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Acting Director
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CNRO-2006-00042

September 8, 2006

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

SUBJECT: Request for Alternative ANO1-ISI-007
Proposed Alternative to Extend the Third 10-Year Inservice Inspection
Interval for Reactor Vessel Visual Examinations

Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51

- REFERENCES:**
1. Entergy Operations, Inc. letter CNRO-2006-00026, dated April 24, 2006
 2. Entergy Operations, Inc. letter CNRO-2006-00024, dated April 24, 2006
 3. NRC letter to the Westinghouse Owners Group, dated January 27, 2005
 4. NRC letter to Nuclear Management Company, dated January 27, 2006

Dear Sir or Madam:

In Reference #1, Entergy Operations, Inc. (Entergy) submitted Request for Alternative ANO1-ISI-007 for Arkansas Nuclear One, Unit 1 (ANO-1), which requested approval to:

1. Extend the third 10-year inservice inspection (ISI) interval for examining the reactor vessel interior attachments (Examination Category B-N-2) and the core support structure (Examination Category B-N-3) to the end of the subsequent fall 2008 refueling outage (1R21), and
2. Defer the period-based visual examination of the accessible locations of the reactor vessel interior per Examination Category B-N-1 to 1R21.

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During review of ANO1-ISI-007, the NRC staff requested additional justification and clarification be provided. Entergy has revised ANO1-ISI-007 to incorporate the additional information to support this request. The revised ANO1-ISI-007 is provided in Enclosure 1 and replaces in its entirety the previous version submitted via the referenced letter. Substantive changes are denoted by revision bars in the margins of the affected pages.

Also in Reference #1, Entergy committed to perform the Code-required third interval examinations of the reactor vessel Examination Categories B-N-1, B-N-2, and B-N-3 items during 1R21 consistent with the approved ANO1-ISI-007. This commitment remains in effect for this revised request and is denoted in Enclosure 2.

Request for Alternative ANO1-ISI-005, which Entergy submitted to the NRC staff via Reference #2, requests extending the 10-year reactor vessel ISI interval at ANO-1 to the end of 1R21 and provides the associated technical basis. NRC authorization to extend the examinations covered in ANO1-ISI-007 will align the examinations with other examinations being performed during 1R21. The acceptability of an additional cycle to complete the reactor vessel ISI 10-year inspections was provided to the Westinghouse Owners Group (WOG) in Reference #3. The overall purpose of the one-cycle extension is to allow additional NRC review time to approve a WOG initiative that would extend the 10-year reactor vessel ISI examinations to 20 years. Entergy is one of the participants in this initiative. The need to seek relief for the visual examination requirements for Examination Category B-N welds is directly associated with the ability to gain relief for the B-A, B-D, and B-J welds since the core barrel would have to be removed to perform the B-N-2 and B-N-3 examinations.

The NRC approved a similar request made by Palisades Nuclear Plant, as documented in Reference #4.

Entergy requests the NRC approve ANO1-ISI-007 by October 1, 2006 in order to support planning activities for 1R20, the spring 2007 refueling outage at ANO-1. Should you have any questions regarding this submittal, please contact Guy Davant at (601) 368-5756.

Very truly yours,



FGB/GHD/ghd

Enclosures: 1. Request for Alternative ANO-ISI-007
2. Licensee-Identified Commitments

cc: Mr. W. A. Eaton (ECH)
Mr. J. S. Forbes (ANO)

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ENCLOSURE 1

CNRO-2006-00042

**REQUEST FOR ALTERNATIVE
ANO-ISI-007**

**ENTERGY OPERATIONS, INC.
 ARKANSAS NUCLEAR ONE, UNIT 1
 REQUEST FOR ALTERNATIVE
 ANO-ISI-007**

I. COMPONENTS

The affected component is the ANO reactor vessel, N-50. The specific examination categories and item numbers are from Table IWB-2500-1 of the 1992 Edition of ASME Section XI.

| <u>Component</u> | <u>Number</u> | <u>Description</u> |
|------------------|---------------|---|
| B-N-1 | B13.10 | Vessel Interior |
| B-N-2 | B13.50 | Interior Attachments Within Beltline Region |
| B-N-2 | B13.60 | Interior Attachments Beyond Beltline Region |
| B-N-3 | B13.70 | Core Support Structure |

Code Class: 1

- Reference:
1. Entergy Operations, Inc. letter CNRO-2006-00024, *Request for Alternative ANO-ISI-005 - Proposed Alternative to Extend the Third Inservice Inspection Interval for Reactor Vessel Inservice Examinations*, dated April 24, 2006
 2. Westinghouse Owners Group report WCAP-16168-NP, Revision 1, *Risk-Informed Extension of the Reactor Vessel In-Service Inspection Interval* (January 2006)

Unit / Inspection Interval: ANO-1 / Third (3rd) 10-Year Interval

II. CODE REQUIREMENTS

ASME Section XI IWB-2412, *Inspection Program B*, requires visual examination of the reactor vessel interior attachments and the core support structure identified in Table IWB-2500-1 once each 10-year interval. IWA-2430(d) allows inspection intervals to be extended by as much as one year if this adjustment does not cause successive intervals to be altered by more than one year.

