Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72802
Tel 479-858-4710
David B. Bice
Acting Manager, Licensing
Arkansas Nuclear One

2CAN021002

February 17, 2010

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

SUBJECT: Request for Relief PRR-ANO2-2010-1
Relief from the Requirements of OM Code
Section ISTB-5221 and ISTB-5223 for the
Service Water Pumps
Arkansas Nuclear One, Unit 2
Docket No. 50-368
License No. NPF-6

REFERENCES
1. Entergy letter to the NRC, dated November 12, 1999, "Third Interval Inservice Testing Program Submittal" (2CAN119904)
2. NRC letter to Entergy, dated March 31, 2000, "Arkansas Nuclear One, Unit 2 RE: Relief Requests Associated with the Third Interval Inservice Testing Program Submittal (TAC Nos. MA7302 and MA7305) (2CNA030004)

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(a)(3)(i), Entergy Operations, Inc. (Entergy) requests relief for the Arkansas Nuclear One, Unit 2 (ANO-2) Fourth 10-Year Interval Inservice Testing Program for the Service Water pumps. The proposed relief is requested when using the requirements of American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code, 2004 Edition, pertaining to an inservice test that requires the pump flow rate and differential pressure be evaluated against reference values to monitor pump condition and to allow detection of hydraulic degradation.

The proposed relief is in accordance with ASME Code Case OMN-16. This code case provides an acceptable level of quality and safety for testing the subject pumps, and is an acceptable replacement for OMN-9 which was previously approved in Regulatory Guide 1.192. Request for Relief PRR-ANO2-2010-1 is provided in the attachment to this letter.

This letter contains no new commitments.

This request is essentially the same as that made in Reference 1 and approved by the NRC in Reference 2. The current request is for the fourth 10-year interval. The fourth interval begins on March 26, 2010.

Although this request is neither exigent nor emergency, your prompt review is requested.

If you have any questions or require additional information, please contact me.

Sincerely,

DBB/rwc

Attachment: Request for Relief PRR-ANO2-2010-1

cc: Mr. Elmo E. Collins
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
612 E. Lamar Blvd., Suite 400
Arlington, TX 76011-4125

NRC Senior Resident Inspector
Arkansas Nuclear One
P.O. Box 310
London, AR 72847

U.S. Nuclear Regulatory Commission
Attn: Mr. Kaly Kalyanam
MS O-8 B1
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

ATTACHMENT TO

2CAN021002

REQUEST FOR RELIEF
PRR-ANO2-2010-1

10 CFR 50.55a Request Number PRR-ANO2-2010-1

Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(i)

10 CFR 50.55a Request Title: 2P-4A, 2P-4B, 2P-4C Alternative Request

PLANT / UNIT:	Arkansas Nuclear One, Unit 2, Docket No. 50-368, License No. NPF-6
INTERVAL:	Fourth 120-Month Inservice Testing interval
COMPONENTS AFFECTED:	Pumps: 2P-4A, 2P-4B, 2P-4C System: Service Water (SW) These centrifugal vertical line shaft pumps provide an assured source of cooling water to various safety related and safe shutdown components. They also provide cooling water to various balance-of-plant components during normal plant operation.
CODE EDITION AND ADDENDA:	American Society of Mechanical Engineering (ASME) Operations and Maintenance (OM) Code 2004 Edition
REQUIREMENTS:	ISTB-5221 and ISTB 5223 Group A and Comprehensive tests shall be conducted with the pump operating at a specified reference point. The test parameters shown in Table IST-3000-1 shall be determined and recorded as required by this paragraph.
REASON FOR RELIEF REQUEST:	During normal plant operation, either two or three SW pumps are required to be in operation. The pumps provide cooling water flow to the two safety grade SW loops and to the non-safety grade auxiliary cooling water loop. Interrupting the cooling water flow to certain components would result in an immediate plant transient or a plant trip. The system flow requirements are defined by the service loads of the supplied components. After system operation reaches a degree of stability, perturbation of flow to any of the on-line heat exchangers could have a severe adverse impact on plant operation with the potential for unacceptable flow and temperature transients. This situation precludes flow adjustments on specific heat loads and throttling of pump or header isolation valves. As such, returning the system operating parameters to a prescribed unique reference value (either flow or differential pressure) is impractical and could result in an unreasonable and unwarranted risk to plant operation with little or no apparent gain in plant safety or reliability. Historical test data indicates that over the operating range of interest there is little or no variation in pump vibration characteristics (e.g., vibration levels are independent of flow rate over the allowed range of flows for these pumps).

