2, TVA has committed to the replacement of the 28 identified transmitters that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi prior to BFN Unit 1 coming out of its extended outage and being restarted. Since these transmitters will be replaced before the systems in which they are used are required to perform any safety function, the staff agrees that no enhanced monitoring program is required.

4.0 CONCLUSION

On the basis of the above regulatory and technical evaluations of TVA's response to Bulletin 90-01, Supplement 1, for BFN Unit 1, the staff concludes that the response is acceptable.

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Date: February 7, 2005

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BROWNS FERRY NUCLEAR PLANT

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