

1997

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

May 20, 1997

SUBJECT: ISSUANCE OF AMENDMENT NO. 185 TO FACILITY OPERATING LICENSE
NO. NPF-6 - ARKANSAS NUCLEAR ONE, UNIT NO. 2 (TAC NO. M92063)

Dear Mr. Hutchinson:

The Commission has issued the enclosed Amendment No. 185 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 April 4, 1995, as supplemented by letters dated August 25, 1995, and April 18, 1997.

The amendment permits reactor coolant pump flywheel inspections to be delayed by one additional refueling outage.

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. 185 to NPF-6
2. Safety Evaluation

cc w/encls: See next page

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NAME	G. Kalman/vw	CHawes <i>CMH</i>	<i>R. Bachmann</i>
DATE	<i>5/17/97</i>	<i>5/19/97</i>	<i>5/19/97</i>
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 20, 1997

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

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Sincerely,

A handwritten signature in cursive script 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. 50-368

Enclosures: 1. Amendment No. 185 to NPF-6
2. Safety Evaluation

cc w/encls: See next page

Mr. C. Randy Hutchinson
Entergy Operations, Inc.

Arkansas Nuclear One, Unit 2

cc:

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Pope County Courthouse
Russellville, AR 72801



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. 185
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 April 4, 1995, as supplemented by letters dated August 25, 1995, and April 18, 1997, 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.

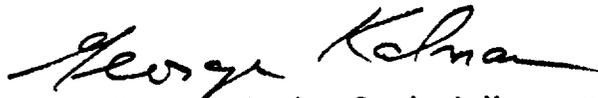
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-6 is hereby amended to read as follows:

2. Technical Specifications

- The Technical Specifications contained in Appendix A, as revised through Amendment No. 185, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective within 30 days 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 20, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 185

FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Revise 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 to indicate the area of change.

REMOVE PAGE

3/4 4-26

INSERT PAGE

3/4 4-26

3/4.4.10 STRUCTURAL INTEGRITY

ASME CODE CLASS 1, 2 AND 3 COMPONENTS

LIMITING CONDITION FOR OPERATION

3.4.10.1 The structural integrity of ASME Code Class 1, 2 and 3 components shall be maintained in accordance with Specification 4.4.10.1.

APPLICABILITY: ALL MODES

ACTION:

- a. With the structural integrity of any ASME Code Class 1 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature more than 50°F above the minimum temperature required by NDT considerations.
- b. With the structural integrity of any ASME Code Class 2 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature above 200°F.
- c. With the structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements, restore the structural integrity of the affected component to within its limit or isolate the affected component from service.

SURVEILLANCE REQUIREMENTS

4.4.10.1 In addition to the requirements of Specification 4.0.5, each Reactor Coolant Pump flywheel shall be inspected per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975.*

* The ultrasonic volumetric examination of the areas of higher stress concentration at the bore and keyway of the flywheels for all four reactor coolant pumps may be extended through completion of the 2R13 refueling outage.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO.185 TO
FACILITY OPERATING LICENSE NO. NPF-6
ENERGY OPERATIONS, INC.
ARKANSAS NUCLEAR ONE, UNIT NO. 2
DOCKET NO. 50-368

1.0 INTRODUCTION

By letter dated April 4, 1995, Entergy Operations, Inc. (the licensee) submitted a request to change the Technical Specifications (TSs) for Arkansas Nuclear One, Unit 1 (ANO-1) and Unit 2 (ANO-2). The requested change would eliminate the requirement to perform periodic reactor coolant pump (RCP) flywheel inspections. The submittal was intended to serve as a lead submittal for all Combustion Engineering Owners Group plants. The staff has not completed the review of the generic aspects of the submittal.

While the generic review is in progress, the licensee requested relief from performing individual flywheel inspections on two occasions. The first such request was submitted on August 25, 1995. This relief was granted and documented in a letter dated September 22, 1995, from NRC to the licensee. The second request for relief from scheduled flywheel inspections is dated April 18, 1997 and is the subject of this evaluation. This latest request for relief involves the deferral of the inspection of RCP flywheels from refueling outage 2R12, scheduled for May 9, 1997, to refueling outage 2R13, which is anticipated to begin in late 1998.

These TS change requests are based upon information provided in Topical Report SIR-94-080 [1] entitled, "Relaxation of Reactor Coolant Pump Flywheel Inspection Requirements." The topical report was developed by Structural Integrity Associates, Inc. (SIA) to provide the bases for a complete elimination of the RCP flywheel inspections for ABB Combustion Engineering Owners Group (CEOG) plants. In addition to ANO-1 & ANO-2, the CEOG plants also include Millstone 2, Palisades, St. Lucie 1 & 2, and Waterford 3.

