

September 28, 1995

Mr. Jerry W. Yelverton
Vice President, Operations ANO
Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72801

SUBJECT: ISSUANCE OF AMENDMENT NO. 167 TO FACILITY OPERATING LICENSE
NO. NPF-6 - ARKANSAS NUCLEAR ONE, UNIT NO. 2 (TAC NO. M92067)

Dear Mr. Yelverton:

The Commission has issued the enclosed Amendment No. 167 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 letter dated September 28, 1995.

The amendment removes the requirement to maintain water level 23 feet above irradiated fuel assemblies in the reactor while latching and unlatching control element assemblies.

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. 167 to NPF-6
2. Safety Evaluation

cc w/encs: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

September 28, 1995

Mr. Jerry W. Yelverton
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. 167 to NPF-6
2. Safety Evaluation

cc w/encls: See next page

Mr. Jerry W. Yelverton
Entergy Operations, Inc.

Arkansas Nuclear One, Unit 2

cc:

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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. 167
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 letter dated September 28, 1995, 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. 167, 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: September 28, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 167

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 vertical lines indicating the area of change.

REMOVE PAGE

3/4 9-10

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REFUELING OPERATIONS

WATER LEVEL - REACTOR VESSEL

LIMITING CONDITION FOR OPERATION

3.9.9 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated within the reactor pressure vessel.

APPLICABILITY: During movement of fuel assemblies or CEAs within the reactor pressure vessel while in MODE 6, except during latching and unlatching of CEAs.

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving movement of fuel assemblies or CEAs within the pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and at least once per 24 hours thereafter during movement of fuel assemblies or CEAs.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 167 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, as supplemented by letter dated September 28, 1995, Entergy Operations, Inc. (the licensee) submitted a request for changes to the Arkansas Nuclear One, Unit No. 2 (ANO-2) Technical Specifications (TS). The requested changes would modify TS 3.9.9, Water Level - Reactor Vessel, to permit latching and unlatching of control element assemblies (CEAs) with less than 23 feet of water over the top of the irradiated fuel assemblies in the reactor vessel. The change would improve the operator's visibility of the engaging mechanism and would simplify the latching and unlatching process. The supplemental information submitted by the licensee on September 28, 1995 provided additional technical information related to the latching and unlatching process. It did not change the original no significant hazards consideration determination.

The current TS requires a minimum of 23 feet of water over the top of irradiated fuel assemblies during movement of fuel or CEAs in the reactor vessel while in the refueling mode. CEAs are inserted into selected fuel assemblies in the reactor vessel. The basis for maintaining a minimum water depth of 23 feet is to ensure that there is sufficient water over irradiated fuel so that in the event of damage to fuel pins, the radioactive iodine that would be released from the fuel pins would be absorbed by the water. It is assumed that following a fuel handling accident, 10% of the iodine in the fuel assembly would be released into the water and 23 feet of water above the fuel would remove 99% of the released iodine.

Typically, the licensee utilizes a single closed-circuit viewing camera to verify the CEA latching and unlatching and water level is not a factor. However, in the event of a camera failure, there is a need to lower the water level by approximately three feet to permit the operator to visually verify the engaging slot position and to ascertain that the CEA extensions are disconnected from their CEAs. Revised Standard TS for Combustion Engineering Plants (NUREG-1432) do not specify a minimum water level during CEA latching and unlatching.

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Enclosure

2.0 EVALUATION

The process of latching and unlatching CEAs does not involve movement of any of the fuel bearing portions of the fuel assembly. During latching and unlatching, the CEA extension shaft is typically lifted six inches and a load cell is used to ascertain whether the CEA is attached to the extension shaft. During the unlatching process the CEA is unlatched while it is suspended approximately six inches above its bottom-most position in the fuel assembly and a decrease in the load cell reading provides a positive indication that the CEA has detached from the extension shaft. The unlatching and latching associated movements of the CEA, including the six-inch gravity fall to the bottom of the fuel assembly, are all movements that occur during power operation. While moving inside the fuel assembly, the CEA is confined by guide tubes that provide a structural barrier between the CEAs and fuel pins. There is little likelihood that CEA movements during latching and unlatching would damage fuel pins and release fission products.

Although not addressed as the basis for maintaining 23 feet of water above fuel assemblies in the current TS, an assessment was performed to evaluate the radiation consequences of direct shine from reactor internals if the water level were lowered to approximately 20 feet above the active fuel during CEA latching and unlatching. There are no radiological concerns from radiation emanating from the irradiated fuel in the reactor vessel since 20 feet of water would reduce any direct radiation from inside the vessel to well below ambient levels.

The tops of extension shafts will protrude above the surface of the water when the level is lowered to 20 feet. Since the top portions of the extension shafts are not exposed to any appreciable neutron fluence, the portions of the shafts protruding above the water surface will not be a source of radiation due to neutron activation and, therefore, would not normally increase the ambient levels of radiation on the refueling floor. However, there is always the potential that highly radioactive fission products or activated material may be deposited on top portions of the extension shafts. Any radioactive material above or near the water surface would present a hazard to operators during the latching or unlatching sequence. The radiation hazards associated with potential radionuclides on the extension shafts during latching and unlatching are similar to radiation hazards that are commonly encountered during other reactor refueling evolutions and these potential hazards are addressed by site specific radiological procedures and controls rather than by the TS.

3.0 TECHNICAL CONCLUSION

The ability to lower the water level to below 23 feet while latching and unlatching CEAs will simplify the task for operators and will likely decrease the overall time spent by operators in a radiation field on the refueling bridge. Latching and unlatching CEAs does not constitute movement of fuel bearing portions of fuel assemblies and this evolution has minimal likelihood to damage fuel pins and release fission products. Any potential for worker exposure from contamination or exposed reactor internals during the latching and unlatching evolution should be readily minimized by the licensee's radiological controls procedures.

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. 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 42604). 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: G. Kalman

Date: September 28, 1995