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2CAN030401

March 24, 2004

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: License Renewal Application Clarifications
TAC No. MB8402
Arkansas Nuclear One – Unit 2
Docket No. 50-368
License No. NPF-6

Dear Sir or Madam:

By letter dated October 14, 2003 (2CAN100302), Entergy submitted the Arkansas Nuclear One, Unit 2 (ANO-2) License Renewal Application (LRA). During the week of February 9, 2004, the NRC performed an on-site audit of the ANO-2 previously approved Staff position comparisons. As a result of this audit, the following are clarifications to the LRA:

- Audit item 2621: The Inservice Inspection Program applies to the safe-ends (page 3.1-88) of Table 3.1.2-4 in addition to the Water Chemistry Program to manage cracking (other than fatigue).
- Audit item 2625: Reference to Generic Aging Lessons Learned (GALL) Volume 2 IV.C2.5-s is not appropriate for the 3 inch inspection port diaphragms (page 3.1-98) of Table 3.1.2-5. Note 101 is the appropriate note for this item rather than notes "C" and "E".
- Audit item 2627: Reference to the GALL item V.D1.6-a is not appropriate for "heater housing," and the correct note is 201 rather than "A" in Table 3.2.2-2 (page 3.2-29).
- Audit item 2638: Reference to the GALL item VII.H2.1-a is not appropriate for "valve," and the correct note is 301 rather than "E" in Table 3.3.2-2 (page 3.3-43).
- Audit item 2639: The aging effects for carbon steel and cast iron are the same in all environments with the exception that gray cast iron is susceptible to the aging mechanism of selective leaching. Where selective leaching is possible, an additional program is credited unless the one specified program will manage selective leaching such as the Diesel Fuel Monitoring and Oil Analysis Programs.

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Selective leaching does not normally occur in air, lube oil, or fuel oil due to the lack of an aqueous environment. In the LRA, if cast iron components are gray cast iron and are exposed to an environment conducive to selective leaching, then they are managed by a program (Periodic Surveillance and Preventive Maintenance (PSPM) Program, Service Water Integrity Program (SWIP), or Fire Protection Program) that includes the management of loss of material due to selective leaching.

- Audit item 2643: The PSPM Program manages loss of material for the emergency diesel generator (EDG) heat exchanger bonnet in fresh raw water (page 3.3-51) in Table 3.3.2-3 through periodic internal inspections during EDG overhauls. In addition to the PSPM Program, the SWIP is conservatively included as an aging management program since it provides additional aging management of this component.
- Audit item 2644: The Auxiliary Systems Water Chemistry Control Program applies to the EDG heat exchanger bonnet and shell in treated water (page 3.3-51) rather than the PSPM Program.
- Audit item 2646: In Table 3.3.2-3, reference to note "D" is not appropriate for the EDG heater housing and orifice (page 3.3-54) and the carbon and stainless steel piping (page 3.3-56) in treated water. The correct note is "E."
- Audit item 2648: In Table 3.3.2-3, reference to note "D" is not appropriate for the EDG pump casing and tank (page 3.3-57), tubing (page 3.3-59), and valve (page 3.3-61) in treated water. The correct note is "E."
- Audit item 2650: Section 3.3.2.2.2 states, "Elastomers are used in other systems (other than spent fuel cooling systems and ventilation systems)." For these systems, management of elastomer degradation is provided by the PSPM program and supplemented by the Fire Protection Program." The words "supplemented by" were meant to imply that for fire protection elastomers, the Fire Protection Program is used instead of the PSPM Program.
- Audit item 2651: Reference to "water chemistry control" for the alternate AC diesel generator stainless steel expansion joint in treated water (page 3.3-67) in Table 3.3.2-4 means the Auxiliary Systems Water Chemistry Control Program. In addition, wherever notes "B" or "D" were used in Tables 3.3.2-3 and 3.3.2-4 with the Auxiliary Systems Water Chemistry Control Program as an aging management program, note "E" should have been used since the Auxiliary Systems Water Chemistry Control Program is the water chemistry control program for treated water, and it is a plant-specific program.
- Audit item 2660: Cracking-fatigue is identified as an aging effect for the chemical and volume control system pump casing (page 3.3-84) in Table 3.3.2-5 with the PSPM Program as an aging management program. Cracking-fatigue should be included as an aging effect for the chemical and volume control system charging pumps in the "Detection of Aging Effects" of Section B.1.18 of Appendix B.

