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July 13, 2000

2CAN070009

U. S. Nuclear Regulatory Commission  
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Washington, DC 20555

Subject: Arkansas Nuclear One - Unit 2  
Docket No. 50-368  
License No. NPF-6  
Proposed Technical Specification Change for Special  
Steam Generator Inspection

Gentlemen:

Attached for your review and approval is a proposed Technical Specification (TS) change revising the requirements associated with Arkansas Nuclear One, Unit 2 (ANO-2), provisions for steam generator tubing and repair. The proposed change affects the ANO-2 Surveillance Requirements pertaining to the steam generator tubing inservice inspection requirements during the upcoming mid-cycle outage scheduled to begin on July 21, 2000.

The proposed scope for this special inspection does not correspond with the current ANO-2 TSs, therefore requiring a one time change. Similar single SG tube inspection changes were previously approved by the Staff on January 5, 1995, in ANO-2 TS Amendment 158 for the 2P95-1 SG inspection and on November 5, 1999, in ANO-2 TS Amendment 210 for the 2P99 SG inspection.

The proposed change has been evaluated in accordance with 10CFR50.91(a)(1) using criteria in 10CFR50.92(c) and it has been determined that this change involves no significant hazards considerations. The bases for these determinations are included in the attached submittal.

Entergy Operations requests that this proposed change be approved before the start of the actual eddy current campaign on July 26, 2000, so that the scope of the inspection will be known. We request that this proposed change be considered under exigent circumstances as described in 10CFR50.91(a)(6) in that failure to act quickly could result in an extended outage for ANO-2. As required by 10CFR50.91(a)(6), attached is a statement of the exigent circumstances surrounding this request.

A-001

Very truly yours,

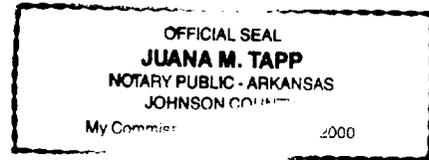


CGA/fpv  
attachment

**To the best of my knowledge and belief, the statements contained in this submittal are true.**

**SUBSCRIBED AND SWORN TO** before me, a Notary Public in and for Johnson  
County and the State of Arkansas, this 13 day of July, 2000.

Juana M. Tapp  
Notary Public  
My Commission Expires 11-8-2000



cc: Mr. Ellis W. Merschoff  
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ATTACHMENT

TO

2CAN070009

PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTER OF AMENDING

LICENSE NO. NPF-6

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT TWO

DOCKET NO. 50-368

## **DESCRIPTION OF PROPOSED CHANGES**

The proposed changes to the Arkansas Nuclear One, Unit 2 (ANO-2), Technical Specifications (TSs) allow the performance of a special steam generator (SG) tubing inspection during the 2P00 mid-cycle outage utilizing different scope and expansion criteria than currently specified. The current note in TS 4.4.5.0 is modified as follows:

- The applicable outage number and date are revised from 2P99 to 2P00 and November 1999 to Summer 2000, respectively. The requirements contained in the Note are not modified.

## **BACKGROUND**

Since the development and addition of the essentially generic augmented SG inservice inspection requirements in the TSs based upon Regulatory Guide 1.83, new degradation mechanisms and specific areas of concern in the SGs have become more prominent which require inspection programs that supplement current TS requirements. An example of an area for which special SG tube inspections may vary from the standardized TS inspections is described below:

### Inspection Scope

Surveillance Requirement 4.4.5.2.b.3 requires the first sample of tubes selected for each inservice inspection to be inspected from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg. This requirement is not appropriate for special inspections such as the ANO-2 inspection to be conducted during the next planned mid-cycle outage (2P00), since the specific area of interest has already been determined based on previous inspection history to include only a section of the tubes in the hot leg for a general bobbin coil inspection.

The proposed scope for this special inspection does not correspond with the current ANO-2 TSs, therefore requiring a one time change. Similar single SG tube inspection changes were previously approved by the Staff on January 5, 1995, in ANO-2 TS Amendment 158 for the 2P95-1 SG inspection and on November 5, 1999, in ANO-2 TS Amendment 210 for the 2P99 SG inspection.

On August 18, 1999 (2CAN089905), Entergy Operations submitted a proposed TS change request concerning SG inspection requirements for the replacement SGs to be installed during the 2R14 outage in September 2000. The note proposed to be added to TS 4.4.5.0 by 2CAN089905 will supercede the note currently in the TS (and as modified by this request for the 2P00 outage). Since the note, as modified by this current request, contains a reporting requirement for a submittal within thirty days after entering Mode 4 at the end of 2P00, Entergy Operations requests that the implementation date for the replacement steam generator amendment be after the end the 2P00 reporting period.

