June 29, 1999

Mr. C. Randy Hutchinson
Vice President, Operations ANO
Entergy Operations, Inc.
1448 S. R. 333
Russellville, AR 72801

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT NO. 2 - ISSUANCE OF AMENDMENT RE: POSITION INDICATOR CHANNELS AND COMPONENT TABLE RELOCATION (TAC NO. MA2495)

Dear Mr. Hutchinson:

The Commission has issued the enclosed Amendment No. 208 to Facility Operating License No. NPF-6 for the Arkansas Nuclear One, Unit No. 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated August 6, 1998 (2CAN089802), as supplemented by letter dated May 18, 1999 (2CAN059906).

The amendment approves a change to TS 3.1.3.2, "Position Indicator Channels - Operating," which adopts requirements that are consistent with NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants." In addition, the amendment approves the relocation of TS Table 3.8-1, "Containment Penetration Conductor Overcurrent Protective Devices," to licensee control procedures in accordance with the guidance provided in Generic Letter 91-08, "Removal of Component Lists From Technical Specifications."

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

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Sincerely,
ORIGINAL SIGNED BY

M. Christopher Nolan, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosures: 1. Amendment No. 208 to NPF-6
2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 208
License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Entergy Operations, Inc. (the licensee) dated August 6, 1998, as supplemented by letter dated May 18, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-6 is hereby amended to read as follows:

   2. Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through amendment No. 208 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance. In addition, the licensee shall include discussions of the design features and references to operating procedures for the containment penetration conductor overcurrent protective devices covered by TS 3.8.2.5 in the next Updated Final Safety Analysis Report submitted to the NRC, pursuant to 10 CFR 50.71(e), as was described in the licensee's application dated August 6, 1998, as supplemented by letter dated May 18, 1999, and the staff's safety evaluation dated June 29, 1999.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Gramm

Robert A. Gramm, Chief, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: June 29, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 208

FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
3/4 1-20	3/4 1-20
3/4 8-11	3/4 8-11
3/4 8-13	---
3/4 8-14	---
3/4 8-15	---
3/4 8-15a	---
3/4 8-16	---
3/4 8-16a	---
3/4 8-17	---
3/4 8-17a	---
3/4 8-18	---
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3/4 8-29	---
3/4 8-32	---

POSITION INDICATOR CHANNELS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.3.2 At least two of the following three CEA position indicator channels shall be OPERABLE for each CEA:

a. CEA Reed Switch Position Transmitter (RSPT 1) with the capability of determining the absolute CEA positions within 5 inches,

b. CEA Reed Switch Position Transmitter (RSPT 2) with the capability of determining the absolute CEA positions within 5 inches, and

c. The CEA pulse counting position indicator channel.

APPLICABILITY: MODES 1 and 2.

ACTION:

With any CEA having only one of the above required CEA position indicator channels OPERABLE, within 6 hours either:

a. Restore at least one of the inoperable position indicator channels to OPERABLE status, or

b. Be in at least HOT STANDBY, or

c. Position the CEA with the inoperable position indicators at its fully withdrawn or fully inserted position while maintaining the requirements of Specifications 3.1.3.1, 3.1.3.5, and 3.1.3.6. Operation may then continue provided the CEA with the inoperable position indicators is maintained fully withdrawn or fully inserted, except during surveillance testing pursuant to the requirements of Specification 4.1.3.1.2, and the CEA position is verified at least once per 12 hours thereafter by its "Full Out" or "Full In" limit.

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.2.5 Primary and backup containment penetration conductor overcurrent protective devices associated with each containment electrical penetration circuit shall be OPERABLE. The scope of these protective devices excludes those circuits for which credible fault currents would not exceed the electrical penetration design rating.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more of the containment penetration conductor overcurrent protective devices inoperable:

a. De-energize the circuit(s) by tripping the associated backup circuit breaker within 72 hours and verifying the backup circuit breaker to be tripped at least once per 7 days thereafter, or

b. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.5 All containment penetration conductor overcurrent protective devices shall be demonstrated OPERABLE in accordance with the manufacturers' recommendations:

a. At least once per 18 months:

1. For at least one 6.9 kv reactor coolant pump circuit, such that all reactor coolant pump circuits and their associated backup circuits are demonstrated OPERABLE at least each 72 months, by performance of:

   (a) A CHANNEL CALIBRATION of the associated protective relays, and

   (b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed.