III. PROPOSED ALTERNATIVE

Pursuant to 10 CFR 50.55a(a)(3)(ii), Entergy Operations, Inc. (Entergy) proposes an alternative to the requirements of IWA-2432, which require visual examination of the reactor vessel interior attachments and the core support structure to be performed once each 10-year inservice inspection (ISI) interval. Additionally, Entergy requests a similar deferral of the period-based visual examination of the accessible locations of the reactor

vessel interior per Examination Category B-N-1. Specifically, Entergy proposes to extend the ISI interval for the identified items to the end of 1R21 (approximately 180 days beyond the currently scheduled interval and the Code-allowed one-year extension).

IV. BASIS FOR PROPOSED ALTERNATIVE

A. Background

ANO-1 is currently in its third inservice inspection (ISI) interval, which began June 1, 1997, and ends May 31, 2007. ASME Section XI IWA-2430(d) allows a one-year extension of an interval, which would extend the interval to May 31, 2008. (Use of this one-year extension does not require approval from the NRC.) In order to comply with Code requirements, third interval visual examinations of the reactor vessel interior attachments (Examination Category B-N-2), accessible vessel interior (Examination Category B-N-1), and the core support structure (Examination Category B-N-3) must be performed during ANO-1's spring 2007 refueling outage (1R20). Entergy proposes to perform these examinations during the fall 2008 refueling outage (1R21).

B. Basis for Proposed Alternative

Given approval to extend the ANO-1 10-year reactor vessel ISI interval to the end of 1R21 as contained in Entergy's Request for Alternative ANO1-ISI-005 (Reference 1), Entergy also seeks to defer the Code-required visual examinations for Examination Categories B-N-2 and B-N-3 items until 1R21. In order to perform these examinations, the core barrel must be removed from the reactor vessel to allow access to the applicable welds and surfaces. As a result, these examinations are best performed in concert with the reactor vessel ISI examinations. Entergy also believes that removing the core barrel would provide better coverage of Examination Category B-N-1 items when performing the Code-required period-based inspections. Entergy believes that performing these examinations during the upcoming 1R20 refueling outage will result in a hardship without a compensatory increase in the level of quality and safety.

ASME Section XI requires that the visual examinations of the reactor vessel interior attachments and the core support structure required by Examination Categories B-N-2 and B-N-3 be performed once every inspection interval. These exams are typically performed at the end of the interval during the same refueling outage as the reactor vessel examinations. The inspection requirements for the Examination Category B-N-1 examinations are to be performed every inspection period.

Examinations required for Examination Categories B-N-2 and B-N-3 items involve removing the core barrel from the reactor to allow access to applicable welds and surfaces. These exams were last performed during the 1995 refueling outage with acceptable results. Additionally, review of industry surveys indicate that these exams have been performed many times by the industry without any reportable findings (see Table 2-1, *Summary of Survey Results on RV ISI Findings* in Reference 2).

Examination Category B-N-1 visual examination includes the space above and below the reactor core that is made accessible for examination by removing components during the associated refueling outage. A more comprehensive visual examination can be realized by removing the core barrel. This examination is required once each inspection period and provides reasonable assurance of structural integrity.

As discussed above, Entergy has submitted to the NRC staff a request to defer performing the complete reactor vessel ISI via Request for Alternative ANO1-ISI-005 (Reference 1). The complete reactor vessel ISI requires removing the core barrel. Deferring the examinations of the Examination Categories B-N-1, B-N-2, and B-N-3 items until the performance of the complete reactor vessel ISI will consolidate activities and reduce personnel radiological exposure. Specifically, removing and replacing the core barrel in order to perform these examinations involves approximately 600 mRem dose. Performing these examinations during the same planned evolution will result in a dose savings of 600 mRem since the core barrel will be removed and replaced only once rather than twice.

V. CONCLUSION

10CFR50.55a(a)(3)states:

"Proposed alternatives to the requirements of (c), (d), (e), (f), (g), and (h) of this section or portions thereof may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. The applicant shall demonstrate that:

- (i) The proposed alternatives would provide an acceptable level of quality and safety, or
- (ii) Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety."

As discussed in Section IV, above, Entergy believes that compliance with the requirements of ASME Section XI IWB-2412 would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Entergy believes that the proposed alternative to extend the inspection interval for visually examining the reactor vessel interior, the interior attachments, and the core support structure to the end of 1R21, the ANO-1 fall 2008 refueling outage, provides an acceptable level of quality and safety. Therefore, Entergy requests the NRC staff approve this proposed alternative in accordance with 10 CFR 50.55a(a)(3)(ii).

ENCLOSURE 2

CNRO-2006-00042

LICENSEE-IDENTIFIED COMMITMENTS

LICENSEE-IDENTIFIED COMMITMENTS

| COMMITMENT | TYPE (Check one) | | SCHEDULED COMPLETION DATE |
|--|---------------------|--------------------------|---|
| | ONE-TIME ACTION | CONTINUING COMPLIANCE | |
| Entergy will perform the ASME Code required visual examinations of the ANO-1 Examination Categories B-N-1, B-N-2, and B-N-3 items during 1R21, the fall 2008 refueling outage. | ✓ | | Fall 2008 Refueling Outage (1R21) |