### **DISCUSSION OF CHANGE**

The proposed change to TS 4.4.5.0 will resolve compliance problems with the TSs during the special inspection to be conducted during 2P00 by specifying that the Surveillance Requirements of TS 3.4.5 do not apply to the 2P00 special steam generator inspection. Several general requirements, previously utilized for the 2P99 special inspection, are retained for the 2P00 inspection. First, the appropriate scope and expansion criteria for the special inspection will be developed by Entergy Operations and approved by the Staff. A requirement has also been retained for the Plant Safety Committee (PSC) to review the results of the special inspection prior to entering Mode 4, at which time the steam generators are declared operable. Typically, the PSC review would assure the adequacy of the inspection considering previously identified damage mechanisms and any newly identified phenomena. A requirement to provide a special report to the NRC within 30 days of entering Mode 4 discussing the inspection results has also been retained.

The proposed change has been determined to be acceptable since the one-time inspection will be performed after a shorter interval between inspections than required by the TSs. The special one-time inspection will not affect the current TS interval between normal inservice inspections; it is an additional inspection, not a replacement. The proposed change requires the Staff to review and approve the scope and expansion criteria for the special inspection to provide additional oversight of their adequacy. All defective tubes found during this special inspection will be appropriately repaired.

### **DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION**

Entergy Operations, Inc. is proposing that the Arkansas Nuclear One Unit 2 (ANO-2) Operating License be amended to exempt the special steam generator (SG) tubing inspection to be conducted during the 2P00 mid-cycle outage from the current Technical Specification (TS) requirements for augmented SG tubing inspections. The special inspection will be in addition to, not in lieu of, the SG tubing inspections currently required by the TSs. The NRC will approve the scope and expansion criteria for the special inspection.

An evaluation of the proposed change has been performed in accordance with 10CFR50.91(a)(1) regarding no significant hazards considerations using the standards in 10CFR50.92(c). A discussion of these standards as they relate to this amendment request follows:

**Criterion 1 - Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.**

This change has no actual impact on any previously analyzed accident in the final safety analysis report (FSAR). A double-ended break of one steam generator tube is postulated as part of the ANO-2 design basis accident evaluation. The change permits Entergy Operations to determine the appropriate scope and expansion criteria for a special steam generator tube inspection that is being performed at a frequency more conservative than that of the augmented inservice inspection program included in the TSs. The special inspection will find and repair certain steam generator tubing flaws that would otherwise remain in service until the next scheduled refueling outage. The increased inspection frequency reduces the probability that a flaw in a steam generator tube could grow to a size that would affect the leakage or structural integrity of the tube. The augmented inservice inspection program contained in the TSs is not being modified.

This change does not modify any parameter that will increase radioactivity in the primary system or increase the amount of radioactive steam released from the secondary safety valves or atmospheric dump valves in the event of a tube rupture.

Therefore, this change does not involve a significant increase in the probability or consequences of any accident previously evaluated.

**Criterion 2 - Does Not Create the Possibility of a New or Different Kind of Accident from any Previously Evaluated.**

The scope of this change does not establish a potential new accident precursor. The design basis accident analyses for ANO-2 include the consequences of a double-ended break of one steam generator tube which bounds other postulated failure mechanisms. The proposed change would permit determination of alternate inspection criteria for a special inspection which is in addition to the periodic inservice inspections required by the TSs. The equipment used in the special inspection would not affect any plant components differently than those used for current TS required inspections.

Therefore, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

**Criterion 3 - Does Not Involve a Significant Reduction in the Margin of Safety.**

As previously stated, a double-ended rupture of one steam generator tube is accounted for in the ANO-2 design basis accident analysis. Considering that the 2P00 special inspection is in addition to the inservice inspection program defined in the ANO-2 TSs and that leakage detection capability is not being modified, performance of a special inspection of any scope will increase the margin of safety over the current TS requirements.

Therefore, this change does not involve a significant reduction in the margin of safety.

Therefore, based upon the reasoning presented above and the previous discussion of the amendment request, Entergy Operations has determined that the requested change does not involve a significant hazards consideration.