10 CFR 50.55a Request Number PRR-ANO2-2010-1

PROPOSED ALTERNATIVE AND BASIS:

The proposed relief is in accordance with ASME Code Case OMN-16. OMN-16 provides an acceptable level of quality and safety for testing the subject pumps, and is an acceptable replacement for OMN-9 which was previously approved for use in Regulatory Guide 1.192.

These pumps will be tested on a quarterly basis with the specific unique test reference values, as described in ISTB-3300, Reference Values, replaced by a set of variable reference values in the form of a representative curve denoting reference differential pressure as a function of pump indicated flow rate for each pump. The reference flow versus differential pressure (dP) curve represents hydraulic performance over the entire flow range of the pump. The reference curve will be determined for each pump as follows:

1. Each reference pump curve will be determined when the pump is known to be operating acceptably.

2. Measurements used to obtain reference points for the curve will use instruments that meet the accuracy and range requirements of ISTB-3500, Data Collection, for both Group A tests and for Comprehensive tests.

3. The reference curve will be constructed in accordance with OMN-16 from at least five measured points over the operating range of pump flow rates. Corresponding dP and flow rate measurements will be recorded after flow stability is achieved at each point.

4. Only those points of the reference curve beyond the flat, low flow region and within the design flow rate of the pump will be used to establish acceptance criteria for quarterly testing. This range will include pump design basis flow rates.

5. Acceptance criteria will be established that do not conflict with operability criteria for flow rate and dP in the Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specifications (TSs) or the ANO-2 Safety Analysis Report (SAR).

6. The acceptance criteria for pump/motor vibration will be those specified in Table ISTB-5221-1, Vertical Line Shaft and Centrifugal Pumps Test Acceptance Criteria, for Group A and Comprehensive tests, based on reference values measured during typical pump operation at or near the pump's design basis flow rate. Vibration levels have been demonstrated to remain essentially the same over the entire range of flow rates used.

10 CFR 50.55a Request Number PRR-ANO2-2010-1

7. After any maintenance or repair to a pump that may have affected or significantly altered the previous pump performance curve, a new reference pump curve will be developed or the previous curve revalidated by an appropriate inservice test.

The SW pumps are centrifugal vertical line shaft pumps. The limits for acceptable pump dP at operating flow will be derived from Table ISTB-5221-1, Vertical Line Shaft and Centrifugal Pumps Test Acceptance Criteria. Individual acceptance criteria for each pump will be developed as follows:

1. The "required action range" will be where pump dP, at the operating flow rate, indicates less than 93% of the value taken from the reference curve for both Group A and Comprehensive tests greater than 110% of the reference value for Group A tests and greater than 103% for Comprehensive tests.

2. An "alert range" will be established where pump dP, at the operating flow rate, indicates ≥ 93% and < 95% of the value taken from the reference curve for both Group A and Comprehensive tests.

3. Each of the pump's acceptance criteria curves shall be compared to the applicable and corresponding requirements for these pumps as set forth in ANO-2 TSs, Safety Evaluation Reports, and SAR. If necessary, adjustments to the required action range limits will be made to ensure that the acceptance criteria are conservative with respect to the requirements of license basis documents.

4. In the event that a pump's operational parameters fall outside of the acceptance criteria, appropriate corrective actions will be implemented consistent with ISTB-6200, Corrective Action.

The proposed alternate testing for these pumps meets or exceeds the requirements as set forth in NUREG-1482, Revision 1, Section 5.2.

The proposed alternate testing will provide adequate test information and assurance equivalent to that of the Code requirement needed to assess the operational readiness of the subject pumps and adequately detect significant pump degradation.

DURATION: This relief is to be effective for ANO-2's Fourth Inservice Testing interval. The fourth interval begins on March 26, 2010.

PRECEDENTS: This relief request is similar to relief request (IST 2-99-1) transmitted in Entergy letter 2CAN119904, dated November 12, 1999. This request was approved by the NRC for the third 10-year interval in letter 2CNA030004, dated March 31, 2000.

REFERENCES: Revision 1 of NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants, Final Report, Published January 2005

Entergy letter to the NRC, dated November 12, 1999, "Third Interval Inservice Testing Program Submittal" (2CAN119904)

NRC letter to Entergy, dated March 31, 2000, "Arkansas Nuclear One, Unit 2 RE: Relief Requests Associated With The Third Interval Inservice Testing Program Submittal (TAC Nos. MA7302 and MA7305) (2CNA030004)

STATUS: Submitted for NRC review and approval by Entergy letter dated February 17, 2010 (2CAN021002).