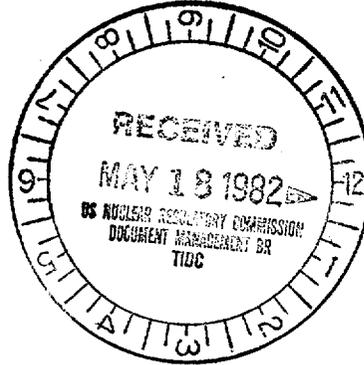


DCS MS-016

MAY 12 1982

Docket No. 50-368



- ✓ Docket File
- NRC PDR
- Local PDR
- ORB Rdg
- DEisenhut
- PKreutzer (3)
- RMartin
- OELD
- SECY
- OI&E (2)
- TBarnhart (A)
- LSchneider (1)
- ACRS (10)
- OPA
- ~~RFerguson~~
- RDiggs
- ~~RBallard~~
- NSIC
- ASLAB
- Gray File 4

Mr. William Cavanaugh, III
 Senior Vice President, Energy
 Supply Department
 Arkansas Power & Light Company
 P. O. Box 551
 Little Rock, Arkansas 72203

Dear Mr. Cavanaugh:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 31 to Facility Operating License No. NPF-6 for the Arkansas Nuclear One Unit 2 plant. The amendment consists of deletions from the list of conditions in the body of the license as listed below. The deletions are based upon our findings that the requirements of the conditions have been met by the licensee.

- o Core Protection Calculator System (CPCS) Position No. 1, Power Distribution Algorithm
- o CPCS Position No. 5, Cable separation
- o CPCS Position No. 12, Electrical Noise and Isolation

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original signed by:

Robert E. Martin, Project Manager
 Operating Reactors Branch #3
 Division of Licensing

Enclosures:

1. Amendment No. 31 to NPF-6
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
 See next page

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 PDR

OFFICE	DL: ORB #3	DL: ORB #3	DL: ORB	OELD		
SURNAME	RMartin/dd	RAClark	TMNovak	ones		
DATE	5/14/82	5/14/82	5/11/82	5/15/82		



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

Docket No. 50-368

Docketing and Service Section
Office of the Secretary of the Commission

SUBJECT: ARKANSAS POWER AND LIGHT COMPANY ARKANSAS NUCLEAR ONE, UNIT ONE 2

Two signed originals of the Federal Register Notice identified below are enclosed for your transmittal to the Office of the Federal Register for publication. Additional conformed copies (12) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for Submission of Views on Antitrust Matters.
- Notice of Availability of Applicant's Environmental Report.
- Notice of Proposed Issuance of Amendment to Facility Operating License.
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).
- Other: Amendment No. 31
Referenced documents have been provided PDR.

Division of Licensing
Office of Nuclear Reactor Regulation

Enclosure:
As Stated

OFFICE →	DL:ORB#3					
SURNAME →	PMKreutzer					
DATE →	5/13/82					

Arkansas Power & Light Company

cc:

Mr. John Marshall
Manager, Licensing
Arkansas Power & Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Mr. James P. O'Hanlon
General Manager
Arkansas Nuclear One
P. O. Box 608
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c/o DeBevoise & Liberman
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Washington, D. C. 20036

Arkansas Polytechnic College
Russellville, Arkansas 72801

Mr. Charles B. Brinkman
Manager - Washington Nuclear
Operations
C-E Power Systems
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Bethesda, Maryland 20014

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

Mr. W. Johnson
U.S. NRC
P. O. Box 2090
Russellville, Arkansas 72801

U.S. Environmental Protection Agency
Region VI Office
ATTN: Regional Radiation
Representative
1201 Elm Street
Dallas, Texas 75270

cc w/enclosure(s) and incoming
dated:

S. L. Smith, Operations Officer
Arkansas Nuclear Planning &
Response Program
P. O. Box 1749
Russellville, Arkansas 72801



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

ARKANSAS POWER AND LIGHT COMPANY

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 31
License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The facility will operate in conformity with the provisions of the Atomic Energy Act, of 1954, as amended and the rules and regulations of the Commission;
 - B. 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;
 - C. 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
 - D. 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, Facility Operating License No. NPF-6 is amended by deletion in its entirety of license condition 2.C.(3)(k).
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Date of Issuance: May 12, 1982



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 31 TO FACILITY OPERATING LICENSE NO. NPF-6