2. For each type of 480 volt air frame protective device, such that all 480 volt air frame protective devices are demonstrated OPERABLE at least once each N x 18 months, where N is the number of devices of each type, by performance of:

   (a) A calibration of the protective relays for devices that are actuated by protective relays which includes verification of the range, accuracy, and alarm/trip capability, and

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 208 TO

FACILITY OPERATING LICENSE NO. NPF-6

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NO. 2

DOCKET NO. 50-368

1.0 INTRODUCTION

By letter dated August 6, 1998 (2CAN089802), as supplemented by letter dated May 18, 1999 (2CAN059906), Entergy Operations, Inc. (the licensee), submitted a request for changes to the Arkansas Nuclear One, Unit No. 2 (ANO-2), Technical Specifications (TSs). The requested changes would revise TS 3.1.3.2, "Reactivity Control Systems, Position Indicator Channels - Operating," to adopt requirements that are consistent with NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants." In addition, the proposed change would relocate TS Table 3.8-1, "Containment Penetration Conductor Overcurrent Protective Devices," to licensee control procedures in accordance with the guidance provided in Generic Letter 91-08, "Removal of Component Lists From Technical Specifications."

The May 18, 1999 (2CAN0599065), letter provided clarifying information that did not change the scope of the original application and the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

2.1 Control Element Assembly Position Indication

Technical Specification 3.1.3.2, "Reactivity Control Systems, Position Indicator Channels - Operating," requires at least two of the three stated methods of verifying indication of control element assembly (CEA) position to be operable. The Action statement for TS 3.1.3.2 provides guidance for conditions in which a single CEA per CEA group has less then two means of indicating CEA position. However, Limiting Condition For Operation (LCO) 3.0.3 would apply if two CEAs within a CEA group had less then two means of indicating CEA position as this condition is not addressed in TS 3.1.3.2. The proposed change would revise the Action Statement for TS 3.1.3.2 to address CEA position indication on an individual CEA basis with requirements that would not depend on the associated CEA group. In addition, TS 3.1.3.2, Action c, would be revised to include references to TS 3.1.3.1, "Reactivity Control Systems, CEA Position," and TS 3.1.3.5, "Reactivity Control Systems, Shutdown CEA Insertion Limits," which provide limitations on the positioning of CEAs.

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The axial position of shutdown and regulating CEAs is indicated by two separate and independent systems, which are the plant computer CEA pulse counting position indication system and the reed switch position transmitter (RSPT) indication system. The pulse counting position indication system counts the commands sent to the CEA gripper coils from the control element drive mechanism control system (CEDMCS) that moves the CEAs. There is one step counter for each group of CEAs. Individual CEAs in a group all receive the same signal to move and should, therefore, all be at the same position indicated by the group step counter for that group. The pulse counting position indication system is considered highly precise because one step equals 3/4 inch of CEA movement. If a CEA does not move one step for each command signal, the step counter will still count the command and incorrectly reflect the position of the CEA.

The RSPT indication system provides a highly accurate indication of actual CEA position, but at a lower precision than the step counter. The two reed switch stacks (RSPT #1 and RSPT #2) are mounted outside the reactor coolant system (RCS) pressure boundary, along the upper pressure housing. The individual reed switches are actuated by the permanent magnet attached to the top of the CEA extension shaft. No mechanical or electrical connections exist between the permanent magnet and the reed switches, only magnetic lines of flux that penetrate the RCS pressure boundary to actuate the switches. This system is based on inductive analog signals from a series of reed switches spaced along a tube with a center to center distance of 1.5 inches, which equates to two steps.

In addition to RSPT #1 and RSPT #2, a pair of reed switches are positioned for the lower electrical limit (LEL) and the upper electrical limit (UEL) for each CEA. These reed switches are positioned at the fully inserted and the fully withdrawn positions. The LELs and the UELs are referred to by TS 3.1.3.2, Action c, and its Bases as the "Full In" and "Full Out" limits, respectively. These limits provide a position indication system to the operator in the form of a light at the CEA control panel when the CEA is at the respective positions. The TS allows the use of the LELs and UELs as an independent means of determining CEA position. However, they are allowed if only two of the required CEA position indications for an individual CEA are inoperable and the associated CEA is positioned to the associated electrical limit.

During normal 100 percent power operation, the CEAs are fully withdrawn at the programmed insertion limit. The programmed insertion limit was developed due to the concern with CEA guide tube/finger tip wear concerns. The programmed insertion limit is discussed in a letter dated June 16, 1978, from Robert E. Martin of the NRC to the licensee. The programmed insertion limit starts the operating cycle with all the CEAs fully withdrawn or at the UEL. At approximately every 90 effective full power days (EFPD) throughout the cycle, the CEAs are inserted an additional step (one step equals 3/4 inch) until they are three steps inserted. At approximately every 90 EFPD interval thereafter, the CEAs are withdrawn a step. This process is continued until the CEAs are again at their UEL. The process is then repeated until the particular operating cycle is over. This periodic movement of the CEAs allows the CEA finger tips to be inserted inside the CEA guide tube varying amounts and, thus, spreading the wear pattern over a larger surface area. Currently, TS 3.1.3.2, Action c, requires that all CEAs associated with the group be placed at the "full in" or "full out" position when an individual CEA in the group has only one of the required means of position indication. This action prevents the use of the programmed insertion limit as previously discussed.