- Audit item 2687: In LRA Table 3.5.2-1 (page 3.5-27), reference to Table 1 item 3.5.1-15 is appropriate for tendon anchorage and tendon wires rather than to Table 1 item 3.5.1-3. Also, for item 3.5.1-15 (page 3.5-17), the appropriate reference is to the Inservice Inspection (IVL) Program rather than the Inservice Inspection (IWE) Program.
- Audit item 2690: In Table 3.5.2-4 (page 3.5-38), the correct reference to GALL Volume 2 for the heating, ventilation, and air-conditioning missile barrier is III.A3.2-a rather than III.A2.2-a.

In addition, cast iron was inadvertently included in Section 3.3.2.1.1 (page 3.3-2) and Table 3.3.2-1 (page 3.3-32) as a valve material for the spent fuel pool system. Cast iron is not a valve material in the spent fuel pool system.

Contrary to the last sentence in LRA Section 4.3.2, the ANO-2 regenerative heat exchanger requires evaluation for the effects of thermal fatigue for the period of extended operation. A fatigue evaluation showing the acceptability of the regenerative heat exchanger for the period of extended operation will be completed prior to entering the period of extended operation, or the heat exchanger will be replaced.

Also, per NRC request, enclosed is report A2-ME-2003-001, Aging Management Review of Nonsafety-Related Systems and Components Affecting Safety-Related Systems.

New commitments contained in this submittal are summarized in the attachment. Should you have any questions concerning this submittal, please contact Ms. Natalie Mosher at (479) 858-4635.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 24, 2004.

Sincerely,



Timothy G. Mitchell
Director, Nuclear Safety Assurance

TGM/nbm

Attachment/Enclosure

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Attachment to
2CAN030401
List of Regulatory Commitments

List of Regulatory Commitments

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

| COMMITMENT | TYPE (Check One) | | SCHEDULED COMPLETION DATE (If Required) |
|---|------------------------|--------------------------|--|
| | ONE- TIME ACTION | CONTINUING COMPLIANCE | |
| The aging effects for carbon steel and cast iron are the same in all environments with the exception that gray cast iron is susceptible to the aging mechanism of selective leaching. Where selective leaching is possible, an additional program is credited unless the one specified program will manage selective leaching such as the Diesel Fuel Monitoring and Oil Analysis Programs. Selective leaching does not normally occur in air, lube oil, or fuel oil due to the lack of an aqueous environment. In the LRA, if cast iron components are gray cast iron and are exposed to an environment conducive to selective leaching, then they are managed by a program (PSPM Program, SWIP, or Fire Protection Program) that includes the management of loss of material due to selective leaching. | | X | July 17, 2018 |
| Cracking-fatigue is identified as an aging effect for the chemical and volume control system pump casing (page 3.3-84) in Table 3.3.2-5 with the PSPM Program as an aging management program. Cracking-fatigue should be included as an aging effect for the chemical and volume control system charging pumps in the "Detection of Aging Effects" of Section B.1.18 of Appendix B. | | X | July 17, 2018 |

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|--|----------|--|----------------------|
| <p>Contrary to the last sentence in LRA Section 4.3.2, the ANO-2 regenerative heat exchanger requires evaluation for the effects of thermal fatigue for the period of extended operation. A fatigue evaluation showing the acceptability of the regenerative heat exchanger for the period of extended operation will be completed prior to entering the period of extended operation, or the heat exchanger will be replaced.</p> | <p>X</p> | | <p>July 17, 2018</p> |
|--|----------|--|----------------------|