

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

OCT 09 1990

10 CFR 50.46(a)(3)(ii)

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 - 10 CFR 50.46 - SIGNIFICANT
CHANGE IN PEAK CLAD TEMPERATURE - SPECIAL REPORT

On May 15, 1990, TVA was notified of a potential inconsistency in the input to Watts Bar's small break loss of coolant accident (LOCA) analysis. The Westinghouse evaluation results in a potential increase in peak clad temperature of 54°F. Westinghouse, in their letter, concluded that this item was not a code error as defined in 10 CFR 50.46, as "Westinghouse considers the inconsistency to be related to plant specific input assumptions and not an error in the ECCS [Emergency Core Cooling System] evaluation model as described in 10 CFR 50.46." TVA initially interpreted the Westinghouse position to mean that a report, according to 10 CFR 50.46, was not required. On September 6, 1990, TVA revised its position and determined it would be prudent to notify NRC under 10 CFR 50.46(a)(3)(ii).

TVA has concluded that the condition stated in the Westinghouse letter represents a change to the application of an acceptable model which is considered significant (i.e., greater than 50°F). As such, this letter is written to provide the notification as required in 10 CFR 50.46(a)(3)(ii) of a change which is significant.

The inconsistency Westinghouse identified to TVA involved the time assumed for the auxiliary feedwater enthalpy purge delay. The value used by Westinghouse was shorter than the actual time calculated for WBN. This time difference results in an increase in the peak clad temperature of 54°F for the small break LOCA peak clad temperature. The resultant peak clad temperature is now 1771°F, still well within the 10 CFR 50.46(a)(i) limit of 2200°F. The large break LOCA analysis is unaffected. TVA is performing a more detailed evaluation of the auxiliary feedwater purge delay with Westinghouse's concurrence to determine if the peak clad temperature increase is fully applicable to WBN.

00010

9010190178 901009
PDR ADDCK 05000390
P PNU

8001
110

U.S. Nuclear Regulatory Commission

OCT 09 1990

Currently, other issues affecting the peak clad temperature have also been identified by Westinghouse and are being investigated. If these issues are significant, NRC will be notified. The resultant changes will be reviewed by Westinghouse and TVA. No new ECCS analysis is considered necessary at this time. When additional ECCS issues are resolved, the need to reevaluate the ECCS analysis will be studied.

If there are any questions, please telephone P. L. Pace at (615) 365-1824.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



E. G. Wallace, Manager
Nuclear Licensing and
Regulatory Affairs

cc: Ms. S. C. Black, Deputy Director
Project Directorate II-4
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

INPO Record Center
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

NRC Resident Inspector
Watts Bar Nuclear Plant
P.O. 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

Mr. B. A. Wilson, Chief, Project Chief
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

October 9, 1990

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

Dear Mr. Kingsley:

SUBJECT: WATTS BAR UNIT 1 - PRESERVICE INSPECTION PROGRAM REVIEW (TAC 63627)

By letter dated April 30, 1990, Mr. E. G. Wallace of your staff submitted revised information for the Watts Bar Preservice Inspection (PSI) program. Due to our resource constraint, we are reviewing only the PSI for Unit 1. We found that as a result of this review, additional information is needed (see enclosed request), and we ask that you respond within 60 days of receipt of this letter. To expedite this review, please send a copy of your response directly to:

Mr. Boyd W. Brown
EG&G Idaho, Inc.
INEL Research Center
P.O. Box 1625
Idaho Falls, Idaho 83415-2209

The reporting and/or record keeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required 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:
As stated

cc: See next page

OFC	: PDII-4/LA	: PDII-4/PM	: PDII-4/DD	: PDII-4/D	:	:
NAME	: MKrebs <i>MK</i>	: PTam <i>PT</i>	: SBlack <i>SB</i>	: FHebdon <i>FH</i>	:	:
DATE	: 10/9/90	: 10/9/90	: 10/9/90	: 10/9/90	:	:

OFFICIAL RECORD COPY
Document Name: TAC 63627

m/A-4

Mr. Oliver D. Kingsley, Jr.

-2-

cc:

Mr. Marvin Runyon, Chairman
Tennessee Valley Authority
ET 12A 7A
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Mr. John H. Garrity, Site Vice President
Watts Bar Nuclear Plant
Tennessee Valley Authority
P. O. Box 800
Spring City, Tennessee 37381

Mr. Edward G. Wallace
Manager, Nuclear Licensing
and Regulatory Affairs
Tennessee Valley Authority
5N 157B Lookout Place
Chattanooga, Tennessee 37402-2801

Mr. R. J. Stevens, Site Licensing Manager
Watts Bar Nuclear Plant
Tennessee Valley Authority
P. O. Box 800
Spring City, Tennessee 37381

Mr. John B. Waters, Director
Tennessee Valley Authority
ET 12A 9A
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Mr. Richard F. Wilson
Vice President, New Projects
Tennessee Valley Authority
6N 38A Lookout Place
Chattanooga, Tennessee 37402-2801

Mr. W. F. Willis
Chief Operating Officer
ET 12B 16B
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Honorable Robert Aikman, County Judge
Rhea County Courthouse
Dayton, Tennessee 37321

General Counsel
Tennessee Valley Authority
400 West Summit Hill Drive
ET 11B 33H
Knoxville, Tennessee 37902

Honorable Johnny Powell, County Judge
Meigs County Courthouse, Route 2
Decatur, Tennessee 37322

