

January 24, 1991

Docket No. 50-313

Mr. Neil S. Carns
Vice President, Operations ANO
Entergy Operations, Inc.
Route 3 Box 137G
Russellville, Arkansas 72801

Dear Mr. Carns:

SUBJECT: ISSUANCE OF AMENDMENT NO. 142 TO FACILITY OPERATING LICENSE
NO. DPR-51 - ARKANSAS NUCLEAR ONE, UNIT NO. 1 (TAC NO. 77200)

The Commission has issued the enclosed Amendment No. 142 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 10, 1990.

The amendment revises Technical Specification 4.7.2 regarding the verification of proper control rod drive patching. The limitation of less than two inches of control rod movement for patching verification has been revised to ensure sufficient travel is allowed for verification or problem identification. In addition, the amendment more accurately reflects the conditions under which patch verification is required.

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:

Thomas W. Alexion, Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 142 to DPR-51
2. Safety Evaluation

cc w/enclosures:
See next page

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

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Sincerely,

A handwritten signature in cursive script that reads "Thomas W. Alexion".

Thomas W. Alexion, Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 142 to DPR-51
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. Neil S. Carns
Entergy Operations, Inc.

Arkansas Nuclear One, Unit 1

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

ENERGY OPERATIONS INC.

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 142
License No. DPR-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Energy Operations, Inc. (the licensee) dated July 10, 1990, 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. DPR-51 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 142, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Thomas P. Gwynn, Acting Director
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 24, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 142

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

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

REMOVE PAGE

104

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104

4.7.2 Control Rod Program Verification (Group Vs Core Positions)

Applicability

Applies to surveillance of the control rod systems.

Objective

To verify that the designated control rod (by core position) is operating in its programmed functional position and group (rods 1 through 12, group 1-8).

Specification

- 4.7.2.1 Whenever the control rod drive patch is reconnected (after test, reprogramming, or maintenance), each control rod drive mechanism shall be selected from the control room and exercised by movement of sufficient travel to verify that the proper rod has responded as shown on the unit computer printout or on the input to the computer for that rod.
- 4.7.2.2 Whenever power or instrumentation cables to the control rod drive assemblies atop the reactor or at the bulkhead are disconnected or removed, an independent verification check of their reconnection shall be performed.
- 4.7.2.3 Any rod found to be improperly programmed shall be declared inoperable until properly programmed.

Bases

Each control rod has a relative and an absolute position indicator system. One set of outputs goes to the plant computer identified by a unique number associated with only one core position. The other set of outputs goes to a programmable bank of 68 edgewise meters in the control room. In the event that a patching error is made in the patch panel or connectors in the cables leading to the control rod drive assemblies or the control room meter bank is improperly transposed upon reconnection, these errors and transpositions will be discovered by a comparative check by (1) selecting a specific rod from one group (e.g., rod 1 in regulating group 6), (2) noting the program-approved core position for this rod of the group, (3) exercising the selected rod, and (4) noting that a) the computer prints out both absolute and relative position response for the approved core position, and b) the proper meter in the control room display bank indicates both absolute and relative meter positions. This type of comparative check will not assure detection of improperly connected cables inside the reactor building. For these, (Specification 4.7.2.2) it will be necessary for a responsible person, other than the one doing the work, to verify by appropriate means that each cable has been matched to the proper control rod drive assembly.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 142 TO

FACILITY OPERATING LICENSE NO. DPR-51

ENERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NO. 1

DOCKET NO. 50-313

INTRODUCTION

By letter dated July 10, 1990, Entergy Operations, Inc. (the licensee) requested an amendment to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-51 for Arkansas Nuclear One, Unit No. 1 (ANO-1). The proposed amendment would revise Technical Specification 4.7.2 regarding the verification of proper control rod drive patching. The limitation of less than two inches of control rod movement has been revised to ensure sufficient travel is allowed for verification or problem identification. In addition, the amendment more accurately reflects the conditions under which patch verification is required.

EVALUATION

The Control Rod Drive (CRD) System translates the reactor control signal to a linear motion of the control rods. A patch panel is used to assign specific control rod drives to the power supplies. Changes in the power supply connections to the control rods ("repatching") are performed while the reactor is shutdown. Technical Specification 4.7.2 identifies the surveillances required to ensure proper operation and position indication following repatching activities.

Existing Technical Specification 4.7.2 requires verification of each control rod "whenever the control rod drive panel is locked...". The specification limits the allowable rod movement to perform this verification to two inches or less.

The licensee has proposed to revise the wording of Technical Specification 4.7.2 to more accurately reflect the conditions under which patch verification is required. This was accomplished by replacing the locking of the patch panel criterion with the actual reconnection of the patch which is performed during plant outages. This change ensures that routine maintenance activities which do not disturb the patch do not initiate an unnecessary patch verification during plant conditions in which it is not practical to perform the verification procedure.

The proposed amendment revises the restriction of two inches or less control rod movement for patch verification to allow sufficient movement for verification or problem identification. This change assures that proper rod

verifications are performed but are not unnecessarily complicated by accuracy limitations and/or inoperable rod position indication reed switches. The physical distance between reed switches and the associated indication limitations could actually preclude satisfying the existing verification requirements if one or more reed switches were found to be inoperable. The allowance of greater rod movement may also assist in the identification and correction of problems associated with the patching procedure. Other Technical Specifications such as 1.2 and 3.1.3 which deal with required shutdown margins and minimum conditions for criticality exist to prevent inadvertent criticality. These Technical Specifications are applicable during the plant conditions in which the patch verification is performed and require adequate shutdown margin ($1\% \Delta k/k$) be maintained. Therefore, the allowance of greater rod movements during the patch verification procedure does not introduce inadvertent criticality or other safety concerns but does provide beneficial operational flexibility.

Based on its review, the staff agrees with the licensee that the clarification of those conditions requiring patch verification and the removal of the two inch rod movement restriction are appropriate. Therefore, the staff finds the licensee's proposed TS change to be acceptable. The staff also notes that the licensee has made minor editorial changes to the Bases, and finds them to be acceptable as well.

ENVIRONMENTAL CONSIDERATION

The amendment involves a change in a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The 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 exposures. 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. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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.

CONCLUSION

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: January 24, 1991

Principal Contributor: W. Reckley, PDIV-1