ARKANSAS POWER & LIGHT COMPANY

ARKANSAS NUCLEAR ONE, UNIT 2

DOCKET NO. 50-368

Introduction

Amendment No. 1 to the license for Arkansas Nuclear One Unit No. 2, (ANO-2) was issued September 1, 1978, authorizing operation of the plant subject to the conditions stated in the body of the license. Four of those conditions 2.C.(3)(k), parts (1),(2),(3) and (4) related to the Core Protection Calculator System (CPCS). 2.C.(3)(k)(4) was reported as resolved and deleted from the license as set forth in Amendment No. 12 dated June 12, 1979. Conditions 2.C.(3)(k), Parts (1) (2) and (3) as revised by Amendment No. 7 dated December 1, 1978, are the subjects of this Safety Evaluation and license amendment.

CPCS Position No. 1 Power Distribution Algorithm

Discussion

The position is stated in Table 7.1 and is discussed in Appendix D, section 3.5, of references 1, 2 and 3. The issues were resolved as reported in references 1, 2 and 3 with the exception of the verification testing required by the license condition 2.C.(3)(k)(1) to be performed in the initial startup of the plant. The license condition as stated in Amendment No. 7 reads as follows.

2.C.(3)(k)(1) CPCS Position No. 1, Power Distribution Algorithm

The startup report required by Technical Specification No. 6.9.1 shall be supplemented to include the results of the startup verification testing which demonstrates the conservatism of the calculation of the power distribution uncertainty factors. The startup testing shall be performed in accordance with information previously submitted by the licensee, as identified in Section D.3.5 of the Staff's Safety Evaluation Report and Supplements Number 1 and 2 thereto, in support of the resolution of CPCS Position No. 1.

In response to this license condition, the licensee performed tests and reported the results in references 4,5,6 and 7.

Evaluation

CPCS Position No. 1 required the licensee to experimentally qualify the adequacy of the algorithm's uncertainties, specifically those associated with the synthesis of axial power distribution. This subject includes review of the adequacy of both the testing procedures and of the test results.

A detailed description of startup test plan was required to assure that the CPC constants are verified in a manner consistent with the assumptions and applications in the CPS simulator uncertainty analysis. Our review of the detailed test procedures has been completed and approval was reported in Supplement No. 2 of the ANO-2 Safety Evaluation Report (SER).

We have reviewed the measurements performed during startup submitted in references 4,5,6 and 7 to demonstrate the adequacy of the power distribution uncertainty factors. These startup reports include measurements from Cycle 2 as well as Cycle 1. We find that these measurements experimentally qualify the adequacy of the uncertainties associated with the CPC power distribution algorithms including those associated with the synthesis of axial power distribution. We, therefore, consider Position 1 to be fully resolved and conclude that condition 2.C.(3)(k)(1) may be deleted from the license.

CPCS Position No. 5, Cable Separation, and CPCS Position No. 12, Electrical Noise and Isolation Discussion

These positions are stated in Table 7.1 and are discussed in Appendix D, Sections D.4.1.2 (Position 5) and D.4.1.4 (Position 12) of references 1, 2 and 3. The issues were resolved as reported in references 1, 2 and 3 with the exception of the verification testing required by license conditions 2.C.(3)(k)(2) and 2.C(3)(k)(3) to be performed in the initial startup of the plant. The license conditions as stated in Amendment No. 7 read as follows:

2.C.(3)(k)(2) CPCS Position No. 5, Cable Separation

The startup report required by Technical Specification No. 6.9.1 shall be supplemented to include the results of measurements from the startup testing program which demonstrates that noise or electromagnetic interference effects from non-Class IE circuits which are in close proximity to Class IE circuits are within previously established acceptable ranges. These measurements shall be performed in accordance with information previously submitted by the licensee, as identified in Section D.4.1.2 of the Safety Evaluation report and Supplements Number 1 and 2 thereto, in support of the resolution of CPCS Position No. 5.

2.C.(3)(k). (3) CPCS Position No. 12, Electrical Noise and Isolation

The startup report required by Technical Specification No. 6.9.1 shall be supplemented to include the results of measurements from the startup testing program which demonstrates that noise or electromagnetic interference effects upon the operation of the optical isolators are within previously established acceptable ranges. These measurements shall be performed in accordance with information previously submitted by the licensee, as identified in Sections D.4.1.4 and D.4.4.4 of Supplements Number 1 and 2 to the Safety Evaluation Report, in support of the resolution of CPCS Position No. 12.

