Docket Nos. 50-390
and 50-391

August 21, 1991

Mr. Dan A. Nauman
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. Nauman:

SUBJECT: WATTS BAR NUCLEAR PLANT - BULLETIN 88-05 ON NONCONFORMING PIPING MATERIALS (TAC NOS. 68848 AND 68849)

In TVA's response to Bulletin 88-05, dated August 1, 1991, a testing and evaluation plan was proposed for demonstrating the adequacy of the plant nonconforming material. We have determined that this plan would not provide all the information necessary to determine the adequacy of such material in accordance with the staff position established for near-term operating license (NTOL) reviews. The staff position is summarized in the enclosure.

Please modify your proposed program after you have considered the staff's technical position for NTOL plants. We will determine with your site licensing staff, in the next licensing status meeting, a mutually acceptable target date for your modified program.

This requirement affects 9 or fewer respondents and, therefore, is not subject to Office of Management and Budget review under P.L. 96-511.

Sincerely,

Original signed by

Peter S. Tam, Senior Project Manager
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Bulletin Issues

cc w/enclosure:
See next page

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ENCLOSURE

STAFF POSITION REGARDING RESOLUTION OF BULLETIN 88-05

WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-390/50-391

The NRC staff has developed the following criteria for resolving the bulletin issues for near-term operating license (NTOL) plants. These criteria have been applied since the review activities for NTOL plants began in 1988.

1. All installed suspect components must be identified, including all flanges, fittings and welded lugs.

2. All components not meeting SA-105 hardness requirements (BHN 187-137) shall be tested to assure that their chemistry is conforming. These components must also be evaluated for the applicable service loading conditions and the reduced material strength of the components to determine the adequacy of design margins.

3. A statistically valid sampling plan (such as Mil-STD-105D, Table I and IIa) shall be performed to determine that the chemistry of all the suspect parts conforms to SA-105 requirements. Each heat of material representing installed material should be included.

4. Credit for previously tested samples from representative heats may be taken for the sampling of the nonconforming components under Criterion 2 (above) when the number of required heats is determined under Criterion 3.

In addition, the staff has determined that the best-fit hardness-to-tensile-strength correlation proposed by NUMARC in their report dated October 27, 1988 is not appropriate. The staff has determined that the ASTM SA-370 correlation is sufficiently conservative, and therefore is appropriate.

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cc: Plant Service list

AUG 06 1991

If there are any questions concerning this issue, please telephone S. D. Gilley at (615) 751-7667.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

E. G. Wallace, Manager
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PROPRIETARY INFORMATION

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PROPRIETARY

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

AUG 06 1991

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) - NRC BULLETIN 89-01, SUPPLEMENT 2 - FAILURE OF WESTINGHOUSE STEAM GENERATOR TUBE MECHANICAL PLUGS

This letter provides WBN's response to NRC Bulletin 89-01, Supplement 2, regarding the failure of Westinghouse steam generator tube mechanical plugs. As identified in Enclosures 1, 2, and 3, Westinghouse (W) Inconel 600 (I-600) mechanical plugs have been removed from Unit 1, and four plugs remain in Unit 2.

Enclosures 1 and 2 provide a detailed response to the actions requested in the subject bulletin for Units 1 and 2. Enclosure 3 provides the latest data for the plugs at WBN. This information has been forwarded to W. Enclosure 4 is a list of commitments.

Enclosure 3 of this submittal is proprietary to Westinghouse Electric. An "Application for Withholding Proprietary Information from Public Disclosure" and an accompanying Affidavit (AW-91-167) were submitted by Westinghouse in a May 31, 1991, letter to the NRC (Attention: Mr. J. E. Richardson, Director, Division of Engineering & System Technology) in accordance with 10 CFR Section 2.790. This request was made regarding WCAP-12244, Revision 3, Addendum 2, from which the noted enclosure was taken. Therefore, it is requested that the noted enclosure be handled in accordance with the May 31, 1991, application for withholding and the accompanying affidavit.

