DMB 016

November 19, 1984

Docket Nos. 50-313
and 50-368

Mr. John M. Griffin, Senior
Vice President
Energy Supply
Arkansas Power & Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Dear Mr. Griffin:

The Commission has issued the enclosed Amendment Nos. 87 and 58 to Facility Operating License Nos. DPR-51 and NPF-6, for Arkansas Nuclear One, Units 1 and 2, in response to your application dated September 14, 1983, as supplemented by letters dated January 20, 1984, and May 24, 1984.

The amendments change the surveillance intervals for leak testing of certain sealed radioactive sources from every six months to every eighteen months.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next monthly Federal Register notice.

Sincerely,

"ORIGINAL SIGNED BY
JOHN F. STOLZ"

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

"ORIGINAL SIGNED BY:"

James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing

Enclosures:
1. Amendment No. 87 to DPR-51
2. Amendment No. 58 to NPF-6
3. Safety Evaluation

cc w/enclosures:
See next page

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cc w/enclosure(s):

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

ARKANSAS POWER & LIGHT COMPANY

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 87
License No. DPR-51

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Arkansas Power & Light Company (the licensee) dated September 14, 1983, as supplemented January 20, 1984 and May 24, 1984, 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 aurthorized 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. DPR-51 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 87 , 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

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 19, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 87

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains a vertical line indicating the area of change.

Remove Page	Insert Page
110b	110b

4.14 RADIOACTIVE MATERIALS SOURCES SURVEILLANCE

Applicability

Applies to leakage testing of byproduct, source, and special nuclear radioactive material sources.

Objective

To assure that leakage from byproduct, source, and special nuclear radioactive material sources does not exceed allowable limits.

Specification

Test for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an agreement State, as follows:

1. Each sealed source, except startup sources subject to core flux, containing radioactive material, other than Hydrogen 3, with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months.

2. The periodic leak test required does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another user unless they have been leak tested within six months prior to the date of use or transfer. In the absence of a certificate from a transferrer indicating that a test has been made within six months prior to the transfer, sealed sources shall not be put into use until tested.

3. Each sealed startup source shall be leak tested within 31 days prior to being subjected to core flux and following repair or maintenance to the source.

4. The periodic leak test does not apply to the four area radiation monitor sources located inside the reactor building or the boronometer source. These sources shall be tested for leakage at least once per 18 months.

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. 58
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 September 14, 1983, as supplemented January 20, 1984 and May 24, 1984, complies with the standards and requirements of the Atomic Engergy 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 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 licensee 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. 58 , 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

James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 19, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 58

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 area of change. The corresponding overleaf page is provided to maintain document completeness.

Remove Page	Insert Page
3/4 7-28	3/4 7-28

3/4.7.9 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.9.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of $\geq$ 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

a. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and:

   1. Either decontaminated and repaired, or

   2. Disposed of in accordance with Commission Regulations.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.1.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

a. The licensee, or

b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.9.1.2 Test Frequencies - Each category of sealed sources (excluding startup sources and fission detectors previously subjected to core flux) shall be tested at the frequencies described below.

a. Sources in use - At least once per six months for all sealed sources containing radioactive material:

SURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3), and

2. In any form other than gas.

b. Stored sources not in use - Each sealed source and fission detector shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use.

c. Startup sources and fission detectors - Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux or installed in the core and following repair or maintenance to the source or detector.

d. Source installed in the Boronometer - This sealed source shall be tested for leakage at least once per 18 months.

