December 15, 1988

Docket No. 50-313

Mr. T. Gene Campbell
Vice President, Nuclear
Operations
Arkansas Power and Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Dear Mr. Campbell:

SUBJECT: ISSUANCE OF AMENDMENT NO. 115 TO FACILITY OPERATING LICENSE NO. DPR-51 - ARKANSAS NUCLEAR ONE, UNIT 1 (TAC NO. 68651)

The Commission has issued the enclosed Amendment No. 115 to Facility Operating License No. DPR-51 for the Arkansas Nuclear One, Unit No. 1 (ANO-1). This amendment consist of changes to the Technical Specifications (TSs) in response to your application dated July 20, 1988.

The amendment revises the Technical Specification to specifically provide for a 1 gallon per minute limit on primary-to-secondary leak rate (total steam generator tube leakage).

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next Bi-weekly Federal Register notice.

Sincerely,

/S/

C. Craig Harbuck, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 115 to DPR-51
2. Safety Evaluation

cc w/enclosures:
See next page

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LTR NAME: ANO1 AMENDMENT TAC 68651

PD4/LA	PD4/PE	PD4/PM	OGC-Rockville	PD4/D
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11/30/88	11/30/88	12/07/88	12/13/88	12/15/88

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

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
December 15, 1988

ARKANSAS POWER AND LIGHT COMPANY

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 115
License No. DPR-51

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

   A. The application for amendment by Arkansas Power and Light Company (the licensee) dated July 20, 1988, 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, as amended, 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. DPR-51 is hereby amended to read as follows:

   2. Technical Specifications

      The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 115, 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

José A. Calvo

Jose A. Calvo, Director
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 15, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 115

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Revise the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE PAGES	INSERT PAGES
27	27
29	29

3.1.6 Leakage

Specification

3.1.6.1 If the total reactor coolant leakage rate exceeds 10 gpm, the reactor shall be shutdown within 24 hours of detection.

3.1.6.2 If unidentified reactor coolant leakage (exceeding normal evaporative losses) exceeds 1 gpm or if any reactor coolant leakage is evaluated as unsafe, the reactor shall be shutdown within 24 hours of detection.

3.1.6.3.a If it is determined that any reactor coolant leakage exists through a non-isolable fault in a reactor coolant system strength boundary (such as the reactor vessel, piping, valve body, etc., except steam generator tubes), the reactor shall be shutdown and a cooldown to the cold shutdown condition shall be initiated within 24 hours of detection.

3.1.6.3.b If the total leakage through the tubes of both steam generators equals or exceeds 1.0 gpm, a reactor shutdown shall be initiated within 4 hours and the reactor shall be in the cold shutdown condition within the next 30 hours.

3.1.6.4 If reactor shutdown is required by Specification 3.1.6.1, 3.1.6.2, or 3.1.6.3, the rate of cooldown and the conditions of shutdown shall be determined by the safety evaluation for each case and reported as required by Specification 6.12.3.

3.1.6.5 Action to evaluate the safety implication of reactor coolant leakage shall be initiated within 4 hours of detection. The nature, as well as the magnitude of the leak, shall be considered in this evaluation. The safety evaluation shall assure that the exposure of offsite personnel to radiation is within the guidelines of 10CFR20.

3.1.6.6 If reactor shutdown is required by Specification 3.1.6.1, 3.1.6.2, or 3.1.6.3, the reactor shall not be restarted until the leak is repaired or until the problem is otherwise corrected.

3.1.6.7 When the reactor is at power operation, three reactor coolant leak detection systems of different operating principles shall be in operation. One of these systems is sensitive to radioactivity and consists of a radioactive gas detector and an air particulate activity detector. Both of these instruments may be out-of-service simultaneously for a period of no more than 72 hours provided two other means are available to detect leakage and reactor building air samples are taken and analyzed in the laboratory at least once per shift; otherwise, be in at least Hot Standby within the next 6 hours and in Cold Shutdown within the following 30 hours.

