

May 22, 1995

Mr. Jerry W. Yelverton
Vice President, Operations ANO
Entergy Operations, Inc.
Route 3 Box 137G
Russellville, AR 72801

SUBJECT: ISSUANCE OF AMENDMENT NO. 181 TO FACILITY OPERATING LICENSE NO. DPR-51 - ARKANSAS NUCLEAR ONE, UNIT NO. 1 (TAC NO. M87445)

Dear Mr. Yelverton:

The Commission has issued the enclosed Amendment No. 181 to Facility Operating License No. DPR-51 for the Arkansas Nuclear One, Unit No. 1 (ANO-1). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated July 22, 1993.

The amendment revises the value of the ANO-1 reactor building volume as listed in the TSs. The amendment was submitted after a more precise calculation of the reactor building volume was completed.

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. 50-313

Enclosures: 1. Amendment No. 181 to DPR-51
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION

Docket File GKalman
PUBLIC OGC
PDIV-1 R/F GHill (2)
EAdensam CGrimes
WBeckner RLobel
PNoonan ACRS (4)
ABeach, RIV OPA
LHurley, RIV OC/LFDCB

Document Name: AR187445.AMD

OFC	LA:PD4-1 <i>DM</i>	PM:PD4-1	OGC
NAME	PNoonan	GKalman:mk	<i>DM</i>
DATE	5/18/95	5/18/95	5/19/95
COPY	YES/NO	YES/NO <i>7/20/95</i>	YES/NO

NRC FILE CENTER COPY

OFFICIAL RECORD COPY
9506020275 950522
PDR ADDCK 05000313
P PDR

DF01



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 22, 1995

Mr. Jerry W. Yelverton
Vice President, Operations ANO
Entergy Operations, Inc.
Route 3 Box 137G
Russellville, AR 72801

SUBJECT: ISSUANCE OF AMENDMENT NO. 181 TO FACILITY OPERATING LICENSE NO.
DPR-51 - ARKANSAS NUCLEAR ONE, UNIT NO. 1 (TAC NO. M87445)

Dear Mr. Yelverton:

The Commission has issued the enclosed Amendment No. 181 to Facility Operating License No. DPR-51 for the Arkansas Nuclear One, Unit No. 1 (ANO-1). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated July 22, 1993.

The amendment revises the value of the ANO-1 reactor building volume as listed in the TSs. The amendment was submitted after a more precise calculation of the reactor building volume was completed.

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,

A handwritten signature in black ink that reads "George Kalman".

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

Docket No. 50-313

Enclosures: 1. Amendment No. 181 to DPR-51
2. Safety Evaluation

cc w/encls: See next page

Mr. Jerry W. Yelverton
Entergy Operations, Inc.

Arkansas Nuclear One, Unit 1

cc:

Mr. Harry W. Keiser, Executive Vice
President & Chief Operating Officer
Entergy Operations, Inc.
P. O. Box 31995
Jackson, MS 39286-1995

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

Ms. Greta Dicus, Director
Division of Radiation Control
and Emergency Management
Arkansas Department of Health
4815 West Markham Street
Little Rock, AR 72205-3867

Mr. Robert B. McGehee
Wise, Carter, Child & Caraway
P. O. Box 651
Jackson, MS 39205

Mr. Nicholas S. Reynolds
Winston & Strawn
1400 L Street, N.W.
Washington, DC 20005-3502

Mr. Robert B. Borsum, Manager
Rockville Nuclear Licensing
B&W Nuclear 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. 50-313

ARKANSAS NUCLEAR ONE, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 181
License No. DPR-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated July 22, 1993, 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.

9506020283 950522
PDR ADOCK 05000313
P PDR

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. DPR-51 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: May 22, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 181

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Replace the following page of the Appendix "A" Technical Specifications with the attached page. The revised page is identified by Amendment number and contains a vertical line indicating the area of change.

REMOVE PAGE

112

INSERT PAGE

112

5.2 REACTOR BUILDING

Applicability

Applies to those design features of the reactor building relating to operational and public safety.

Objective

To define the significant design features of the reactor building structure, reactor building isolation system, and penetration room ventilation system.

