



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF THE SECOND 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN

REQUEST TO USE CODE CASE N-533

FOR

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT 2

DOCKET NO. 50-368

1.0 INTRODUCTION

The Technical Specifications (TSs) for Arkansas Nuclear One, Unit 2 (ANO-2) state that the inservice inspection 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 Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 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 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. 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 ANO-2 second 10-year inservice inspection (ISI) interval is the 1986 Edition. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval.

ENCLOSURE 1

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Pursuant to 10 CFR 50.55a(g)(5), if the 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 December 28, 1995, Entergy Operations, Inc, submitted to the NRC its second 10-year interval inservice inspection program plan request to implement Code Case N-533 "Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections, Section XI, Division 1" as an alternative to Code requirements for Arkansas Nuclear One, Unit 2.

2.0 EVALUATION AND CONCLUSIONS

The staff, with technical assistance from its contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the information provided by the licensee in support of its second 10-year interval inservice inspection program plan, request to implement Code Case N-533 "Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections, Section XI, Division 1" as an alternative to the Code requirements for ANO-2.

Based on the information submitted, the staff adopts the contractor's conclusions and recommendations presented in the Technical Letter Report. The staff has concluded that by implementing Code Case N-533 the licensee will be able to locate and evaluate leakage, or evidence of leakage, in a manner comparable to the requirements of the Code, and thus the licensee's proposed alternative provides an acceptable level of quality and safety. Therefore, the licensee's proposed alternative, to implement Code Case N-533, is authorized pursuant to 10 CFR 50.55a(a)(3)(i), provided a 4-hour hold time at test conditions is observed prior to the VT-2 visual examination. The use of this Code Case is authorized for ANO-2, for the second 10-year ISI interval or until the Code Case is approved for general use by reference in Regulatory Guide 1.147. After that time, the licensee may continue to use Code Case N-533 with the limitations, if any, listed in Regulatory Guide 1.147.

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TECHNICAL LETTER REPORT
ON THE SECOND 10-YEAR INSERVICE INSPECTION INTERVAL
REQUEST FOR AUTHORIZATION TO USE CODE CASE N-533
FOR
ENTERGY OPERATIONS, INC.
ARKANSAS NUCLEAR ONE, UNIT 2
DOCKET NO. 80-368

1.0 INTRODUCTION

By letter dated December 28, 1995, Entergy Operations Inc., submitted a request for authorization to use Code Case N-533. The Idaho National Engineering Laboratory (INEL) staff has evaluated this request in the following section.

2.0 EVALUATION

The Code of record for the Arkansas Nuclear One, Unit 2 second 10-year inservice inspection interval, which began March 27, 1990, is the 1986 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI. The information provided by the licensee in support of the request for relief from Code requirements has been evaluated and the basis for disposition is documented below.

Request for Authorization to Use Code Case N-533, Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections, Section XI, Division 1

Code Requirement: IWA-5242(a) states that for systems bolated for the purpose of controlling reactivity, insulation shall be removed from pressure-retaining bolted connections for a direct VT-2 visual examination.

Code cases are periodically published by ASME to either clarify the intent of the Code rules or to provide alternative rules to existing Code requirements. Use of these nonmandatory Code cases for inservice inspection is subject to general acceptance by the NRC staff and

incorporation into Regulatory Guide 1.147. Pursuant to 10 CFR 50.55a, other Code cases may be used provided specific authorization is granted.

Licensee's Code Relief Request: The licensee has requested to use Code Case N-533, *Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections, Section XI, Division 1.*

Licensee's Basis for Requesting Relief (as stated):

"Code Case N-533, 'Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections, Section XI Division 1,' provides an alternative to the code requirements of IWA-5242(a). This code case maintains the basis of IWA-5242(a), i.e., a leakage test of bolted connections in class 1 systems each refueling outage. The code case substitutes a VT-2 visual examination of a bolted connection without the connection pressurized and with the insulation removed, and a second VT-2 examination of the bolted connection at pressure with the insulation intact in lieu of one VT-2 examination of the bolted connection to be conducted at pressure with the insulation removed. Based upon the preceding, Entergy Operations has concluded that the proposed alternative will provide an acceptable level of quality and safety as required by 10CFR50.55a(a)(3)(i).

Use of Code Case N-533 will reduce critical path time, occupational dose and heat stress to workers during each future refueling outage."

Licensee's Proposed Alternative Examination (as stated):

"The purpose of this submittal is to request approval, pursuant to 10CFR50.55a(a)(3), for the use of the American Society of Mechanical Engineers (ASME) Code Case N-533 as an alternative to the ASME Section XI Code requirements contained in the 1986 edition, no addenda, in effect at Arkansas Nuclear One, Unit 2 (ANO-2)."

Evaluation: Paragraph IWA-5242(a) requires the removal of all insulation from pressure-retaining bolted connections in systems borted for the purpose of controlling reactivity when performing VT-2 visual examinations during system pressure tests. The licensee has proposed to use Code Case N-533, which requires 1) performing the Code-required pressure test without removing the insulation, 2) examination of Class 1 bolted connections, each refueling outage, at atmospheric or static

pressure with insulation removed, and 3) requires that any evidence of leakage be evaluated in accordance with IWA-5250.

Paragraph IWA-5242(a) provides requirements to ensure that leakage or evidence of leakage at bolted connections is found. Performing a VT-2 visual examination during system pressure tests as required by Code Case N-533, with the insulation in place will likely result in the detection of any significant leakage, provided a four-hour hold time is observed prior to the VT-2 visual examination. Furthermore, performing a VT-2 visual examination after removal of the insulation at atmospheric or static pressure during outages, as specified by Code Case N-533, will allow for examination for evidence of borted water leakage. The Code Case states that any evidence of leakage must be evaluated in accordance with IWA-5250 of Section XI.

It is the opinion of the INEL staff that by following Code Case N-533 the licensee will locate and evaluate leakage, or evidence of leakage, in a manner comparable to the requirements of the Code, and thus provides an acceptable level of quality and safety. Therefore, it is recommended that the licensee's proposed alternative be authorized pursuant to 10 CFR 50.55a(a)(3)(i), provided a 4-hour hold time at test conditions is observed prior to the VT-2 visual examination.

3.0 CONCLUSION

The INEL staff has reviewed the licensee's submittal and concluded that by using Code Case N-533 the licensee will locate and evaluate leakage, or evidence of leakage, in a manner comparable to the requirements of the Code, and thus the licensee's proposed alternative provides an acceptable level of quality and safety. Therefore, it is recommended that the licensee's proposed alternative, to implement Code Case N-533, be authorized pursuant to 10 CFR 50.55a(a)(3)(i), provided a 4-hour hold time at test conditions is observed prior to the VT-2 visual examination. The use of this Code Case should be authorized for Arkansas Nuclear One,

Unit 2, until the Code Case is approved for general use by reference in Regulatory Guide 1.147. After that time, the licensee may continue to use Code Case N-533 with the limitations, if any, listed in Regulatory Guide 1.147.