



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF THE
FIRST 10 YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN
REQUEST FOR RELIEF ISPT-07
FOR
TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
DOCKET NUMBER 50-390

1.0 INTRODUCTION

The Technical Specifications for the Watts Bar Nuclear Plant (WBN) state that the inservice inspection (ISI) of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.55a(g)(6)(i). The 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service 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. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the WBN first 10-year ISI interval is the 1989 Edition.

Pursuant to 10 CFR 50.55a(g)(5), if the Tennessee Valley Authority (licensee) determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be

authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

In a letter dated May 9, 1996, the licensee submitted to the NRC its first 10-year ISI interval program plan and associated requests for relief for the WBN. Request for Relief ISPT-07 is part of a present review by the NRC staff of the licensee's first 10-year interval ISI program plan and associated requests for relief for the Watts Bar Nuclear Plant. The licensee requested that the review of Request for Relief ISPT-07 be expedited, because it is required for the 1997 fall outage. Additional information was provided by the licensee in its letter dated March 24, 1997.

2.0 EVALUATION

The staff, with technical assistance from its contractor, the Idaho National Engineering and Environmental Laboratory (INEEL), has evaluated the information provided by the licensee in support of its First 10-Year ISI Interval Program Plan Request for Relief ISPT-07 for the WBN. Based on the information submitted, the staff adopts the contractor's conclusions and recommendations presented in the Technical Letter Report (TLR) attached.

For Request for Relief ISPT-07 the Code requires that VT-2 visual examination personnel be qualified to comparable levels of competency as defined in American National Standards Institute N45.2.6. The Code also requires that the examination personnel be qualified for near and far distance vision acuity. The licensee proposes to implement the alternatives contained in Code Case N-546 which states that VT-2 visual examiners will meet the following requirements:

- "At least 40 hours plant walkdown experience, such as that gained by licensed and nonlicensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel.
- "At least 4 hours of training on Section XI requirements and plant specific procedures for VT-2 visual examination.
- "Vision test requirements of IWA-2321, 1995 Edition."

The qualification requirements in Code Case N-546 are not significantly different from the qualifications required for VT-2 visual examiner certification. Licensed and nonlicensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel typically have a sound working knowledge of plant components and piping layouts. This knowledge makes them acceptable candidates for performing VT-2 visual examinations.

In addition to the alternatives contained in Code Case N-546, the licensee has proposed to develop procedural guidelines for consistent, quality VT-2 visual examinations, verify and maintain records of the qualification of persons selected to perform VT-2 visual examinations, and perform independent reviews and evaluations of leakage by person(s) other than those that performed the VT-2 visual examination. Based on a review of Code Case N-546 and the additional measures the licensee has proposed, the staff concludes that the proposed alternative to the Code requirements for VT-2 visual examination personnel will provide an acceptable level of quality and safety.

3. CONCLUSIONS

Based on a review of Code Case N-546 and the additional measures the licensee has proposed, the staff concludes that the proposed alternative to the Code requirements for VT-2 visual examination personnel provides an acceptable level of quality and safety. Therefore, the licensee's request to implement alternatives contained in Code Case N-546 in combination with the additional measures noted above is authorized pursuant to 10 CFR 50.55a(a)(3)(i). Use of Code Case N-546 is authorized for the present interval or until such time as the Code Case is published in a future revision of Regulatory Guide 1.147. From that time, if the licensee intends to continue the use of this Code Case, the licensee is to follow all provisions in Code Case N-546 with limitations issued in Regulatory Guide 1.147, if any.

Attachment: INEEL TLR

Principle Contributor: T. McLellan

Date:

TECHNICAL LETTER REPORT
FIRST 10-YEAR INSERVICE INSPECTION INTERVAL
RELIEF REQUEST ISPT-07
FOR
TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
DOCKET NUMBER 50-390

1.0 INTRODUCTION

By letter dated May 9, 1996, Tennessee Valley Authority submitted the inservice inspection (ISI) program plan for the first ten-year interval at Watts Bar Nuclear Plant. Included in the submittal was Request for Relief ISPT-07. In response to a Nuclear Regulatory Commission request for additional information, the licensee submitted a revision to the request in a letter dated March 24, 1997. Per the licensee's request, the evaluation of ISPT-07 is being expedited by this Technical Letter Report. The program plan and other associated requests for relief will be evaluated by a separate report in the future. The Idaho National Engineering and Environmental Laboratory (INEEL) staff has evaluated the subject request in the following section.