Specification

5.2.1 Reactor Building Structure

The reactor building completely encloses the reactor and the associated reactor coolant system. It is a fully continuous reinforced concrete structure in the shape of a cylinder with a shallow domed roof and a flat foundation slab. The cylindrical portion is prestressed by a post tensioning system consisting of horizontal and vertical tendons. The dome has a three-way post tensioning system. The foundation slab is conventionally reinforced with high strength reinforcing steel. The entire structure is lined with 1/4" welded steel plate to provide vapor tightness.

The internal net free volume of the reactor building is approximately 1.81×10^6 cu. ft. The approximate inside dimensions are: diameter--116'; height--207'. The approximate thickness of the concrete forming the buildings are: cylindrical wall--3-3/4'; dome--3-1/4'; and the foundation slab--9'.

The concrete reactor building structure provides adequate shielding or both normal operation and accident situations. Design pressure and temperature are 59 psig and 286 F, respectively.

The reactor building is designed for an external atmospheric pressure of 3.0 psi greater than the internal pressure. This corresponds to a margin of 0.5 psi above the differential pressure that could be developed if the building is sealed with an internal temperature of 110 F and it is subsequently cooled to an internal temperature of less than 50 F. Since the building is designed for this pressure differential, vacuum breakers are not required.

The principal design basis for the structure is that it be capable of withstanding the internal pressure resulting from a loss of coolant accident, as defined in FSAR Section 14 with no loss of integrity. In this event the total energy contained in the water of the reactor coolant system is



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. DPR-51

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NO. 1

DOCKET NO. 50-313

1.0 BACKGROUND

By letter dated July 22, 1993, Entergy Operations, Inc. (the licensee) submitted a request for changes to the Arkansas Nuclear One, Unit 1 (ANO-1) Technical Specifications (TSs). The requested changes would change TS 5.2.1 which specifies a value for the volume of the ANO-1 reactor building. The current value of the containment volume in Section 5.2.1 of the ANO-1 TSs is $1.91 \times 10^6 \text{ ft}^3$. The licensee states that this is an approximate value and that a smaller value is used for the reactor building peak pressure analyses. This results in a higher peak pressure which is conservative.

The original safety analysis report reactor building peak pressure analysis used a reactor building internal volume of $1.8656 \times 10^6 \text{ ft}^3$. The licensee stated in the July 22, 1993, submittal that during a penetration design review, a non-conservative error was identified in the calculation of the reactor building net free volume. Several other errors were subsequently discovered. When these errors were corrected the calculated reactor building net free volume decreased from 1.8656×10^6 to $1.81 \times 10^6 \text{ ft}^3$.

2.0 DISCUSSION AND EVALUATION

The reactor building net free volume is an input to the reactor building design basis accident, the post-loss-of-coolant accident (LOCA) hydrogen generation calculations, the maximum hypothetical accident dose calculation, design basis LOCA calculations to demonstrate that the criteria of 10 CFR 50.46 are satisfied, and reactor building leak rate testing. The licensee discussed how each of these analyses were affected by the revised value for containment net free volume. The analysis of the reactor building peak pressure is most affected by the decrease in calculated reactor building volume. The results of this analysis are a new peak pressure of 54.0 psig and a temperature of 284°F. These values exceed the original safety analysis report (SAR) values but are less than the reactor building design pressure and temperature of 59 psig and 286°F, respectively. The licensee performed the reactor building pressure calculations using the COPATTA computer code. This code is used for the present SAR analyses (see Section 14.2.2.5.5.2).

Since design basis LOCA calculations are most conservative when the containment volume is maximized, the licensee did not perform any additional calculations for this case.

3.0 TECHNICAL CONCLUSION

The staff has reviewed the licensee's analyses accompanying the proposed change to the reactor building net free volume. The licensee has addressed all analyses which would be affected by the change and has demonstrated that the facility still meets all applicable safety criteria. The methods used by the licensee are those used and approved by the staff previously and are therefore acceptable.

4.0 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.

5.0 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 (58 FR 67843). 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.

6.0 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: R. Lobe1

Date: May 22, 1995