The letters dated August 25, 1995, and April 18, 1997, provided clarifying information and reduced the scope of the initial amendment request. These submittals did not change the initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

The 10 CFR Part 50, Appendix A, General Design Criteria 4 (GDC 4), requires that structures, systems, and components important to safety be protected against the effects of missiles that might result from equipment failures. In accordance with the inspection guidelines of Regulatory Guide (RG) 1.14, "Reactor Coolant Pump Flywheel Integrity," the licensee specifies in the Surveillance Requirement 4.4.10.1 of the TS for ANO-2 that each RCP flywheel shall be inspected in accordance with the recommendations of Regulatory Position C.4.b of RG 1.14, Revision 1, August 1975. This regulatory position specifies an in-place ultrasonic volumetric examination of the areas of higher stress concentration at the bore and keyway at approximately 3-year intervals, and a surface examination of all exposed surfaces and completely volumetric examination at approximately 10-year intervals. From 1982 to 1994, the licensee had conducted six ultrasonic testing (UT) examinations to each of the four RCP flywheels at an average interval of 2.4 years.

3.0 EVALUATION

The licensee submitted Topical Report SIR-94-080 for ANO-1 & ANO-2 as lead plants to provide the bases for a complete elimination of the inspection requirement for RCP flywheels in its TS. This topical report includes plant-specific operation and material data from ANO-1 & ANO-2, St. Lucie 1 & 2, Millstone 3, Palisades, and Waterford 3. It also contains information such as flywheel designs, inspection results, stress and fracture mechanics analyses, and the resulting allowable flaw sizes.

The ANO-2 flywheel assembly is of the solid type with the flywheel shrunk-on and keyed to the motor shaft. The flywheel material is A 533, Grade B, Class 1 steel plate which is a pressure vessel quality steel and is vacuum improved. Equivalent materials are used in the stress and fracture mechanics analyses of RCP flywheels in a previously approved Westinghouse topical report [2]. The staff review of the Westinghouse topical report is documented in Reference 3. The staff determined that materials equivalent to that in the ANO-2 flywheel would have sufficient fracture toughness to justify the inspection of the flywheel from 3-year intervals to 10-year intervals. Since the materials in the ANO-2 flywheels are equivalent to the materials in the Westinghouse topical report, ANO-2 flywheels should have adequate fracture toughness at the end of the next refueling outage.

The licensee had conducted six UT examinations in accordance with the TS requirements from 1982 to 1994, to each of the four RCP flywheels at an average interval of 2.4 years. From these inspection results, the licensee did not identify any indications which present structural integrity concerns or conditions which could lead to the failure of a flywheel.

Although the staff has not completed the review of the SAI topical report, the staff has determined that the proposed inspection deferment for one operating cycle would not affect the structural integrity of the flywheels. This

decision is based on (1) the favorable results from all six volumetric examinations to each of the four RCP flywheels conducted by ANO-2 since 1982, (2) the similarity of the materials in the ANO-2 RCP flywheels and the RCP flywheels in a previously approved Westinghouse topical report, and (3) the much shorter time involved in the requested one-cycle deferral as compared to the inspection period that was approved in the review of the Westinghouse topical report.

4.0 TECHNICAL CONCLUSION

Based on our evaluation, the staff determined that the proposed inspection deferment for one operating cycle would not affect the structural integrity of the RCP flywheels. Therefore, the flywheel inspection at ANO-2 may be deferred one operating cycle from refueling outage 2R12 scheduled for May 9, 1997, to the next refueling outage. The licensee may incorporate the proposed one-time change into the TS for ANO-2.

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 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 (60 FR 35069). 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.

8.0 REFERENCES

- 1.0 Entergy Operations, Inc., letter from J. W. Yelverton (Entergy) to USNRC Document Control Desk with enclosed report, SIR-94-080, "Relaxation of Reactor Coolant Pump Flywheel Inspection Requirements," April 4, 1995.
- 2.0 Duquesne Light Co., letter from George S. Thomas (DLC) to USNRC Document Control Desk with enclosed report, WCAP-14535, "Topical Report on Reactor Coolant Pump Flywheel Inspection Elimination," January 24, 1996.
- 3.0 USNRC, letter from Brian W. Sheron (USNRC) to Sushil C. Jain (DLC) with enclosed SER, "Acceptance for Referencing of Topical Report WCAP-14535, Topical Report on Reactor Coolant Pump Flywheel Inspection Elimination," September 12, 1996.

Principal Contributor: S. Sheng

Date: May 20, 1997