**ENVIRONMENTAL IMPACT EVALUATION**

10 CFR 51.22(c) provides criteria for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration, (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released off-site, or (3) result in a significant increase in individual or cumulative occupational radiation exposure. Entergy Operations, Inc. has reviewed this license amendment and has determined that it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the proposed license amendment. The basis for this determination is as follows:

1. The proposed license amendment does not involve a significant hazards consideration as described previously in the evaluation.
2. As discussed in the significant hazards evaluation, this change does not result in a significant change or significant increase in the radiological doses for any Design Basis Accident. The proposed license amendment does not result in a significant change in the types or a significant increase in the amounts of any effluents that may be released off-site.
3. The proposed license amendment does not result in a significant increase to the individual or cumulative occupational radiation exposure because most steam generator inspection activities are performed using robotics to limit occupational

doses, while ALARA practices are maintained for the remaining SG inspection activities.

### **STATEMENT OF EXIGENT CIRCUMSTANCES**

10CFR50.91(a)(6) states that whenever an exigent condition exists, a licensee requesting an amendment must explain why this exigent situation occurred and why it could not be avoided.

On February 11, 2000 (2CAN020005), Entergy Operations submitted a deterministic operational assessment of steam generator tubing for the remainder of cycle 14 to the Staff. The emphasis of the assessment was to evaluate approximately one half-cycle operation for eggcrate axial flaws on the hot leg portion of the steam generators (SGs). The assessment utilized full cycle data for deterministic evaluations of different damage mechanisms.

The operational assessment determined an acceptable runtime of 0.83 effective full power year (EFPY), which bounds the actual run time of approximately 0.80 EFPY until the next scheduled ANO-2 refueling outage (2R14) in September 2000. The ANO-2 SGs will be replaced during the 2R14 outage.

On March 9, 2000, Entergy Operations also submitted a license amendment request (2CAN030003) to allow the use of a risk-informed approach to operate ANO-2 for the remainder of cycle 14.

The NRC Staff's review of the operational assessment and the risk-informed license amendment is ongoing. Recently NRC has made Entergy Operations aware of concerns with both of these approaches. Due to these concerns a special mid-cycle inspection of the steam generators will be conducted on July 21, 2000. Due to the short time interval between submittal of this request and actual performance of the special steam generator inspection, Entergy Operations believes that insufficient time remains for normal NRC processing and notification. Therefore, Entergy Operations requests that this proposed technical specification change be considered under exigent circumstances as described in 10CFR50.91(a)(6).

**PROPOSED TECHNICAL SPECIFICATION CHANGES**

## REACTOR COOLANT SYSTEM

### STEAM GENERATORS

#### LIMITING CONDITION FOR OPERATION

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3.4.5 Each steam generator shall be OPERABLE.

APPLICABILITY: MODES 1,2, 3 and 4.

ACTION:

With one or more steam generators inoperable, restore the inoperable generator(s) to OPERABLE status prior to increasing Tavg above 200°F.

#### SURVEILLANCE REQUIREMENTS

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4.4.5.0 Each steam generator shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

Note: The surveillance requirements of Specification 3.4.5 do not apply to the special steam generator tube inspection to be performed during the 2P00 outage scheduled for the Summer 2000. The scope and expansion criteria for the inspection are specified in correspondence to the NRC submitted under separate cover. The scope and expansion criteria shall be approved by the NRC prior to entering Mode 4. The results of the special inspection shall be reviewed by the Plant Safety Committee prior to entering Mode 4 and reported to the NRC within 30 days of entering Mode 4.

4.4.5.1 Steam Generator Sample Selection and Inspection - Each steam generator shall be determined OPERABLE during shutdown by selecting and inspecting at least the minimum number of steam generators specified in Table 4.4-1.

4.4.5.2 Steam Generator Tube Sample Selection and Inspection - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Tables 4.4-2 and 4.4-3. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in specification 4.4.5.3 and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 4.4.5.4. The tubes selected for each inservice inspection shall include at least 3% of the total number of tubes in all steam generators and at least 20% of each type of installed sleeves; the tubes selected for these inspections shall be selected on a random basis except:

- a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas.
- b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

**MARKUP OF CURRENT ANO-2 TECHNICAL SPECIFICATIONS**

**(FOR INFORMATION ONLY)**

## REACTOR COOLANT SYSTEM

### STEAM GENERATORS

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Note: The surveillance requirements of Specification 3.4.5 do not apply to the special steam generator tube inspection to be performed during the ~~2P99~~ 2P00 outage scheduled for the Summer 2000. ~~to begin in November 1999.~~ The scope and expansion criteria for the inspection are specified in correspondence to the NRC submitted under separate cover. The scope and expansion criteria shall be approved by the NRC prior to entering Mode 4. The results of the special inspection shall be reviewed by the Plant Safety Committee prior to entering Mode 4 and reported to the NRC within 30 days of entering Mode 4.

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