

January 31, 2001

Mr. Craig G. Anderson
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:
RELOCATION OF BORATION SYSTEMS TECHNICAL SPECIFICATIONS TO
THE TECHNICAL REQUIREMENTS MANUAL (TAC NO. MB0610)

Dear Mr. Anderson:

The Commission has issued the enclosed Amendment No. 229 to Facility Operating License No. NPF-6 for Arkansas Nuclear One, Unit No. 2 (ANO-2). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated November 30, 2000.

The amendment relocates the boration systems requirements from the TSs to the Technical Requirements Manual.

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.

Sincerely,

/RA/

Thomas W. Alexion, 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. 229 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

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Docket No. 50-368

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1. Amendment No. 229 to NPF-6
2. Safety Evaluation

cc w/encls: See next page

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cc:

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February 2000



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. 229
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 November 30, 2000, 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.

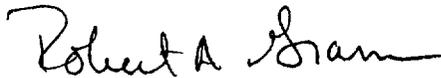
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-6 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 229, 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 60 days from the date of issuance (including issuance of the associated relocated pages for the Technical Requirements Manual).

FOR THE NUCLEAR REGULATORY COMMISSION



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: January 31, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 229

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.

<u>Remove</u>	<u>Insert</u>
IV	IV
3/4 1-6	3/4 1-6
3/4 1-7	---
3/4 1-8	---
3/4 1-8a	---
3/4 1-9	---
3/4 1-10	---
3/4 1-11	---
3/4 1-12	---
3/4 1-13	---
3/4 1-14	---
3/4 1-15	---
3/4 1-16	---
B 3/4 1-2	B 3/4 1-2
B 3/4 1-3	B 3/4 1-3

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REACTIVITY CONTROL SYSTEMS

MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

3.1.1.5 The Reactor Coolant System lowest operating loop temperature (T_{avg}) shall be $\geq 525^{\circ}\text{F}$ when the reactor is critical.

APPLICABILITY: MODES 1 and 2#*.

ACTION:

With a Reactor Coolant System operating loop temperature (T_{avg}) $< 525^{\circ}\text{F}$, restore T_{avg} to within its limit within 15 minutes or be in HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.1.5 The Reactor Coolant System temperature (T_{avg}) shall be determined to be $\geq 525^{\circ}\text{F}$:

- a. Within 15 minutes prior to achieving reactor criticality, and
- b. At least once per 30 minutes when the reactor is critical and the Reactor Coolant System T_{avg} is less than 535°F .

#With $K_{eff} \geq 1.0$.

*See Special Test Exception 3.10.5.

REACTIVITY CONTROL SYSTEMS

BASES

3/4.1.1.5 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 525°F. This limitation is required to ensure 1) the moderator temperature coefficient is within its analyzed temperature range, 2) the protective instrumentation is within its normal operating range, 3) the pressurizer is capable of being in an OPERABLE status with a steam bubble, and 4) the reactor pressure vessel is above its minimum RT_{NDT} temperature.

REACTIVITY CONTROL SYSTEMS

BASES

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of CEA misalignments are limited to acceptable levels.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met.

The ACTION statements applicable to a stuck or untrippable CEA or a large misalignment (≥ 19 inches) of two or more CEAs, require a prompt shutdown of the reactor since either of these conditions may be indicative of a possible loss of mechanical functional capability of the CEAs and in the event of a stuck or untrippable CEA, the loss of SHUTDOWN MARGIN. CEAs that are confirmed to be inoperable due to problems other than addressed by ACTION a of Specification 3.1.3.1 will not impact SHUTDOWN MARGIN as long as their relative positions satisfy the applicable alignment requirements.

For small misalignments (< 19 inches) of the CEAs, there is 1) a small effect on the time dependent long term power distributions relative to those used in generating LCOs and LSSS setpoints, 2) a small effect on the available SHUTDOWN MARGIN, and 3) a small effect on the ejected CEA worth used in the safety analysis. Therefore, the ACTION



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 229TO

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 November 30, 2000, 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 relocate the boration systems requirements from the TSs to the Technical Requirements Manual (TRM).

2.0 BACKGROUND

Section 182a of the Atomic Energy Act of 1954, as amended, requires applicants for nuclear power plant operating licenses to include TSs as a part of the license. The Nuclear Regulatory Commission's (NRC or the Commission) regulatory requirements related to the content of TSs are set forth in Title 10 of the Code of Federal Regulations (10 CFR), Section 50.36, which requires that the TSs include items in five specific categories, including (1) safety limits, limiting safety system settings and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls.

