

July 22, 1986

Docket No.: 50-368

Mr. T. Gene Campbell  
Vice President  
Nuclear Operations  
Arkansas Power & Light Company  
Post Office Box 551  
Little Rock, Arkansas 72203

Dear Mr. Campbell:

Subject: Issuance of Amendment No. 76 to Facility Operating License NPF-6 -  
Arkansas Nuclear One, Unit No. 2

The Commission has issued the enclosed Amendment No. 76 to Facility Operating License No. NPF-6 for Arkansas Nuclear One, Unit No. 2. The amendment consists of changes to the Technical Specifications in response to your application dated June 9, 1986.

The amendment revises the Technical Specifications 3/4.10, "Special Test Exceptions - Shutdown Margin" concerning the surveillance requirement for Control Element Assemblies.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

/s/

Robert S. Lee, Project Manager  
PWR Project Directorate No. 7  
Division of PWR Licensing-B

Enclosures:

1. Amendment No. 76 to NPF-6
2. Safety Evaluation

cc: See next page

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Mr. T. Gene Campbell  
Arkansas Power & Light Company

Arkansas Nuclear One

cc:

Mr. J. Ted Enos, Manager  
Nuclear Engineering and Licensing  
Arkansas Power and Light Company  
P. O. Box 551  
Little Rock, Arkansas 72203

Mr. Charlie B. Brinkman, Manager  
Washington Nuclear Operations  
C-E Power Systems  
7910 Woodmont Avenue  
Suite 1310  
Bethesda, Maryland 20814

Mr. James M. Levine, Director  
Site Nuclear Operations  
Arkansas Nuclear One  
P. O. Box 608  
Russellville, Arkansas 72801

Honorable William Abernathy  
County Judge of Pope County  
Pope County Courthouse  
Russellville, Arkansas 72801

Nicholas S. Reynolds, Esq.  
Bishop, Liberman, Cook,  
Purcell & Reynolds  
1200 Seventeenth Street, N.W.  
Suite 700  
Washington, D.C. 20036

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Office of Executive Director for  
Operations  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
P. O. Box 2090  
Russellville, Arkansas 72801

Mr. Frank Wilson, Director  
Division of Environmental Health  
Protection  
Arkansas Department of Health  
4815 West Markam Street  
Little Rock, Arkansas 72201

Mr. Robert B. Borsum  
Babcock & Wilcox  
Nuclear Power Generation Division  
Suite 220  
7910 Woodmont Avenue  
Bethesda, Maryland 20814



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

ARKANSAS POWER & LIGHT COMPANY

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 76  
License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Arkansas Power & Light Company (the licensee) dated June 9, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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 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 Appendices A and B, as revised through Amendment No. 76, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert S. Lee, Project Manager  
PWR Project Directorate No. 7  
Division of PWR Licensing-B

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: July 22, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 76

FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by amendment number and contains vertical lines indicating the areas of change. The corresponding overleaf page is also provided to maintain document completeness.

Remove Page

3/4 10-1

Insert Page

3/4 10-1

### 3/4.10 SPECIAL TEST EXCEPTIONS

#### SHUTDOWN MARGIN

#### LIMITING CONDITION FOR OPERATION

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3.10.1 The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 may be suspended for measurement of CEA worth and shutdown margin provided reactivity equivalent to at least the highest estimated CEA worth is available for trip insertion from OPERABLE CEA(s).

APPLICABILITY: MODE 2.

#### ACTION:

- a. With any full length CEA not fully inserted and with less than the above reactivity equivalent available for trip insertion, immediately initiate and continue boration at  $> 40$  gpm of 1731 ppm boric acid solution or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.
- b. With all full length CEAs inserted and the reactor subcritical by less than the above reactivity equivalent, immediately initiate and continue boration at  $> 40$  gpm of 1731 ppm boric acid solution or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

#### SURVEILLANCE REQUIREMENTS

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4.10.1.1 The position of each full length CEA required either partially or fully withdrawn shall be determined at least once per 2 hours.

4.10.1.2 Each CEA not fully inserted shall be demonstrated capable of full insertion when tripped from at least the 50% withdrawn position within 7 days prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1.

SPECIAL TEST EXCEPTIONS

GROUP HEIGHT, INSERTION AND POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION

3.10.2 The group height, insertion and power distribution limits of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.1.3.7, 3.2.2, 3.2.3, 3.2.7 and the Minimum Channels OPERABLE requirement of Functional Unit 15 of Table 3.3-1 may be suspended during the performance of PHYSICS TESTS provided:

- a. The THERMAL POWER is restricted to the test power plateau which shall not exceed 85% of RATED THERMAL POWER, and
- b. The limits of Specification 3.2.1 are maintained and determined as specified in Specification 4.10.2.2 below.

