July 14, 2000

Mr. Craig G. Anderson
Vice President, Operations ANO
Entergy Operations, Inc.
1448 S. R. 333
Russellville, AR 72801

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2 (ANO-2), REVIEW STATUS OF THE STEAM GENERATOR RISK-INFORMED AMENDMENT REQUEST (TAC NO. MA8418)

Reference: Letter dated June 23, 2000, from Mr. Stuart A. Richards of the U.S. Nuclear Regulatory Commission to Mr. Craig G. Anderson of Entergy Operations, Inc. Titled, "Arkansas Nuclear One, Unit 2, Review Status of The Risk-Informed Amendment Request and the Staff's Position on Steam Generator Operability (TAC No. MA8418)," Accession No. ML003726321.

Dear Mr. Anderson:

During a telephone call with you on July 13, 2000, the NRC staff summarized a number of outstanding technical issues associated with your March 9, 2000, risk-informed amendment request regarding the steam generators at ANO-2. The NRC staff has identified concerns regarding your ability to accurately predict the condition of the steam generator tubes at the end-of-cycle. Probability of detection (POD) distributions and crack growth rate distributions are two explicit variables that your staff uses in their model to predict the structural integrity of steam generator tubes and to determine allowable run times between inspections. Implicit in this model is an assumption for a crack initiation rate. Based on the review conducted by the NRC staff, it appears that your model predicts behavior different from the results obtained during recent inspections.

In addition, Entergy Operations, Inc. proposed crediting improvements in the POD for the steam generator tube inspections performed during the November 1999 (2P99) mid-cycle outage. You indicated that improvements were achieved primarily through the use of a new calibration standard, along with the site specific training received by the inspection analysts. Based on a review of your eddy current testing data and inspection results, it appears that the information provided is insufficient to base a conclusion that a significant improvement in POD was achieved.

Finally, the NRC staff has expressed concerns with your explanation for the significant increase in the number of indications observed in the "B" steam generator during the 2P99 mid-cycle outage. Steam generator tube inspections identified approximately three times the number of indications than were predicted for the "B" steam generator. This inspection transient could be an indication that the steam generators have experienced a change (e.g., accelerated degradation), which could invalidate predictions of future performance that are based on past

experiences. You indicated that the inspection transient was the result of an improved POD. As mentioned above, the NRC staff is not in a position to agree with that conclusion.

As a result, the NRC staff is unable to quantify the reliability of steam generator tube structural integrity during normal operations or during a secondary side depressurization in accordance with Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis." Therefore, the NRC staff is not currently in a position to support approval of your March 9, 2000, risk-informed amendment request for ANO-2. We intend to issue our safety evaluation, and other documentation as required by NRC regulations to document our decision on your risk-informed amendment request, in approximately one week. Based on the information discussed during our telephone conversation, you indicated that Entergy will conduct a shutdown of ANO-2 on or before July 21, 2000, and perform steam generator tube inspections to confirm your assessment that the unit's steam generator tubes will continue to satisfy structural integrity requirements through the end of the current operating cycle.

The NRC staff notes that steam generator tube degradation is a time-dependent mechanism. Based on your continued responsibility to demonstrate steam generator operability and our review of information you provided, the NRC staff continues to accept your February 11, 2000, Operational Assessment in the near term and its conclusion that the tube structural integrity of the ANO-2 steam generators satisfies your plant's licensing basis. The NRC staff has accepted your verbal commitment to conduct a plant shutdown on or before July 21, 2000, to perform steam generator tube inspections. Your cooperation in this matter is greatly appreciated.

If you have any additional questions please feel free to call Tom Alexion at 301-415-1326.

Sincerely,

/RA/

John A. Zwolinski, Director
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-368

cc: See next page

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John A. Zwolinski, Director
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