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

AUG 0 9 1995

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)

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - 10 CFR 50.55a(a)(3) PROPOSED ALTERNATIVE TO THE TESTING REQUIREMENTS OF SECTION XI, THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) BOILER AND PRESSURE VESSEL CODE

The purpose of this letter is to request relief from certain ASME Section XI preservice inspection program (PSI) examination requirements for Watts Bar Unit 1 Nuclear Power Plant. Enclosure 1 includes relief requests designated as ISI-16 and ISI-17.

If you should have any questions, contact P. L. Pace at (615) 365-1824.

Sincerely,

R. R. Baron
Nuclear Assurance
and Licensing Manager (Acting)

Enclosure
cc: See page 2

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cc (Enclosure):

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ENCLOSURE 1
REQUEST FOR RELIEF ISI-16

Components:

Seven Branch Pipe Connection Welds
3 Chemical and Volume Control System
4 Raw Cooling Water System

Code Class:

ASME Code Class 1 (Equivalent)

Section XI Edition:

1977 Edition, Summer 1978 addenda

Examination Category and Item Number:

B-J, B9.31

Code Requirement:

Examination Category B-J, Item Number B9.31 of Table IWB-2500-1 of the 1977 Edition, Summer 1978 Addenda of ASME Section XI requires a volumetric and surface examination of essentially 100 percent of the weld length of Class 1 branch pipe connection welds with a nominal pipe size (NPS) greater than 2 inches. Code Case N-460 permits a reduction in examination coverage due to interference by another component or part geometry provided that the reduction in coverage for a weld is less than 10 percent.

Code Requirement From Which Relief is Requested:

Relief is requested from the requirements of Examination Category B-J, Item Number B9.31 of Table IWB-2500-1 and Code Case N-460 for volumetric examination (ultrasonic) of greater than 90 percent of the weld length of Class 1 branch pipe connection welds.

Basis for Relief:

It is impractical to ultrasonically examine the branch pipe connection welds and achieve greater than 90 percent examination coverage due to the piping configuration for each of the seven welds. Ultrasonic examination coverage achieved and piping configuration are identified in the attached table. A liquid penetrant (surface) examination was also performed on each of the welds. Later ASME Section XI code editions and addenda (beginning with the 1980 Edition, Winter 1980 Addenda) required only surface examinations for branch pipe connection welds on piping less than four inches in diameter.

Alternate Examinations:

Each of the welds received an ultrasonic examination of all areas which were not restricted by the piping configuration. Each weld also received a liquid penetrant examination. No alternative examinations will be performed because all accessible portions of the branch pipe connection welds were examined.

Justification for the Granting of Relief:

The configuration of each of the branch pipe connection welds limits the ultrasonic examination coverage which can be achieved. Each weld was ultrasonically examined to the extent practical. In addition, each weld was surface examined. When the first inspection interval begins at commercial operation for Watts Bar Nuclear Plant Unit 1, a new inservice inspection program must be prepared in accordance with 10 CFR 50.55a(b)(2). The inservice inspection program for the first inspection interval is currently being prepared to the 1989 Edition of ASME Section XI, which requires only a surface examination for branch pipe connection welds on piping less than four inches in diameter. Therefore, the branch pipe connection welds have undergone a preservice examination utilizing an examination method (surface) expected to satisfy future inservice examination requirements. An acceptable level of quality and safety has been achieved and public health and safety will not be endangered based on the preservice ultrasonic and liquid penetrant examinations performed.

Implementation Schedule:

The branch pipe connection welds have been preservice examined as stated above.

TABLE ISI-16

Weld Number	Code Category	Drawing Number	Physical Configuration	Scan Limitation	Approximate % Code Examined	Remarks
CVCW-01 3" Diameter	B-J	ISI-0005-C-01	3" Br Pipe Connection	No Scan 4, 5, 6	25%	Scan limitations due to branch connection configuration
CVCW-02 3" Diameter	B-J	ISI-0005-C-01	3" Br Pipe Connection	No Scan 4, 5, 6	25%	Scan limitations due to branch connection configuration
CVCW-03 3" Diameter	B-J	ISI-0005-C-01	3" Br Pipe connection	No Scan 3, 5, 6	25%	Scan limitations due to branch connection configuration
RCW-03 3" Diameter	B-J	CHM-2547-B-01	3" Br Pipe connection	No Scan 3, 5, 6	25%	Scan limitations due to branch connection configuration
RCW-04 3" Diameter	B-J	CHM-2547-B-01	3" Br Pipe connection	No Scan 4, 5, 6	25%	Scan limitations due to branch connection configuration
RCW-05 3" Diameter	B-J	CHM-2547-B-01	3" Br Pipe connection	No Scan 4, 5, 6	25%	Scan limitations due to branch connection configuration
RCW-06 3" Diameter	B-J	CHM-2547-B-01	3" Br Pipe connection	No Scan 4, 5, 6,	25%	Scan limitations due to branch connection configuration