4.7.9.1.3 Reports - A report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of $\geq$ 0.005 microcuries of removable contamination.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENTS NOS. 87 AND 58 TO FACILITY OPERATING LICENSES

NOS. DPR-51 AND NPF-6

ARKANSAS POWER & LIGHT COMPANY

ARKANSAS NUCLEAR ONE, UNITS 1 AND 2

DOCKET NOS. 50-313 AND 50-368

INTRODUCTION

By letter dated September 14, 1983, as supplemented by letters dated January 20, 1984 and May 24, 1984, Arkansas Power and Light Company (the licensee or AP&L) proposed amendments to the Technical Specifications (TSs) appended to Facility Operating Licenses Nos. DPR-51 and NPF-6, for Arkansas Nuclear One, Units 1 and 2 (ANO-1 & 2). The amendments would modify the TSs to exempt from the current requirement of a six-month leak test cycle and to require an 18-month leak test cycle for the following specific sealed radioactive sources:

ANO Unit	#Sources	System	Isotope	Activity	Form	Encapsulation
1	4	Area Radiation Monitor (ARM)	Pb	10 μCi	Solid	Electroplated onto ceramic disc
1	1	Boron-ometer	Pu/Be	1.0 Ci	Solid	Encapsulated in Tantalum and stainless steel casing in a locked vessel
2	1	Boron-ometer	Am^{241}/Be	0.72 Ci	Solid	Encapsulated in Tantalum and stainless steel casing contained in a locked vessel

DISCUSSION

The encapsulation and form of these sources is such that activity is not readily removed from the sources' surfaces, and not readily affected by the environment. Additionally, the sources are located in systems/arrangements where the sources' surfaces are not directly accessible to personnel, and mechanical actions involving the sources during system operations are minimal, except during infrequent maintenance and leak checks. This low liability to damage greatly reduces the potential for inadvertent spread of contamination.

The licensee has estimated that the radiation doses of about 0.4 person-Rem per quarter presently required for leak checking these sources would be substantially reduced as an ALARA (as low as is reasonably achievable) measure (e.g., 2.4 person-Rem over 18 months under the present requirements, versus 0.4 person-Rem over 18 months under the proposed requirements with an 18-month leak test requirement. This could result in a dose saving of around 60 person-Rem over the next 30 years. For the boronometer sources, dose and manpower saving are most significant. For the Area Radiation Monitor (ARM) sources, dose and manpower saving as well as reduced access to high radiation area and a lesser impact on plant operations are of major considerations. Of particular concern to the NRC staff is the leak testing required for the ARM source in the incore instrument tunnel leading to the reactor cavity. There has been a trend of overexposures and uncontrolled exposures associated with reactor cavity entrance with thimbles withdrawn, and the extremely high dose rates in the reactor cavity areas create a situation where acute exposure sufficient to cause significant radiation injury is possible. Reduction of leak test frequency can reduce the need for access and thus this very real risk.

Direct leak test sources are supplemented by contaminated surveys of the source environs during relatively frequent routine area surveys and during special surveys when maintenance is performed. These would serve to detect contamination in the unlikely event of a leaking or ruptured source. Additionally, a special caution posting requires that leak testing must be current before maintenance is performed on these sources. The licensee has not experienced any problems with leakage from these sources at Arkansas Nuclear One. Information available to the NRC staff indicates no instances of the rupture or damage of these sources at power reactors during normal use. It appears the greatest risk of source damage is encountered during maintenance and leak test procedures.

EVALUATION

AP&L has identified specific sealed sources to be leak checked on an 18-month cycle at ANO-1 and 2, based on the following: the sources have a low probability of leakage or damage due to their encapsulation and solid form; they are located in systems where mechanical damage is unlikely; there is no history of leakage or damage to such sources; significant savings in dose and manpower can result; impact on plant/system down time is minimized; access to high dose rate areas is reduced; other radiation protection measures including routine surveys and special posting are utilized; and the small increase in the potential for the spread of contamination is more than offset by the reduction of related occupational dose to ALARA levels.

These measures are consistent with staff positions and guidance in Regulatory Guide 8.8 and survey requirements of 10 CFR 20.201(b), and, therefore, we have determined that the proposed changes to the Technical Specifications are acceptable.

ENVIRONMENTAL CONSIDERATION

The amendments involve 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 amendments involve 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 amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet 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 amendments.

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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: November 19, 1984

The following NRC personnel have contributed to this Safety Evaluation:
R. J. Serbu and Guy S. Vissing