10 CFR 50.36 sets forth the following four criteria to be used in determining whether an LCO is required to be included in the TSs:

- (1) Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary (RCPB);
- (2) A process variable, design feature, or operating restriction that is an initial condition of a design basis accident (DBA) or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;
- (3) A structure, system, or component (SSC) that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; or

- (4) An SSC which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Therefore, existing TS LCOs and related SRs that fall within or satisfy any of these criteria must be retained in the TSs, while those TS requirements that do not fall within or satisfy these criteria may be relocated to other, licensee-controlled documents.

3.0 DISCUSSION

The proposed change relocates all of TS Section 3/4.1.2, Boration Systems, and the associated Bases, to the TRM. These sections are:

- TS 3/4.1.2.1 - Boration Systems, Flow Paths - Shutdown
- TS 3/4.1.2.2 - Boration Systems, Flow Paths - Operating
- TS 3/4.1.2.3 - Boration Systems, Charging Pump - Shutdown
- TS 3/4.1.2.4 - Boration Systems, Charging Pumps - Operating
- TS 3/4.1.2.5 - Boration Systems, Boric Acid Makeup Pumps - Shutdown
- TS 3/4.1.2.6 - Boration Systems, Boric Acid Makeup Pumps - Operating
- TS 3/4.1.2.7 - Boration Systems, Borated Water Sources - Shutdown
- TS 3/4.1.2.8 - Boration Systems, Borated Water Sources - Operating
- Bases 3/4.1.2 - Boration Systems

The staff also notes that the boration systems listed above are not included in NUREG-1432, Volume 1, Revision 1, "Standard Technical Specifications, Combustion Engineering Plants," April 1995. Therefore, the licensee's proposed change is consistent with NUREG-1432. In addition, similar changes have been approved by the NRC on other plants, including the South Texas Project, Units 1 and 2, in Amendment Nos. 79 and 68, on September 5, 1995.

4.0 EVALUATION

The boration systems listed above, which are part of the chemical and volume control system (CVCS), are designed to maintain and control the chemical neutron absorber (boron) concentration in the reactor coolant system (RCS) to ensure adequate shutdown margin. The current TSs for these CVCS boration systems have requirements for sources of borated water, flow paths to inject this borated water into the RCS, and pumps to provide the necessary flow pressure. Although the boration systems provide a means of reactivity control through boron injection, none of these systems are taken credit for in any DBA or transient analysis.

The CVCS boration systems listed above are not installed instrumentation that is used to detect and indicate in the control room a significant abnormal degradation of the RCPB. In addition, they are not process variables, design features, or operating restrictions that are an initial condition of the type of DBAs or transient analyses discussed in the background section (above). Shutdown margin is a process variable which is an initial condition of various DBAs and transient analyses; however, operability of the CVCS is not. Limitations on shutdown margin are established and maintained by other TSs not affected by this proposed change.

The CVCS boration systems listed above are not SSCs that are part of the primary success path that functions or actuates to mitigate a DBA or transient that either assumes the failure of

or presents a challenge to the integrity of a fission product barrier. Control and maintenance of boron concentration in the RCS is not part of the primary success path for mitigation of a DBA or transient. This function is provided by either the emergency core cooling system or through maintenance of shutdown margin, as established by TSs not affected by the proposed change, which is adequate for the required safety function.

The CVCS boration systems listed above are not credited in the initiation or mitigation of any DBAs. Therefore, operating experience has not shown them to be significant to public health and safety.

Based on the above, the staff finds that the CVCS boration systems listed above do not meet any of the 10 CFR 50.36 criteria for inclusion in the TSs. Therefore, they may be removed from the TSs.

The licensee indicated that the boration systems contained in TS 3/4.1.2, with their LCOs, associated Actions, SRs, Figures, and Bases will be relocated to the TRM following NRC approval of their amendment request. The licensee further indicated that no changes to these specifications, other than the relocation, are proposed in their request.

The ANO-2 Safety Analysis Report (SAR), Section 13.8.2, states that the TRM is administered as part of the SAR, changes to the TRM are subject to the criteria of 10 CFR 50.59, and administrative controls for processing TRM changes are included in the site procedure. Therefore, the staff finds that sufficient regulatory controls exist for the TRM.

Accordingly, the staff has concluded that the requirements associated with the boration systems in TS 3/4.1.2 may be relocated outside the TSs because (1) the 10 CFR 50.36 TS inclusion criteria are not applicable, (2) these requirements will be appropriately relocated to the licensee's TRM, and (3) sufficient regulatory controls exist for the TRM.

5.0 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.

6.0 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 change SRs. 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 (65 FR 81916, dated December 27, 2000). 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.

7.0 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: T. Alexion

Date: January 31, 2001