2.0 EVALUATION

The applicable edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, for the Watts Bar Nuclear Plant first ten-year ISI interval is the 1989 Edition. The information provided by the licensee in support of the request has been evaluated and the basis for disposition is documented below.

Request for Relief ISPT - 07 (Revised per letter dated 3/24/97), Request to Implement Alternatives to Code Requirements Contained in Code Case N-546, Alternative Requirements for Qualification of VT-2 Visual Examination Personnel

Code Requirement: Section XI, IWA-2300, requires that personnel performing VT-2 visual examinations be qualified in accordance with comparable levels of

competency as defined by ANSI N45.2.6. The examination personnel shall have natural or corrected near distance vision acuity, in at least one eye, equivalent to a Snellen fraction of 20/20. For far vision, personnel shall have natural or corrected far distance visual acuity of 20/30 or equivalent.

Licensee's Proposed Alternative: Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee proposed an alternative to the qualification requirements for VT-2 visual examiners. The licensee stated:

"The alternative qualification requirements of ASME Code Case N-546 shall be used. Additionally, procedural guidelines will be developed to obtain consistent, quality VT-2 visual examinations; records will be maintained to document and verify the qualification of persons selected to perform VT-2 visual examinations; and an independent review and evaluation of leakage by a person(s) other than those that performed the VT-2 will be implemented."

Licensee's Basis for the Proposed Alternative (as stated):

"The VT-2 examination performed in conjunction with a Section XI pressure test consists of a visual inspection of components and surrounding surfaces for leakage and evidence of leakage from the pressure retaining components per IWA-2212. The methods to be used in the performance of the inspection are found in IWA-5240. To adequately perform these visual inspections, personnel must have the following traits:

- A. Knowledge and understanding of the methods of inspection to be used for Section XI visual inspections as defined in IWA-5240.
- B. Knowledge of plant systems and familiarization with system walkdown procedures.
- C. Good visual perception

"Equipped with these traits, personnel will be fully able to perform the intent of the VT-2 examinations during system pressure test conditions. These traits are easily attained by plant system engineers and operation personnel who perform daily and weekly walkdowns of plant systems as part of their normal responsibilities. The additional requirements for the qualification and certification of personnel to SNT-TC-1A are not necessary to perform these VT-2 examinations.

"It is WBN's position that the additional cost of qualification and certification of personnel to SNT-TC-1A is a hardship to the plant which does not provide a

commensurate increase in quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), it is recommended that relief be granted."

Evaluation: The Code requires that VT-2 visual examination personnel be qualified to comparable levels of competency as defined in ANSI N45.2.6. The Code also requires that the examination personnel be qualified for near and far distance vision acuity. The licensee proposes to implement the alternatives contained in Code Case N-546 which states that VT-2 visual examiners will meet the following requirements:

- "At least 40 hours plant walkdown experience, such as that gained by licensed and nonlicensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel.
- "At least four hours of training on Section XI requirements and plant specific procedures for VT-2 visual examination.
- "Vision test requirements of IWA-2321, 1995 Edition."

The qualification requirements in Code Case N-546 are not significantly different from the qualifications required for VT-2 visual examiner certification. Licensed and nonlicensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel typically have a sound working knowledge of plant components and piping layouts. This knowledge makes them acceptable candidates for performing VT-2 visual examinations.

In addition to the alternatives contained in Code Case N-546, the licensee has proposed to develop procedural guidelines for consistent, quality VT-2 visual examinations, verify and maintain records of the qualification of persons selected to perform VT-2 visual examinations, and perform independent reviews and evaluations of leakage by person(s) other than those that performed the VT-2 visual examination. Based on a review of Code Case N-546 and the additional measures the licensee has proposed, the INEEL staff believes that the proposed alternative to

the Code requirements for VT-2 visual examination personnel will provide an acceptable level of quality and safety. Therefore, it is recommended that the licensee's request to implement alternatives contained in Code Case N-546 in combination with the additional measures noted above be authorized pursuant to 10 CFR 50.55a(a)(3)(i). Use of Code Case N-546 should be authorized for the present interval or until such time as the Code Case is published in a future revision of Regulatory Guide 1.147. From that time, if the licensee intends to continue the use of this Code Case, the licensee is to follow all provisions in Code Case N-546 with limitations issued in Regulatory Guide 1.147, if any.