The NRC staff has reviewed the TSs covering CEA position and the information provided by the licensee supporting the proposed change. The staff has determined that removing references to the CEA group from the Action statement for TS 3.1.3.2 would prevent an unnecessary entry into LCO 3.0.3 if a second CEA in a CEA group had only one of the required means of position indication. In addition, the proposed change would allow the other CEAs in the respective group to follow the programmed insertion limit, as applicable, if a single CEA had only one of the required means of position indication. The current TS has references to the CEA group due to the design of the CEA pulse counting position indication system, which counts the movement commands sent to the CEA group rather then the individual CEA. However, the staff has determined that the controls specified in TS 3.1.3.1, TS 3.1.3.5, and TS 3.1.3.6 are sufficient to control the position of CEAs and CEA groups. In addition, the RSPT indication system provides two separate reed switch stacks that are capable of providing position indication on an individual CEA basis. Thus, when combined with the LEL or UEL reed switch as specified in the Action statement, at least one means of CEA position indication based on CEA specific reed switches will be available. Therefore, the requirements for CEA position indication can be controlled on an individual CEA basis without adversely effecting the controls on CEA position. The TS requirements for individual CEA position indication remain unchanged. This change is consistent with NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants." Based on the above, the staff concludes that the proposed change is acceptable.

2.2 Containment Penetration Conductor Overcurrent Protective Devices

Technical Specification 3.8.2.5, "Electrical Power Systems, Containment Penetration Conductor Overcurrent Protective Devices," specifies the operability requirements for the containment electrical penetration circuit overcurrent protective devices. TS Table 3.8-1 provides a list of containment penetration conductor overcurrent protective devices and is referenced to describe the individual plant components covered by the requirements of TS 3.8.2.5. The licensee has proposed the removal of TS Table 3.8-1. The proposed change would control this information in the appropriate ANO-2 plant procedures. The licensee has indicated that all of the containment penetration conductor overcurrent protective devices listed in TS Table 3.8-1 have been verified to be listed in ANO-2 plant procedures. These procedures are subject to the change control provisions listed in the Administrative Controls Section of the ANO-2 Technical Specifications. In addition, the licensee has committed to revise the Updated Final Safety Analysis Report (UFSAR) to include a discussion of the design features associated with the containment penetration conductor overcurrent protective devices including references to plant operating procedures. The licensee has proposed the following modified statement for the LCO under TS 3.8.2.5 to support the removal of references to Table 3.8-1:

> Primary and backup containment penetration conductor overcurrent protective devices associated with each containment electrical penetration circuit shall be OPERABLE. The scope of these protective devices excludes those circuits for which credible fault currents would not exceed the electrical penetration design rating.

In addition, the licensee has proposed to revise the TS 3.8.2.5, Action statement discussion to remove the reference to Table 3.8-1. The surveillance requirement has been revised to state the following:

All containment penetration conductor overcurrent protective devices shall be demonstrated OPERABLE in accordance with the manufacturers' recommendations.

The surveillance requirement reference to "All containment penetration conductor overcurrent protective devices" is consistent with the format proposed in Generic Letter 91-08, Enclosure 2, and is intended to be inclusive of the set of components defined in LCO 3.8.2.5 as "Primary and backup containment penetration conductor overcurrent protective devices." The licensee has proposed changes to the above TS that are consistent with the guidance provided in Generic Letter 91-08. Finally, the licensee has confirmed that all of the components for which the TS requirements apply are adequately identified and controlled by plant procedures.

On the basis of its review, the staff finds that the proposed change to the TS for ANO-2 is primarily an administrative change that does not alter the requirements set forth in the existing TS. The removal of the component list is acceptable because it does not alter the existing TS requirement or those components to which it applies and the table is not required to be in the TS pursuant to 10 CFR 50.36. Overall, this change will allow the licensee to make corrections and updates to the list of components for which this TS requirement applies, under the provisions that control changes to plant procedures as specified in the Administrative Controls Section of the TS and in accordance with 10 CFR 50.59. Therefore, the staff finds that the proposed TS change is acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Arkansas State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (63 FR 56245, October 21, 1998). Accordingly, the amendment 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 amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the

Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Chris Nolan

Date: June 29, 1999