



Tennessee Valley Authority Post Office Box 2000, Spring City, Tennessee 37381-2000

William J. Museler
Site Vice President, Watts Bar Nuclear Plant

MAR 29 1994

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

Gentlemen:

In the Matter of the Application of)	Docket Nos. 50-390
Tennessee Valley Authority)	50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - NRC BULLETIN 88-08 - THERMAL STRESSES IN PIPING CONNECTED TO REACTOR COOLANT SYSTEMS (RCS)

This letter provides TVA's response to Item 3 of Actions Requested in the subject bulletin and also Supplement 3 of the bulletin for WBN. In addition, this letter provides confirmation that the actions associated with the bulletin have been completed for WBN Unit 1.

In TVA's initial response to the bulletin dated August 6, 1990, TVA committed to implement a program to prevent thermal stratification for WBN Unit 1 and 2 before initial criticality of the respective units, as recommended by Item 3 of Actions Requested. In NRC's letter dated October 23, 1991, NRC provided additional information that may be used to assess the adequacy of the WBN program with respect to Item 3 of Actions Requested and Supplement 3 of the bulletin. These actions requested applicants to plan and implement a program that provides continuing assurance that unisolable sections of all piping connected to the RCS will not be subjected to combined cyclic and static thermal and other stresses that could cause fatigue failure during the remaining life of the plant.

In accordance with that requested action, TVA, in conjunction with Aptech Engineering Services (AES), have completed the program implementation for WBN Unit 1 and the engineering evaluation for WBN Unit 2 to resolve the concern of potential stratification and thermal cycling that could cause fatigue failure to the unisolable piping sections connected to the RCS. Enclosure 1 is a copy of the AES Engineering Report (AES 93081991-1Q-2) "WBN Response to NRC Bulletin 88-08" that documents the evaluation and resolutions performed in response to the bulletin.

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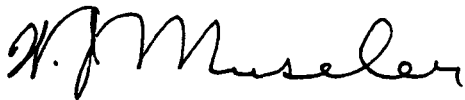
The results of the engineering evaluation and analyses utilizing the guidelines provided in NRC's letter dated October 23, 1991, indicate that only the 1-1/2 inch safety injection (SI) lines attached to the Unit 1, RCS Loops 1 and 2, and to the Unit 2 RCS Loop 1 are found to be susceptible to valve leakage that could lead to thermal stratification and cycling. Other unisolable lines were determined, based on their configurations, system design and operating conditions, not to be susceptible to thermal stratification and cycling.

As a corrective action, a modification for the Unit 1 SI lines has been implemented. This modification relocated the check valves to positions where the lines are not susceptible to valve leakage caused by thermal stratification, as recommended in the Acceptable Actions of NRC's letter dated October 23, 1991, Item 4.0-(2). This completes the actions required by the bulletin with regard to WBN Unit 1.

As for the Unit 2 1-1/2 inch SI line attached to RCS Loop 1, TVA will implement one of the proposed modifications in Section 6 of the enclosed AES Report to preclude the consideration of valve leakage caused by thermal stratification and cycling before initial criticality of Unit 2 and submit a letter that confirms actions are complete for WBN Unit 2 within 30 days of completion of the modification.

Enclosure 2 provides the commitment list for commitments that will be tracked from this letter. If you should have any questions, contact J. Vorees at (615)-365-8819.

Very truly yours,



William J. Museler

Enclosure

cc: See page 3

U.S. Nuclear Regulatory Commission

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cc (Enclosure):

NRC Resident Inspector
Watts Bar Nuclear Plant
Rt. 2, Box 700
Spring City, Tennessee 37381

Mr. P. S. Tam, Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

ENCLOSURE 1

WATTS BAR NUCLEAR PLANT
RESPONSE TO NRC BULLETIN 88-08

APTECH ENGINEERING SERVICES REPORT
AES 93081991-1Q-2

APTECH IS APPLIED TECHNOLOGY

May 4, 1994

Mr. R.M. Johnson
Tennessee Valley Authority
Watts Bar Nuclear Plant
Watts Bar Dam, Tennessee 37381

Attention: Mr. Wayne Smathers

RE: Public Use of APTECH Report AES 93081991-1Q-2

Dear Mr. Smathers:

The subject report contains no information proprietary to Aptech Engineering Services, Inc. (APTECH) and may be placed in the Public Document Room.

If you have any questions regarding this letter, please do not hesitate to contact Mr. Roy Uffer at (408) 745-7000 or me at (615) 499-3777.

Very truly yours,

R. A. Uffer
Albert E. Curtis, III
Manager, Nuclear Projects

AEC:lh

cc: J. Adair
S. Azzazy
D. Davis
R. Cipolla
R. Uffer

ENCLOSURE 2

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
NRC BULLETIN
THERMAL STRESSES IN PIPING CONNECTED TO THE RCS

COMMITMENT LIST

TVA will implement one of the proposed modifications in Section 6 of the enclosed AES Report to preclude the consideration of valve leakage caused by thermal stratification and cycling before initial criticality of Unit 2 and submit a letter that confirms actions are complete for WBN Unit 2 within 30 days of completion of the modification.



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May 19, 1994

Mr. R.M. Johnson
Tennessee Valley Authority
Watts Bar Nuclear Plant
Watts Bar Dam, Tennessee 37381

Attention: Mr. Wayne Smathers

RE: Public Use and Waiver of Copyright of APTECH Report AES 93081991-1Q-2

Dear Mr. Smathers:

The subject report contains no information proprietary to Aptech Engineering Services, Inc. (APTECH) and may be placed in the Public Document Room. APTECH waives the copyright protection statement found on the back of the cover page of the report.

If you have any questions regarding this letter, please do not hesitate to contact Mr. Roy Uffer at (408) 745-7000 or me at (615) 499-3777.

Very truly yours,

Albert E. Curtis, III
Manager, Nuclear Projects

AEC:lh

cc: J. Adair
S. Azzazy
D. Davis
R. Cipolla
R. Uffer

