

From: Kalyanam, Kaly
Sent: Tuesday, December 22, 2009 11:06 AM
To: CLARK, ROBERT W
Cc: BICE, DAVID B
Subject: RAI REGARDING ANO-1, THIRD 10-YEAR ISI INTERVAL REQUESTS FOR RELIEF ANO1-ISI-015 thru -020

Bob/Dave,

By letter dated May 29, 2009, Entergy Operations, Inc. (the licensee), submitted its second 10-year inservice inspection interval Requests for Relief: ANO1-ISI-015, ANO1-ISI-016, ANO1-ISI-017, ANO1-ISI-018, ANO1-ISI-019, and ANO1-ISI-020 from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, pertaining to volumetric, surface, and visual examinations at Arkansas Nuclear One, Unit 1 (ANO-1).

The staff, with technical assistance from an external contractor, has reviewed and evaluated the information provided by Entergy, in its letter dated May 29, 2009, supplemented by letter dated October 28, 2009. Based on this review, it was determined that additional information is required to complete the staff's evaluation for these relief requests. In order for the staff to meet the established due date, the licensee needs to respond to the request for additional information by **February 12, 2010**.

Thanks

Kaly (N) Kalyanam
PM, ANO-1 and 2 and Waterford 3

REQUEST FOR ADDITIONAL INFORMATION
ON THE THIRD TEN YEAR 10-YEAR INSERVICE INSPECTION INTERVAL
REQUESTS FOR RELIEF ANO1-ISI-015, -016, -017
-018, -019 AND -020
FOR ENTERGY OPERATIONS, INC.
ARKANSAS NUCLEAR ONE, UNIT 1
DOCKET NUMBER: 50-313

1.0 SCOPE

By letter dated May 29, 2009 (Agencywide Documents Access & Management System (ADAMS) ML 091520610), supplemented by letter dated October 28, 2009 (ADAMS ML093070060), the licensee, Entergy Operations, Inc., submitted Requests for Relief (RR) ANO1-ISI-015, ANO1-ISI-016, ANO1-ISI-017, ANO1-ISI-018, ANO1-ISI-019, and ANO1-ISI-020, from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, for Arkansas Nuclear One, Unit 1 (ANO-1).

In accordance with title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(5)(iii), the licensee has submitted the subject requests for relief for limited examinations in multiple ASME Code Examination Categories. The ASME Code requires that 100% of the examination volumes, or surface areas, described in Tables IWB-2500 and IWF-2500 be performed during each interval. The licensee stated that 100% of the ASME Code-required volumes, or surface areas, are impractical to obtain at ANO-1.

10 CFR 50.55a(g)(5)(iii) states that when licensees determine that conformance with ASME Code requirements is impractical at their facility, they shall submit information to support this determination. The NRC will evaluate such requests based on impracticality, and may impose alternatives, giving due consideration to public safety and the burden imposed on the licensee.

Pacific Northwest National Laboratory (PNNL) has reviewed the information submitted by the licensee, and based on this review, determined the following information is required to complete the evaluation.

2.0 REQUEST FOR ADDITIONAL INFORMATION

2.1 General Information Required on All Requests for Relief

- 2.1.1 Based on the licensee's submittals, it is unclear which edition and addenda of ASME Code, Section XI, is applicable to the specific components listed in the individual relief requests. For example, in ANO1-ISI-015, the licensee lists the 1992 Edition and the 1995 Edition through the 1996 Addenda as having applicable inservice (ISI) requirements for the subject components, and in ANO1-ISI-016, the licensee lists the 1992 Edition and the 1980 Edition through the 1981 Addenda. The licensee states that the 1995 Edition through the 1996 Addenda of ASME Code was mandated for implementation of the ASME Code, Section XI, Appendix VIII examinations during the interval, however, this does not clear up the multiple ASME Code applicability issues.

Please confirm the ASME Code of record for the third interval inservice inspection program at ANO-1, how the licensee arrived at this edition/addenda of the ASME Code, and the specific requirements for each of the subject components listed in each request for relief. If the 1992 Edition was the primary ASME Code of record invoked for the third 10-year interval, confirm that no Addenda were included.