In response to these license conditions, the licensee performed tests and reported the results in reference 8. Both of these positions are discussed together at this point since remaining issues are similar relating to the effects of electromagnetic interference from non-class IE circuits on class IE circuits (position 5) and to the effects of electromagnetic interference (EMI) from radio frequencies of 35 MHz to 2 GHz on the optical isolators.

Evaluation

We stated in Supplement 2 to our SER, issued prior to the licensing of ANO-2, the following:

"In response to position 5 and position 12, the applicant has performed a noise immunity qualification susceptibility test on the single channel CPC system. This test determined the susceptibility of the system to EMI. A graph of susceptibility field strengths and corresponding frequencies were established as a baseline. We have reviewed the test procedures, reference 21, and test report, reference 22, and conclude that the noise immunity tests are acceptable subject to satisfactory completion of EMI measurements.

The applicant has committed to measure the actual levels and frequencies of EMI onsite to confirm that these measurements fall within the acceptable range of the baseline graph. The results of the onsite measurements will be submitted in the startup test report."

References For Safety Evaluation

1. Staff Safety Evaluation Report (SER) related to issuance of the operating license for ANO-2; NUREG-0308 issued November, 1977.
2. Supplement number 1 to SER issued in June, 1978.
3. Supplement number 2 to SER issued in September 1978.
4. Letter, DC Trimble, AP&L Co. to KV Seyfrit, NRC, dated September 13, 1979 transmitting cycle 1 Startup Report covering initial criticality through 20% power testing, Section 6.1.8 "Core Performance Record Tests."
5. Letter, DC Trimble, AP&L Co, to RW Reid, NRC dated December 11, 1979 transmitting Supplement No. 1 to cycle 1 Startup Report covering up to 50% power testing, Section 6.2.7 "Core Performance Record Tests."
6. Letter, DC Trimble, AP&L Co, to RW Reid, NRC, dated March 6, 1980 transmitting Supplement No. 2 to cycle 1 Startup Report covering through 100% power testing, Section 6.3.7 "Core Performance Record Tests."
7. Letter, DC Trimble, AP&L Co., to K.V. Seyfrit, NRC, dated October 22, 1981 transmitting Cycle 2 Startup Report, Section 4.4 "Radial Peaking Factor and CEA Shadowing Factor Verification at 50% Full Power."
8. Letter, DC Trimble, AP&L Co. to K.V. Seyfrit, NRC, dated June 9, 1980 transmitting Supplement No. 3 to cycle 1 Startup Report, Section 6.4.8 "COLSS/CPC Verification."

The license conditions were developed consistent with these commitments. These measurements and a comparison of CPC susceptibility levels versus the measured EMI ambient at ANO-2 were provided by the licensee in reference 8. Reference 8 provides a comparison of conducted noise, radiated magnetic field and radiated electric field. Based on our review of this information, we find that the observed ambient EMI conditions are clearly below the CPC susceptibility thresholds. Therefore we consider that the concerns documented in CPCS Position 5 and 12 are resolved and conclude that conditions 2.C.(3)(k)(2) and 2.C.(3)(k)(3) may be deleted from the license.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: May 12, 1982

Principal Contributors to this SER were:

JRosenthal,
LKopp
RMartin

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-368

ARKANSAS POWER AND LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 31 to Facility Operating License No. NPF-6 issued to Arkansas Power and Light Company (the Licensee), which changed the list of conditions in the body of the license for operation of Arkansas Nuclear One, Unit No. 2, located in Pope County, Arkansas. The amendment is effective as of its date of issuance.

The amendment modifies the body of the license by deleting conditions which have been satisfied by the completion of verification testing relating to the operation of the reactor protection system's core protection calculator system.

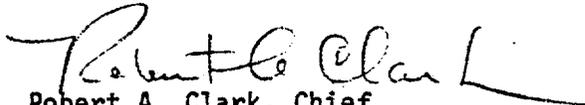
The Commission has made appropriate findings as required by Atomic Energy Act of 1954, as amended, and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of the amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of the amendment will not result in any significant environmental impact and that pursuant to 10CFR s51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of the amendment.

For further details with respect to this action, (1) see Amendment No. 31 to License No. NPF-6, and (2) the Commission's related Safety Evaluation. Both of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. and at the Arkansas Tech University, Russellville, Arkansas. A copy of these items may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director of Licensing.

Dated at Bethesda, Maryland this 12th day of May, 1982

FOR THE NUCLEAR REGULATORY COMMISSION


Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing