September 25, 1996

Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING THE WATTS BAR NUCLEAR PLANT, UNIT 1 FIRST 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN AND ASSOCIATED REQUESTS FOR RELIEF (TAC NO. M95440)

Dear Mr. Kingsley:

The NRC staff, with assistance from its contractor, Idaho National Engineering Laboratory, is reviewing and evaluating the first 10-year interval inservice inspection program plan and the associated requests for relief from the ASME B&PV Code, Section XI requirements for Watts Bar Nuclear Plant, Unit 1 that was submitted May 9, 1996. Additional information is required from Tennessee Valley Authority in order for the staff to complete its review.

The staff requests that a response be provided within 60 days of the date of this letter to meet the staff's inservice inspection program plan review schedule. In addition, to expedite the review process, please send a copy of the response to NRC's contractor, INEL, at the following address:

Michael T. Anderson
INEL Research Center
2151 North Boulevard
PO Box 1625
Idaho Falls, Idaho 83415-2209

Sincerely,
Original signed by

Robert E. Martin, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-390 and 50-391

Enclosure: Request for Additional Information

cc w/enclosure: See next page

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Senior Resident Inspector
Watts Bar Nuclear Plant
U.S. Nuclear Regulatory Commission
1260 Nuclear Plant Road
Spring City, TN 37381

The Honorable Billy R. Patton
County Executive
Rhea County Courthouse
Dayton, TN 37321

The Honorable Garland Lanksford
County Executive
Meigs County Courthouse
Decatur, TN 37322

Mr. Michael H. Mobley, Director
Division of Radiological Health
3rd Floor, L and C Annex
401 Church Street
Nashville, TN 37243-1532

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

DOCKET NUMBER 50-390

CIVIL ENGINEERING AND GEOSCIENCES BRANCH

DIVISION OF ENGINEERING

Request for Additional Information - First 10-Year Interval Inservice Inspection Program Plan

1. Scope/Status of Review

Throughout the service life of a water-cooled nuclear power facility, 10 CFR 50.55a(g)(4) requires that components (including supports) that are classified as American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Class 1, Class 2, and Class 3 meet the requirements, except design and access provisions and preservice examination requirements, set forth in the ASME Code Section XI, *Rules for Inservice Inspection of Nuclear Power Plant Components*, to the extent practical within the limitations of design, geometry, and materials of construction of the components. This section of the regulations also requires that inservice examinations of components and system pressure tests conducted during the successive 120-month inspection interval comply with the requirements in the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the start of a successive 120-month interval, subject to the limitations and modifications listed therein. The components (including supports) may meet requirements set forth in subsequent editions and addenda of the Code that are incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein. The licensee, Tennessee Valley Authority, has prepared the *Watts Bar Nuclear Plant, First 10-Year Interval Inservice Inspection (ISI) Program Plan*, Revision 0, to meet the requirements of the 1989 Edition of Section XI of the ASME Code.

As required by 10 CFR 50.55a(g)(5), if the licensee determines that certain Code examination requirements are impractical and requests relief, the licensee shall submit information to the Nuclear Regulatory Commission (NRC) to support that determination.

ENCLOSURE

As required by 10 CFR 50.55a(g)(5), if the licensee determines that certain Code examination requirements are impractical and requests relief, the licensee 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, First 10-Year Interval Inservice Inspection (ISI) Program Plan*, Revision 0, submitted by letter dated February 14, 1996, and the requests for relief from the ASME Code Section XI requirements that the licensee has determined to be impractical.

2. Additional Information Required

Based on the above review, the staff has concluded that additional information and/or clarification is required to complete the review of the inservice inspection (ISI) program plan. The licensee is requested to:

A. Provide the start date for the first 10-year interval.

B. Provide boundary diagrams for all ASME Code Class 1, Class 2, and Class 3 systems. These diagrams should define the ISI boundaries for all systems in the *Watts Bar Nuclear Plant, First 10-Year Interval Inservice Inspection (ISI) Program Plan.*

C. Provide isometric and component drawings showing all of the Code Class 1 and Class 2 piping welds, components, and supports.

D. Provide an itemized list of the components subject to examination during the first 10-year interval. Also include a list of Code Class 1, Class 2, and Class 3 piping and components that have been exempted from examination and the applicable exemption criteria. The requested listing, along with the isometric/component drawings, will permit the staff to review the extent to which ISI examinations meet the applicable Code requirements.

E. Address the degree of compliance with augmented examinations that have been established by the NRC when added assurance of structural reliability is deemed necessary. Examples of documents that address augmented examinations are:

(1) Branch Technical Position MEB 3-1, "High Energy Fluid Systems, Protection Against Postulated Piping Failures in Fluid Systems Outside Containment"; and

(2) Regulatory Guide 1.150, *Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations.*

Discuss these and any other augmented examinations that may have been incorporated in the *Watts Bar Nuclear Plant, First 10-Year Interval Inservice Inspection (ISI) Program Plan*, Revision 0.

F. Discuss any plans or schedules for the examination of a sample of welds in thin wall pipe lines excluded from examination to assure the continued integrity of this piping. Paragraph 10 CFR 50.55a(b)(2)(iv) requires that certain ASME Code Class 2 piping welds in the Residual Heat Removal (RHR), Emergency Core Cooling (ECC), and Containment Heat Removal (CHR) systems be examined. Portions of these systems are critical to the safe shutdown of the plant and should not be completely excluded from inservice volumetric examination based on piping wall thickness. Other utilities/licensees have deemed it technically prudent to perform augmented volumetric examinations on welds in those portions of thin wall pipe lines excluded from examination. (A 7-1/2% sample is consistent with the extent of examination required for Class 2 piping.)

G. Provide a list of the ultrasonic calibration standards being used during the first 10-year interval ISI at Watts Bar Nuclear Plant. The list should include the calibration standard identifications, material specifications, and sizes, and identification of the piping and/or components to which each calibration standard applies.

H. Verify that the NDE qualification program will comply with Appendix VII of Section XI. (On Page 9 of 28 of Document SSP-6.10, Item 8, the licensee stated that NDE personnel certification will be in accordance with IWA-2300.)

I. For Request for Relief ISPT-06, verify that the request for relief is applicable to Class 1 systems only. (For some plants, there are Class 2 systems borated for the purpose of controlling reactivity that may require insulation removal to perform the VT-2 visual examination.)

J. Explain why Regenerative or Letdown Heat Exchangers are not included in the table of examinations. Is this an oversight or are they considered exempt from examination?

K. Provide the staff with information supporting the determination that the Code Cases not approved for use by Regulatory Guide (RG) 1.147 that have been incorporated into the ISI Program (Examples: Code Case N-509, N-524) will provide protection, equivalent to that of the Code, or will provide an acceptable level of quality and safety. [These Code Cases contain alternative rules to Code-required examinations or requirements. Although these Code Cases may be incorporated into a future revision of RG 1.147, they may be inadequate as written and could require additional provisions if deemed necessary by the staff. In accordance with the Regulations, Code Cases not approved in RG 1.147 may only be used when authorized by the Office of Nuclear Reactor Regulation (NRR), upon request by the licensee, pursuant to 10 CFR 50.55a(a)(3).

Consequently, a request to use these Code Cases must be formally submitted to NRR and authorized for use before they can be used in the ISI program.]

L. For Request for Relief 1-ISI-1, describe the impracticality or burden associated with the Code requirement. In this Relief Request, the licensee has requested relief from examination of integral attachments in Class 3, PWR Auxiliary Feedwater System piping. How many integral attachments would require examination at the Watts Bar Nuclear Plant to comply with the Code requirement? Considering the reduction in total integral attachment welds requiring examination when implementing the Code alternative contained in Code Case N-509, what is the impracticality or burden associated with the Code requirement?

M. Verify that there are no relief requests in addition to those submitted. If additional relief requests are required, the licensee should submit them for staff review.

The schedule for timely completion of this review requires that the licensee provide, by the requested date, the above requested information and/or clarification with regard to the *Watts Bar Nuclear Plant, First 10-Year Interval Inservice Inspection (ISI) Program Plan*.