2.1.2 Provide the start and end dates for the ANO-1 third 10-year inservice inspection interval.

2.2 Request for Relief ANO1-ISI-016, Examination Category B-D, Item B3.110, Full Penetration Welded Nozzles in Vessels

2.2.1 It is unclear from the licensee's submittals which wave mode corresponds to each insonification angle. Clarify the wave modality and the corresponding insonification angles used for all ultrasonic examinations performed on the pressurizer nozzle-to-head welds.

2.2.2 Provide the inspection dates for all welds listed in this request for relief for the ANO-1 third 10-year ISI.

2.3 Request for Relief ANO1-ISI-018, Examination Category B-J, Items B9.11, B9.21 and B9.31, Pressure Retaining Welds in Piping

2.3.1 The 1992 Edition of the ASME Code, Section XI requires a surface examination for Examination Category B-J, Item B9.21, and both a surface and volumetric examination for Items B9.11 and B9.31 for the subject Class 1 piping welds. However, neither the original submittal nor the response to the request for additional information state that the surface examinations were required or performed for welds listed in Table 2.3.1. Please confirm whether the required surface examinations were performed for the subject welds, whether these surface examinations were full ASME Code examinations (>90% coverage), and describe any indications that were detected.

Table 2.3.1 - Examination Category B-J			
Code Item	Weld ID	Weld Type	Coverage Obtained
B9.11	09-001	"D" RCP Pump-to-Pipe Weld	50.0%
B9.21	18-010	Pressurizer Spray Valve-to-Pipe Weld	50.0%
B9.21	23-055	High Pressure Injection to B2 loop Elbow-to-Valve Weld	41.0%
B9.31	09-006	Pipe-to-HPI Nozzle Weld	50.0%

2.3.2 State the material of construction of the weld and base metal (e.g., wrought stainless steel) for each component listed in Table 2.3.1.

2.3.3 In the licensee's original submittal, it states, "ASME Section XI, Table IWB-2500-1, Examination Category B-J, 'Pressure Retaining Welds in Piping', Items B9.11, B9.21, and B9.32, all require 100% volumetric examination of the Class 1 pipe welds identified

through the risk-informed process.”

Stating that the pipe welds were identified through the risk-informed process leads the reviewer to believe that these welds fall under examination category R-A, Risk Informed Piping Examinations. Please confirm what the appropriate examination category, either B-J or R-A, was used to evaluate these Class 1 piping welds.

2.4 Request for Relief ANO1-ISI-019, Examination Category B-K-1, Item B10.20, Integral Attachments for Piping, Pumps, and Valves

- 2.4.1 The 1992 Edition of the ASME Code, Section XI, Examination Category B-K-1, Item Number B10.20 requires a surface examination of integrally welded pump attachments. The description of the integrally welded attachment for this relief request is referring to a piping attachment which would correspond to Item B10.10 of Category B-K-1. Please verify the correct item number and examination category applied to the pipe support integral attachment weld in this relief request.

The licensee may have invoked ASME Code Case N-509, *Alternative Rules for the Selection and Examination of Class 1, 2 and 3 Integrally Welded Attachments, Section XI, Division 1*, which lists Examination Category B-K, and states requirements for this, and other integral attachment, welds. However, no mention of the use of ASME Code Case N-509 has been stated. ASME Code Case N-509 is conditionally acceptable according to an earlier revision of Regulation Guide 1.147, *Inservice Inspection Code Case Acceptability*, which may have been in effect at the start of the licensee’s third 10-year inspection interval. The NRC condition for acceptable use was that a minimum 10% sample of integrally welded attachments for each item in each ASME Code class shall be examined during each interval.

State whether ASME Code Case N-509 was invoked and confirm that the listed condition for acceptance was applied for all Class 1, 2 and 3 integral attachment welds.

2.5 Request for Relief ANO1-ISI-020, Examination Category F-A, Item F1.40, Supports

- 2.5.1 The licensee has requested relief from the visual examination of Reactor Pressure Vessel (RPV) Support Skirt Circumferential Weld 01-032, and states that no access is available due to insulation blocks that are impractical to remove. However, the licensee was able to conduct remote visual examinations on the other two RPV support skirt components listed in the relief request by using a fiberscope through cut-outs in the support skirt. It is unclear from the licensee’s sketch provided why access to Weld 01-032 was not feasible. Please provide technical justification of why the visual examination could not be performed using the fiberscope, or whether the visual examination may be completed via other remote technology.