Mr. Dwight Nunn
Vice President, Nuclear Engineering
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37902

Mr. Michael H. Mobley, Director
Division of Radiological Health
T.E.R.R.A. Building, 6th Floor
150 9th Avenue North
Nashville, Tennessee 37219-5404

Dr. Mark O. Medford
Vice President and Nuclear
Technical Director
Tennessee Valley Authority
6N 38A Lookout Place
Chattanooga, Tennessee 37402-2801

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W.
Atlanta, Georgia 30323

Senior Resident Inspector
Watts Bar Nuclear Plant
U.S. Nuclear Regulatory Commission
Route 2, Box 700
Spring City, Tennessee 37381

Tennessee Valley Authority
Rockville Office
11921 Rockville Pike
Suite 402
Rockville, Maryland 20852

TENNESSEE VALLEY AUTHORITY,
WATTS BAR NUCLEAR PLANT, UNIT 1
DOCKET NUMBER 50-390
MATERIALS AND CHEMICAL ENGINEERING BRANCH
DIVISION OF ENGINEERING TECHNOLOGY

Request for Additional Information - Preservice Inspection Program Plan

1. Scope/Status of Review

For a boiling or pressurized water cooled nuclear power facility whose construction permit was issued on or after January 1, 1971, but before July 1, 1974, 10 CFR 50.55a(g)(2) requires that components (including supports) that are classified as American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Class 1 and Class 2 shall be designed and provided with access to enable the performance of (i) inservice examination of such components (including supports) and (ii) tests for operational readiness of pumps and valves, and shall meet the preservice examination requirements set forth in editions of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda in effect six months prior to the date of issuance of the construction permit. The construction permit date for Watts Bar Nuclear Plant, Unit 1, is January 23, 1973. Therefore, the code of record in effect for Watts Bar Nuclear Plant, Unit 1, is the 1971 Edition, Winter 1971 Addenda of ASME Code Section XI.

The components (including supports) may meet requirements set forth in subsequent editions and addenda of ASME Code Section XI that are incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein. The Applicant has prepared the Preservice Inspection (PSI) Program to meet the requirements of the 1974 Edition, Summer 1975 Addenda of the ASME Code Section XI, with the following exceptions:

- A. Eddy current examination of heat exchanger tubing, which the Summer 1975 Addenda has no provisions for, meets the requirements of the Summer 1976 Addenda.
- B. The following examinations are in accordance with the 1977 Edition, Summer 1978 Addenda of Section XI:
 - (1) Class 2 pressure retaining bolting;
 - (2) Class 2 valve body weld examinations;
 - (3) Component support integrally welded attachment examinations for piping, pumps, valves and pressure vessels;
 - (4) Component support examinations for piping, pumps, and valves;
 - (5) Technique for ultrasonic examination of piping welds performed after October 20, 1981;

- (6) Standards for evaluating piping weld ultrasonic indications;
- (7) Examination of interior clad surfaces of vessels;
- (8) Reactor vessel interior and core support structure examinations; and
- (9) Class 1 pressure retaining piping welds examined after July 1, 1989.

As required by 10 CFR 50.55a(a)(3), if the Applicant determines that certain Code examination requirements are impractical and relief is requested, the Applicant shall submit information to the Nuclear Regulatory Commission (NRC) to support that determination.

The staff has reviewed the available information in the Watts Bar Nuclear Plant, Unit 1, PSI Program, through Revision 18, submitted January 24, 1986, and the requests for relief from the ASME Code Section XI requirements which the Applicant has determined to be impractical.

2. Additional Information/Clarification Required

Based on the above review, the staff has concluded that the following information and/or clarification is required in order to complete the review of the PSI Program and relief requests:

- A. The staff has copies of the PSI Program, through Revision 18, and Revisions 20 (submitted July 27, 1987) and 22 (submitted April 30, 1990) of the PSI Program. Please provide copies of Revisions 19 and 21, and/or confirm that the April 30, 1990 submittal of Revision 22 is a complete revision (stand alone document) with all previous changes incorporated.
- B. Please provide a listing of all systems that have been modified or required rework since Revision 16 of the PSI Program was issued. Are modifications to these systems within the scope of the PSI Program?
- C. Confirm that, for the systems that have been modified or reworked for any reason, the PSI examinations will be repeated and new baseline data obtained.
- D. In September 1989, an NRC Region II Inspector performed a routine inspection at Watts Bar, Unit 1 (Report Nos. 50-390/89-15 and 50-391/89-15). This NRC inspection included, in part, a review of the Unit 1 PSI plan, reviews of the active requests for relief from required PSI examinations, and random field visual verifications to confirm that the relief requests were justified. Review of request for relief ISI-4 identified a total of 64 welds listed, of which 7 welds were reported to have been removed with 57 welds still remaining in systems. Revision 22 of ISI-4 shows 62 welds for which

relief is still being requested. Confirm that relief is required for all welds listed in Revision 22 of ISI-4. Also, confirm that all requests for relief have been revised, if applicable, with regard to updating to later Code editions and addenda for PSI and to reflect current plant configuration and/or PSI examinations.

- E. Verify that there are no additional relief requests, other than those submitted in Revision 22 of the PSI Program. If additional relief requests are required, the Applicant should submit them for staff review.

The schedule for timely completion of this review requires that the Applicant provide, by the requested date, the above requested information and/or clarifications with regard to the Watts Bar Nuclear Plant, Unit 1, Preservice Inspection Program.

Principal Contributors

D. E. Smith and B. W. Brown