REQUEST FOR RELIEF ISI-17

Components:

Components in three Component Cooling System 6-inch lines bounded as follows: a) from valve 1-FCV-70-143 (outboard isolation at penetration X-53) through the Excess Letdown Heat Exchanger to valve 1-FCV-70-85 (outboard isolation at penetration X-35); b) from valve 1-FCV-70-140 (outboard isolation at penetration X-52) to valve 1-FCV-70-100 (inboard isolation at penetration X-52); and c) from valve 1-FCV-70-89 (inboard isolation at penetration X-29) to valve 1-FCV-70-92 (outboard isolation at penetration X-29). Reference TVA drawing 1-47W859-2.

Code Class:

ASME Code Class 2 (equivalent)

Section XI Edition:

1974 Edition, Summer 1975 Addenda

Code Category and Item Number:

Various

Code Requirement:

Paragraph IWC-1220 of the 1974 Edition, Summer 1975 Addenda of ASME Section XI provides exemption criteria for Class 2 components. Paragraph IWC-2100(a) states that "components in systems where both the design pressure and temperature are equal to or less than 275 psig and 200 degrees F, respectively," may be exempt from the examination requirements of IWC-2520. In addition, paragraph IWC-2100(a) requires "all detailed examinations listed in tables IWC-2520 and IWC-2600 shall be performed completely, once, as a preservice examination requirement prior to initial plant startup." Some examination categories have been previously upgraded to the 1977 Edition, Summer 1978 Addenda and are specifically identified in the Watts Bar Unit 1 Preservice Program, TI-50A. In these cases, reference to Tables IWC-2520 and IWC-2600 have become Table IWC-2500-1.

Code Requirement from Which Relief is Requested:

Relief is requested from performing the preservice examinations required by paragraphs IWC-2100(a) and IWC-2520.

Basis for Relief:

The basis for performing preservice examinations is to establish baseline data for use with future inservice examinations. The 1974 Edition, Summer 1975 Addenda of ASME Section XI provides exemption criteria for components based on design pressure and temperature. This exemption was revised in the 1989 edition of ASME Section XI based on system operating pressure and temperature. The WBN inservice inspection program for the first inspection interval is currently being prepared to the 1989 Edition of ASME Section XI. Paragraph IWC-1222(c) of the 1989 Edition states "Vessels, piping, pumps,

valves, other components, and component connections of any size in systems or portions of systems that operate (when the system function is required) at a pressure equal to or less than 275 psig and at a temperature equal to or less than the 200 degrees F," may be exempt. The operating pressure and temperature for the subject system is less than the values stated in IWC-1222(c). Therefore, the Class 2 portions of this system described above will be exempt from inservice examinations.

The Class 2 portions of this system were subject to ASME Section III fabrication examinations such as radiography for circumferential piping welds. Component supports were subject to fabrication quality control inspections and examinations. In addition, the system was subject to ASME Section III system hydrostatic pressure tests.

Alternate Examinations:

The future inservice inspection program will exempt the Class 2 portions of this system from examination; therefore, no alternate examinations are proposed.

Justification for the Granting of Relief

Preservice examinations are performed to establish baseline data to be utilized for comparison with future inservice examinations. No significant benefit would be obtained in performing preservice examinations because the ASME Section XI code edition to be used for the first inspection interval exempts these Class 2 portions of the Component Cooling System. Performance of the preservice examinations would result in an unnecessary cost without an increased level in quality and safety. The inservice ASME Section XI programs will provide requirements for the Class 2 portions of this system via the system pressure test program, pump and valve test program, and repair and replacement program. These program activities will ensure the structural integrity and operational readiness of the components throughout the system's service life. An acceptable level of quality and safety has been achieved and public health and safety will not be endangered.