

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

April 16, 1997

SUBJECT: ISSUANCE OF AMENDMENT NO. 181 TO FACILITY OPERATING LICENSE
NO. NPF-6 - ARKANSAS NUCLEAR ONE, UNIT NO. 2 (TAC NO. M97534)

Dear Mr. Hutchinson:

The Commission has issued the enclosed Amendment No. 181 to Facility Operating License No. NPF-6 for the Arkansas Nuclear One, Unit No. 2 (ANO-2). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 19, 1996.

The amendment deletes the specific value for the total reactor coolant system volume from the Design Features section of the TSs.

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

Sincerely,

ORIGINAL SIGNED BY:

George Kalman, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosures: 1. Amendment No. 181 to NPF-6
2. Safety Evaluation

cc w/encls: See next page

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C. Grimes

E. Adensam (EGA1)

W. Beckner

PUBLIC

C. Hawes

G. Hill (2)

G. Kalman

L. Hurley, RIV

PD4-1 r/f

ACRS

J. Dyer, RIV

J. Kilcrease, RIV f/r

T. Harris (TLH3)

11/1
DFO

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

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Mr. C. Randy Hutchinson
Entergy Operations, Inc.

Arkansas Nuclear One, Unit 2

cc:

Executive Vice President
& Chief Operating Officer
Entergy Operations, Inc.
P. O. Box 31995
Jackson, MS 39286-199

Vice President, Operations Support
Entergy Operations, Inc.
P. O. Box 31995
Jackson, MS 39286-1995

Director, Division of Radiation
Control and Emergency Management
Arkansas Department of Health
4815 West Markham Street, Slot 30
Little Rock, AR 72205-3867

Wise, Carter, Child & Caraway
P. O. Box 651
Jackson, MS 39205

Winston & Strawn
1400 L Street, N.W.
Washington, DC 20005-3502

Manager, Rockville Nuclear Licensing
Framatone Technologies
1700 Rockville Pike, Suite 525
Rockville, MD 20852

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 310
London, AR 72847

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

County Judge of Pope County
Pope County Courthouse
Russellville, AR 72801



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

ENERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 181
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 December 19, 1996, 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. 181, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



George Kalman, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: April 16, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 181

FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Revise the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. The corresponding overleaf page is also provided to maintain document completeness.

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DESIGN FEATURES

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.

5.6 FUEL STORAGE

CRITICALITY - SPENT FUEL

5.6.1.1 The spent fuel racks are designed and shall be maintained so that the calculated effective multiplication factor is no greater than 0.95 (including all known uncertainties) when the pool is flooded with unborated water.

CRITICALITY - NEW FUEL

5.6.1.2 The new fuel storage racks are designed and shall be maintained with a nominal 25.0 inch center-to-center distance between new fuel assemblies such that K_{eff} will not exceed 0.98 when fuel having a maximum enrichment of 4.1 weight percent U-235 is in place and aqueous foam moderation is assumed and K_{eff} will not exceed 0.95 when the storage area is flooded with unborated water. The calculated K_{eff} includes a conservative allowance of 2.1% $\Delta k/k$ for uncertainties.

DRAINAGE

5.6.2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 399' 10½".

CAPACITY

5.6.3 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 988 fuel assemblies.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMITS

5.7.1 The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.

TABLE 5.7-1

COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
Reactor Coolant System	500 system heatup and cooldown cycles at rates $\leq 100^\circ\text{F/hr}$.	Heatup cycle - T_{avg} from $< 200^\circ\text{F}$ to $\geq 545^\circ\text{F}$; cooldown cycle - T_{avg} from $\geq 545^\circ\text{F}$ to $\leq 200^\circ\text{F}$.
	500 pressurizer heatup and cooldown cycles at rates $\leq 200^\circ\text{F/hr}$.	Heatup cycle - Pressurizer temperature from $< 200^\circ\text{F}$ to $\geq 653^\circ\text{F}$; cooldown cycle - Pressurizer temperature from $\geq 653^\circ\text{F}$ to $\leq 200^\circ\text{F}$.
	10 hydrostatic testing cycles.	RCS pressurized to 3110 psig with RCS temperature $> 60^\circ\text{F}$ above the most limiting components' NDTT value.
	200 leak testing cycles.	RCS pressured to 2250 psia with RCS temperature greater than minimum for hydrostatic testing, but less than minimum RCS temperature for criticality.
	400 reactor trip cycles.	Trip from 100% of RATED THERMAL POWER.
	40 turbine trip cycles with delayed reactor trip.	Turbine trip (total load rejection) from 100% of RATED THERMAL POWER followed by resulting reactor trip.
	200 seismic stress cycles.	Subjection to a seismic event equal to one half the design basis earthquake (DBE).



