Docket No. 50-313 September 7, 1995

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

Dear Mr. Yelverton:

SUBJECT: ISSUANCE OF AMENDMENT NO. 168 TO FACILITY OPERATING LICENSE NO. DPR-51 - ARKANSAS NUCLEAR ONE, UNIT NO. 1 (TAC NO. M86265)

The Commission has issued the enclosed Amendment No. 168 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 March 19, 1993.

The amendment would allow the licensee to reconstitute fuel assemblies by replacing a limited number of damaged fuel rods with stainless steel filler rods.

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:

Roby B. Bevan, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 168 to DPR-51
2. Safety Evaluation

cc w/enclosures:
See next page

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OFC	LA:PD4-1	PM:PD4-1	SRXB	OGC	D(A):PD4-1
NAME	PNoonan	RBevan:pk	RJones	MYoung	HRood
DATE	7/13/93	7/30/93	8/17/93	9/1/93	9/7/93
COPY	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO

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

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RBBevan

Roby B. Bevan, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

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See next page

cc:

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

ENTERGY OPERATIONS INC.

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 168
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 March 19, 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.

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. 168 , 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

Harry Rood, Acting Director
Project Directorate IV-1
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 7, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 168

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	INSERT PAGE
114	114

5.3 REACTOR

Specification

5.3.1 Reactor Core

5.3.1.1 The reactor shall contain 177 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide pellets. Limited substitutions of stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions.

5.3.1.2 The reactor core approximates a right circular cylinder with an equivalent diameter of 128.9 inches and an active height of 144 inches. The active fuel length is approximately 142 inches.(2)

5.3.1.3 The average enrichment of the initial core is a nominal 2.62 weight percent of U-235. Three fuel enrichments are used in the initial core. The highest enrichment is less than 3.5 weight percent U-235.

5.3.1.4 There are 60 full-length control rod assemblies (CRA) and 8 axial power shaping rod assemblies (APSRA) distributed in the reactor core as shown in FSAR Figure 3-60. The full-length CRA contain a 134-inch length of silver-indium-cadminum alloy clad with stainless steel. Each APSRA contains a 63-inch length of Inconel-600 alloy.(3)

5.3.1.5 The initial core had 68 burnable poison spider assemblies with similar dimensions as the full-length control rods. The cladding is Zircaloy-4 filled with alumina-boron and placed in the core as shown in FSAR Figure 3-2.

5.3.1.6 Reload fuel shall conform to the design and evaluation described in FSAR and shall not exceed an enrichment of 4.1 weight percent of U-235.

5.3.2 Reactor Coolant System

5.3.2.1 The reactor coolant system is designed and constructed in accordance with code requirements.(4)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 168 TO

FACILITY OPERATING LICENSE NO. DPR-51

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NO. 1

DOCKET NO. 50-313

1.0 INTRODUCTION

By letter dated March 19, 1993, Entergy Operations, Inc. (the licensee), submitted a request for changes to the Arkansas Nuclear One, Unit No. 1 (ANO-1) Technical Specification (TS). The requested changes would allow the licensee to reconstitute fuel assemblies by replacing a limited number of damaged fuel rods with stainless steel filler rods.

2.0 EVALUATION

The proposal to allow fuel assemblies to be reconstituted by use of stainless steel filler rods to replace damaged fuel rods has been previously approved for other nuclear steam supply systems designed by Babcock and Wilcox (B&W). Supplement 1 to Generic Letter (GL) 90-02, "Alternative Requirements for Fuel Assemblies in the Design Features of Technical Specifications," encouraged licensees to propose a line-item TS improvement to accommodate a limited fuel reconstitution based on NRC-approved generic topical reports.

In December 1991, the B&W Owners Group submitted Topical Report BAW-2149, "Evaluation of Replacement Rods in BWFC Fuel Assemblies." The topical report describes the determination of the effects of solid stainless steel replacement rods on the nuclear, thermal hydraulic, and mechanical analysis of the fuel. The topical report shows that it is acceptable to replace as many as 10 fuel rods anywhere in the fuel assembly with stainless steel filler rods. The report supports current fuel reconstitution designs and repair methods that have been developed to facilitate such repairs and provides the basis for the acceptability of stainless steel filler rods in B&W-supplied fuel assemblies.

The proposed amendment to allow the described repair of ANO-1 is not a cycle-specific approval. Rather, it simply amends TS 5.3.1.1 to allow flexibility in the design-feature description so that such repairs may be made when and if needed, subject to the limitations and conditions set forth in the NRC staff safety evaluation (SE) of B&W Fuel Company Topical Report BAW-2149, "Evaluation of Replacement Rods in BWFC Fuel Assemblies," issued April 12, 1993. The SE affirms that Topical Report BAW-2149 is acceptable for

referencing to support limited substitutions of stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations. The amended TS 5.3.1.1 provides that such fuel assemblies shall be limited to those fuel designs that have been analyzed using applicable NRC staff-approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases, including neutronic, thermal-hydraulic, and mechanical considerations. This ensures that future core alterations remain subject to controls with respect to overall fuel performance and safety considerations.

The amended TS 5.3.1.1 provides also that a limited number of lead test assemblies (LTAs) that have not completed representative testing may be placed in non-limiting core regions. This provision is suggested in Supplement 1 of GL 90-02 in order to explicitly acknowledge the use of LTAs in the core, appropriately placed, to test new fuel designs. The use of NRC-approved methodology is also sufficient to ensure that placement of LTAs in the core will satisfy all existing design bases and safety criteria. Therefore, the proposed 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. 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 30193). 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: R. Bevan

Date: September 7, 1993