

June 24, 2004

Mr. Jeff Forbes
Vice President, Operations ANO
Entergy Operations, Inc.
1448 S. R. 333
Russellville, AR 72801

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
ARKANSAS NUCLEAR ONE, UNIT 2, LICENSE RENEWAL APPLICATION
(TAC NO. MB8402)

Dear Mr. Forbes:

The U.S. Nuclear Regulatory Commission (NRC) is reviewing a license renewal application (LRA) submitted by Entergy Operators Inc. (Entergy or the applicant) dated October 14, 2003 for the renewal of the operating licenses for Arkansas Nuclear One, Unit 2, pursuant to Title 10 *Code of Federal Regulations* Part 54 (10 CFR Part 54). The NRC staff has identified, in the enclosure, areas where additional information is needed to complete the review. Specifically, the enclosed requests for additional information (RAIs) are from Section 3.2 Engineered Safety Features Systems and Appendix B, Sections B.1.15 Non-EQ Inaccessible Medium-Voltage Cables, B.1.19 Pressurizer Examination, B.1.25 Steam Generator Integrity, B.1.30.1 Auxiliary System Water Chemistry Control, B.1.30.2 Closed Cooling System Water Chemistry Control, and B.1.30.3 Primary and Secondary Water Chemistry Control. These RAIs have been discussed with your staff.

Your response to these RAIs is requested within 30 days from receipt of this letter. If you have any questions, please contact me at (301) 415-1124 or e-mail gxs@nrc.gov.

Sincerely,

/RA/

Gregory F. Suber, Project Manager
License Renewal Section A
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No.: 50-368

Enclosure: As stated

cc w/encl: See next page

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**REQUEST FOR ADDITIONAL INFORMATION OF
AGING MANAGEMENT PROGRAMS AND REVIEWS
ASSOCIATED WITH THE AUDIT PROGRAM FOR
ARKANSAS NUCLEAR ONE - UNIT 2
LICENSE RENEWAL APPLICATION (TAC NO. MB8402)**

SECTION 3.2 ENGINEERED SAFETY FEATURES SYSTEMS

RAI 3.2-11

SRP-LR Subsection 3.2.2.2.3.2 states that local loss of material from pitting and crevice corrosion could occur in certain engineered safety feature systems components. The GALL report recommends further evaluation to ensure that this aging effect is adequately managed.

In LRA Table 3.2.1, line item 3.2.1-5, the applicant credits the primary and secondary water chemistry control and containment leak rate test programs with managing this aging effect. SRP-LR Subsection 3.2.2.2.3.2 recommends verification of the programs' effectiveness and identifies one-time inspections as an acceptable method. The staff also noted that, based on its review of the "parameters monitored or locations inspected" program element, both programs do not provide a means to allow the applicant to determine the presence or extent of pitting and crevice corrosion.

The applicant is requested to describe how the presence or extent of pitting and crevice corrosion will be detected for ESF systems components subject to this aging effect, and to provide the basis for assurance that periodic inspections will provide an adequate sample (i.e., frequency and location).

RAI 3.2-12

SRP-LR Section 3.2.2.2.4 states that local loss of material due to microbiologically influenced corrosion (MIC) could occur in containment isolation valves and associated piping in systems that are not addressed in other chapters of the GALL report. The GALL report recommends further evaluation to ensure that this aging effect is adequately managed.

In LRA Table 3.2.1, line item 3.2.1-6, the applicant states that the containment leak rate and water chemistry control programs manage the aging effect of loss of material due to MIC. However, it does not appear that the "parameters monitored" program element will detect the presence or extent of MIC. The applicant is requested to describe how the presence or extent of MIC will be detected for piping and valve component types in the Containment Penetrations System (LRA Table 3.2.2-4).