APPLICABILITY: During startup and PHYSICS TESTS.

ACTION:

With any of the limits of Specification 3.2.1 being exceeded while any of the above requirements are suspended, either:

- a. Reduce THERMAL POWER sufficiently to satisfy the requirements of Specification 3.2.1, or
- b. Be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.10.2.1 The THERMAL POWER shall be determined at least once per hour during PHYSICS TESTS in which any of the above requirements are suspended and shall be verified to be within the test power plateau.

4.10.2.2 The linear heat rate shall be determined to be within the limits of Specification 3.2.1 by monitoring it continuously with the Incore Detector Monitoring System pursuant to the requirements of Specifications 4.2.1.3 and 3.3.3.2 during PHYSICS TESTS above 5% of RATED THERMAL POWER in which any of the above requirements are suspended.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO FACILITY OPERATING LICENSE NO. NPF-6

ARKANSAS POWER AND LIGHT COMPANY

ARKANSAS NUCLEAR ONE, UNIT 2

DOCKET NO. 50-368

1.0 INTRODUCTION

Arkansas Power and Light Company (APL), by letter from T. Gene Campbell (APL) to George W. Knighton (NRC), dated June 9, 1986, has requested a revision to Arkansas Nuclear One-Unit 2 (ANO-2) Technical Specification 3.10.1, "Special Test Exceptions-Shutdown Margin." This specification presently allows shutdown margin to be reduced to less than the normal operating shutdown margin requirements during low power physics testing provided that certain conditions are met. One of these conditions (Surveillance Requirement 4.10.1.2) requires that all CEAs not fully inserted in the core be shown to be capable of full insertion when tripped from at least the 50% withdrawn position within 24 hours prior to reducing shutdown margin to less than the normal operating requirements. The requested revision would allow this surveillance to be performed within the past 7 days prior to margin reduction instead of within the prior 24 hours.

This request has been made in order to enable low power physics tests to be accomplished without an additional trip to verify CEA insertability. The startup test program includes a CEA trip test before criticality in order to measure CEA drop times and demonstrate CEA insertability. Criticality is then achieved and low power physics tests are performed. Measurements of CEA worths are made later and may involve the reduction of shutdown margin as permitted by Technical Specification 3.10.1. Since these CEA worth measurements are performed several days after the CEA insertability tests were performed, the reactor would have to be tripped again to demonstrate CEA insertion capability and satisfy the current 24-hour criterion. The requested revision would, therefore, eliminate the necessity for an additional trip during physics tests by requiring CEA insertability to be verified within 7 days prior to reducing shutdown margin instead of within 24 hours.

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## 2.0 SAFETY EVALUATION

The primary concern in extending the surveillance time period for verifying CEA insertability is whether or not there could be an increase in the probability of a stuck CEA over a 7-day period of time as compared to the present 24 hour time period. Consideration of the configuration of the components that are used in CEA insertion indicate that there is nothing which could cause a significant increase in the probability of a CEA to become untrippable since there is no significant change in the geometry of these components over the 7-day period of low power physics testing. The components considered include the fuel assembly (including foreign material buildup in the gap between the CEA and the guide tube), the CEA, the CEA extension shaft, the control element drive mechanism, and the upper guide structure. Also, since the CEAs will insert by gravity upon loss of power, the probability of a stuck CEA is not increased due to an electrical malfunction, if one were to occur during physics testing.

The staff concludes that the proposed change continues to provide assurance that all CEAs are trippable during low power physics testing and does not affect the amount by which shutdown margin may be reduced during this period. It is therefore, acceptable.

## 3.0 EVALUATION SUMMARY

The staff has reviewed the proposed surveillance requirement change to the ANO-2 Technical Specification associated with the shutdown margin special test exception. This change would allow a time duration of 7 days following verification of CEA trippability during which time shutdown margin may be reduced to accommodate physics testing.

The staff concludes that the proposed change is acceptable since it continues to provide assurance that all CEAs are trippable during low power physics testing and does not affect the amount by which shutdown margin may be reduced during the testing period.

## 4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 exposure. The Commission has previously published 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 §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

We have 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.

Principal contributor to this SE was L. Kopp.

Dated: July 22, 1986

July 22, 1986

ISSUANCE OF AMENDMENT NO. 76 TO FACILITY OPERATING  
LICENSE NPF-6 - ARKANSAS NUCLEAR ONE, UNIT NO. 2

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