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO.181 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 December 19, 1996, Entergy Operations, Inc. (the licensee) submitted a request for changes to the Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specifications (TSs). The requested changes would delete the specific value for the total reactor coolant system (RCS) volume from the Design Features section in the TSs, Section 5.4.2. The RCS volume information is also currently contained in the ANO-2 Safety Analysis Report (SAR) and would continue to be subject to 10 CFR 50.59, "Changes, tests, and experiments." Further, the proposed change to the technical specifications is consistent with NUREG-1432, Revision 1, improved "Standard Technical Specifications for Combustion Engineering Plants" in that the improved standard technical specifications (ISTS) do not contain a value for RCS volume in the new, design features section.

2.0 EVALUATION

Section 182a of the Atomic Energy Act (the "Act") requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The Commission's regulatory requirements related to the content of TSs are set forth in 10 CFR 50.36. That regulation 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; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in a plant's TSs.

The Commission has provided guidance for the contents of TSs in its "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" ("Final Policy Statement"), 58 FR 39132 (July 22, 1993), in which the Commission indicated that compliance with the Final Policy Statement satisfies Section 182a of the Act. In particular, the Commission indicated that certain items could be relocated from the TSs to licensee-controlled documents, consistent with the standard enunciated in *Portland General*

Electric Co. (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979). In that case, the Atomic Safety and Licensing Appeal Board indicated that "technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety."

The four criteria defined by 10 CFR 50.36 for determining whether particular limiting conditions for operation are required to be included in the TSs, are as follows: (1) installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary; (2) a process variable, design feature, or operating restriction that is an initial condition of a design basis accident 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 that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (4) a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

While the content of the TSs design features and administrative controls are specified in 10 CFR 50.36(c)(4) and 10 CFR 50.36(c)(5), respectively, particular details of the design features and administrative controls may be relocated to licensee-controlled documents where 10 CFR 50.59 or comparable regulatory controls exist. With respect to design features, 10 CFR 50.36(c)(4) requires that design features to be included in TSs are those features of the facility such as materials of construction and geometric arrangements, which, if altered or modified, would have a significant effect on safety and are not covered as TS safety limits, limiting safety system settings, limiting conditions for operation, or surveillance requirements.

The current Design Features, Section 5.4.2 lists the total water and steam volume of the reactor coolant system as $10,295 \pm 400$ cubic feet at a nominal T avg of 545 degrees fahrenheit. For facilities licensed during the time of the ANO-2 license, the RCS volume was thought to be significant and controlling and therefore, was included in the TSs. While the value is significant, it is an input parameter to the accident analyses for ANO-2 and it is these analyses and their results which are controlling. Therefore, including the volume value in the design features section has little additional safety benefit.

The licensee is changing the facility RCS because of the need to plug leaking or faulted steam generator tubes. The RCS volume value in the ANO-2 TSs minus the uncertainties allows for approximately 13% average length steam generator tubes plugged. If the steam generator tube plugging exceeds 13%, ANO would fall outside of the design value requirements although the acceptable accident analysis may include provision for a greater number of tubes plugged. Therefore, in order to accommodate greater than 13% steam generator tube plugging, a change in the TS RCS volume would be needed.

For operating licenses issued subsequently to ANO-2, RCS volume figures were relegated to the SAR. In the case of the ANO-2 SAR, RCS volume information appears in SAR Tables 5.1-1, 5.1-2, 5.5-2, 5.5-6, and 6.2-8. Any plant conditions that could cause the RCS volume to fall outside of the design values as described in the SAR, would require evaluation of the proposed change to facility in accordance with 10 CFR 50.59 provisions. The accident analyses are also detailed in the SAR and are subject to 10 CFR 50.59 provisions. If any change involves an unreviewed safety question, the licensee must submit an application in accordance with 10 CFR 50.90 and obtain prior NRC approval for the change.

Therefore, on the basis that the RCS volume is not specifically required to be included in TSs pursuant to 10 CFR 50.36(c) and any change to the SAR would be subject to 10 CFR 50.59 evaluation, the proposed change to remove the RCS volume from the Design Features section of the TSs 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 deletes a reference to the reactor coolant system volume in the Design Features of the TSs. The NRC staff determined that the amendment does not increase the amounts or changes the types of any offsite effluent, and that there is no increase in individual or cumulative occupational radiation exposure. The Commission previously issued a proposed finding that the amendment involved no significant hazards consideration, and there has been no public comment on such finding (62 FR 4348). 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: G. Kalman

Date: April 16, 1997