Enclosure

B.1.15 NON-EQ INACCESSIBLE MEDIUM-VOLTAGE CABLES

RAI B.1.15-1

In the ANO-2 LRA Section B.1.15, it states that the Non-EQ Inaccessible Medium Voltage Cable Program will be comparable to NUREG-1801, Section XI.E3 Inaccessible Medium-Voltage Cables. In LRA Section A.2.1.16, it states that the program will be initiated prior to the period of extended operation. In order to determine whether to what extent the proposed program will be consistent with the GALL Program XI.E3, the following additional information is requested:

- 1) Please provide a description of the ANO-2 program with respect to the 10 program elements in the GALL Program XI.E3.
- 2) Provided a justification for any exceptions and/or enhancements to the GALL Program

B.1.19 PRESSURIZER EXAMINATION AGING MANAGEMENT

RAI B.1.19-1

In LRA Section B.1.19, in the "Pressurizer Examinations" program description (page B-58), and in LRA Section A.2.1.20 (page A-16), the applicant stated that "the pressurizer examination program will be implemented prior to the period of extended operation." During the audit of AMP B.1.19, "Pressurizer Examinations," the staff asked the applicant to clarify whether this program is implemented by the current ISI program or is a future program, and if it is a current program, to confirm that the current ISI program addresses this AMP and that no additional actions are being taken to support the pressurizer examination AMP.

The applicant stated that the current ISI program implements this program and no additional actions are specified to support the pressurizer examinations program. Existing ISI volumetric inspections (Examination Categories B-A and B-D) are credited for managing cracking of cladding, which may propagate to the underlying ferritic steel.

The staff requests that the applicant confirm that B.1.19 Pressurizer Examination Program is an existing program and commit to updating the UFSAR Supplement Section A.2.1.20 to indicate that the pressurizer examinations program is a current program rather than a future program.

B.1.25 STEAM GENERATOR INTEGRITY

RAI B.1.25-1

The applicant states that its steam generator integrity program in LRA B.1.25 is consistent with GALL Section XI.M19, Steam Generator Tube Integrity. The steam generator tube integrity program in GALL Section XI.M19 is focused on steam generator tubes; however, as shown in LRA Table 3.1.2-5, the applicant includes many steam generator secondary side components other than tubes in its steam generator integrity program. The applicant needs to identify each component covered in LRA B.1.25.

B.1.30.1 AUXILIARY SYSTEM WATER CHEMISTRY CONTROL

RAI B.1.30.1-1

In the ANO-2 document PCD-01, Parameters Monitored or Inspected, page 52, the applicant states that the ANO-2 AMP inspects components for visible corrosion, deposits, structural damage, and biological growth. The applicant also states that the systems are inspected when opened for maintenance. (1) Discuss the systems and components that have been inspected (i.e., scope of inspection) under the auxiliary system water chemistry control program in the past and which systems and components would be inspected during the extended period of operation; and (2) Discuss whether any systems covered under this program have never been inspected and whether component failures (e.g., leakage) have occurred in these systems.

RAI B.1.30.1-2

NUREG-1800, Table 3.1-2 (page 3.1-23) and Table 3.3-2, (pages 3.3-17 and 3.3-22), under the water chemistry related systems, industry guidance and/or reports are identified. However, industry guidance and/or reports are not identified in LRA Section A.2.1.31. The staff requests that the applicant include in LRA Section A.2.1.31 specific industry guidance for the auxiliary system water chemistry program similar to NUREG-1800, Tables 3.3-2 and 3.1-2, or, justify not including industry guidance in LRA Section A.2.1.31.

B.1.30.2 CLOSED COOLING SYSTEM WATER CHEMISTRY CONTROL

RAI B.1.30.2-1

In NUREG-1800, Table 3.3-2, it is stated that "...The program relies on preventive measures to minimize corrosion by maintaining inhibitors and by performing non-chemistry monitoring consisting of inspection and nondestructive evaluations based on the guidelines of EPRI-TR-107396 for closed-cycle cooling water systems.." LRA Section A.2.1.32 neither refers to the inspections performed under this program nor specifies exceptions to GALL Section XI.M21. Please confirm that LRA Section A.2.1.32 is consistent with NUREG-1800, Table 3.3-2, or include and justify any exceptions to GALL Section XI.M21.

B.1.30.3 PRIMARY and SECONDARY WATER CHEMISTRY CONTROL

RAI B.1.30.3-1

NUREG-1800, Table 3.1-2, (page 3.1-23) and GALL Section XI.M2 reference EPRI reports TR-102134 and TR-105714. These reports are not referenced in LRA Section A.2.1.33. Please reference these two EPRI reports in LRA Section A.2.1.33, or justify the acceptability of LRA Section A.2.1.33.

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