PROPRIETARY

ENCLOSURE 1

WATTS BAR NUCLEAR PLANT (WBN)
UNIT 1 RESPONSE

The four Westinghouse Electric Corporation (W) Inconel 600 (I-600) mechanical plugs have been removed from WBN Unit 1. This fact is reflected in Enclosure 3. Installation of W I-600 plugs from all heat numbers has been discontinued and procedures revised accordingly, as stated in TVA's letter dated November 13, 1990 for WBN.

PROPRIETARY

ENCLOSURE 2

WATTS BAR NUCLEAR PLANT (WBN)
UNIT 2 RESPONSE

Action 1: WCAP-12244, Revision 3, Addendum 2, does not accurately reflect the WBN Unit 2 configuration. However, Westinghouse (W) has been notified, and a revision to their data base has been provided as Enclosure 3. The information contained in Enclosure 3 has been verified and accurately reflects the present condition.

Action 2a: The four W Inconel 600 tube plugs will be removed prior to startup.

Action 2b: Action 2a obviates the need for this action.

Action 2c: No plugs from heat NX-5222 are installed in WBN Unit 2.

Action 2d: As stated in TVA's letter dated November 13, 1990 the procedure for steam generator tube plugging has been revised to prohibit the installation of tube plugs made from any Inconel 600 material.

Action 2e: Action 2a obviates the need for this action.

Action 2f: Action 2a obviates the need for this action.

PROPRIETARY

ENCLOSURE 3

WESTINGHOUSE DATA BASE - WCAP 12244

Alloy 600 Mechanical Plug
Date Revised: 07/08/91

Westinghouse Proprietary Class 2

File: EFPD_ALL.WK1

Table 2: Westinghouse Alloy 600 Mechanical Plug Information

INSTALLATION DATA						TEMPERATURE DATA						PLUG DATA		EFPD DATA					STATUS				
Std Plant Alpha	Plug Inst Date	No. of Plug	Plug Heat No.	S/G #	HL or CL	Previous Cycle (°F) (A)		New Cycle (°F) (A)		Total Scaling Factor (B)		Plug Size	Min. Lig.	Initial EFPD to MIN (C)	Ref. Calc. Date (D)	EFPD Mult. Factor (E)	EFPD to Ref. Date (F)	Remain EFPD to MIN (C)	Year to Repair Plugs (G)	Notes	Plugs Re-pair-ed	Plugs Re-mov-ed	T/S Joint Type (H)
						HL	CL	HL	CL	Prev.	New	(In)	(mils)										
WAT	10-83	2	1989	4	HL	617.	559.	617.	559.	11.4	11.4	3/4-D	4.15	2952	07/03/91	0.70	0.0	2952	2002	-	-	2	FR
WAT	10-83	2	2387	4	CL	617.	559.	617.	559.	126.5	126.5	3/4-D	4.15	32628	07/03/91	0.70	0.0	32628	2118	-	-	2	FR
WBT	02-87	1	2387	2	HL	617.	559.	617.	559.	11.4	11.4	3/4-D	4.15	2952	07/03/91	0.70	0.0	2952	2002	-	-	-	FR
WBT	02-87	1	2387	4	HL	617.	559.	617.	559.	11.4	11.4	3/4-D	4.15	2952	07/03/91	0.70	0.0	2952	2002	-	-	-	FR
WBT	02-87	1	2387	2	CL	617.	559.	617.	559.	126.5	126.5	3/4-D	4.15	32628	07/03/91	0.70	0.0	32628	2118	-	-	-	FR
WBT	02-87	1	2387	4	CL	617.	559.	617.	559.	126.5	126.5	3/4-D	4.15	32628	07/03/91	0.70	0.0	32628	2118	-	-	-	FR

Westinghouse Standard Plant Alpha — TVA Plant/Unit

WAT = Watts Bar Unit 1

WBT = Watts Bar Unit 2

PROPRIETARY

ENCLOSURE 4

LIST OF COMMITMENTS

1. The four Westinghouse Inconel 600 steam generator tube plugs will be removed from Watts Bar Unit 2 before startup.