3.1.6.8 Loss of reactor coolant through reactor coolant pump seals and system valves to connecting systems which

b. Total reactor coolant system leakage rate is periodically determined by comparing indications of reactor power, reactor coolant temperature, pressurizer water level and reactor coolant makeup tank level over a time interval. All of these indications are recorded. Since the pressurizer level is maintained essentially constant by the pressurizer level controller, any coolant leakage is replaced by coolant from the reactor coolant makeup tank resulting in a tank level decrease. The reactor coolant makeup tank capacity is 31 gallons per inch of height and each graduation on the level recorder represents 2 inches of tank height. This inventory monitoring method is capable of detecting changes on the order of 62 gallons. A 1 gpm leak would therefore be detectable within approximately 1.1 hours.

As described above, in addition to direct observation, the means of detecting reactor coolant leakage are based on different principles, i.e., activity, sump level and reactor coolant inventory measurements. Two systems of different principles provide, therefore, diversified ways of detecting leakage to the reactor building.

c. The reactor building gaseous monitor is sensitive to low leak rates if expected values of failed fuel exist. The rates of reactor coolant leakage to which the instrument is sensitive are discussed in FSAR Section 4.2.3.8.

The upper limit of 30 gpm is based on the contingency of a hypothetical loss of all AC power. A 30 gpm loss of water in conjunction with a hypothetical loss of all AC power and subsequent cooldown of the reactor coolant system by the atmospheric dump system and steam driven emergency feedwater pump would require more than 60 minutes to empty the pressurizer from the combined effect of system leakage and contraction. This will be ample time to restore both electrical power to the station and makeup flow to the reactor coolant system.

The steam generator tube leakage limit (i.e., primary to secondary leakage limit) in Specification 3.1.6.3 is intended to assure timely shutdown of the plant for appropriate corrective action before rupture of the steam generator tubes occurs under normal operating or postulated accident conditions. These limits also serve to provide added assurance that the dosage contribution from tube leakage will be limited to a small fraction of 10CFR100 limits for a design basis steam generator tube rupture or main steam line break event.

References

FSAR Section 4.2.3.8

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 115 TO

FACILITY OPERATING LICENSE NO. DPR-51

ARKANSAS POWER AND LIGHT COMPANY

ARKANSAS NUCLEAR ONE, UNIT NO. 1

DOCKET NO. 50-313

1.0 INTRODUCTION

By letter dated July 20, 1988, Arkansas Power and Light Company (AP&L or the licensee) requested amendments to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-51 for Arkansas Nuclear One, Unit 1 (ANO-1). The proposed amendment would revise the TSs to specifically provide for a 1 gallon per minute limit on primary-to-secondary leak rate (total steam generator tube leakage). This proposal is in response to NRC staff recommendations in Generic Letter 85-02 and subsequent discussions with the NRC staff on this matter.

Discussions:

Presently, the ANO-1 Technical Specifications do not have specific limits for primary-to-secondary leakage. Total reactor coolant system (RCS) leakage is presently limited to 10 gpm and unidentified RCS leakage is limited to 1.0 gpm.

The Standard Technical Specifications (STS) for Babcock & Wilcox plants (NUREG-0103) specify a 1.0 gpm limit for total primary-to-secondary leakage (i.e., from both steam generators) and a 500 gallons-per-day (gpd) (approximately 0.35 gpm) limit for leakage from each individual steam generator. The 1.0 gpm limit on total primary-to-secondary leakage is intended to ensure that the dosage contribution from steam generator tube leakage will be limited to a small fraction of 10 CFR Part 100 limits during design basis accidents. The 500 gpd limit is intended to ensure that leaking tubes will not burst under the spectrum of normal operating, transient, and postulated accident conditions.

In NRC Generic Letter 85-02, the staff recommended that all pressurized water reactors adopt Technical Specification limits which are at least as restrictive as those in the STS. However, the licensee is proposing only to incorporate the STS 1.0 gpm limit for a total primary-to-secondary leakage, and not the STS 500 gpd limit on primary-to-secondary leakage from each individual steam generator. This proposal notwithstanding, the licensee states that as a matter of conservative operating philosophy and commitment to ALARA principles, it initiates a plant shutdown when primary-to-secondary leakage reaches the point where the defective tube can be identified for repair following shutdown, well below a 1 gpm rate, generally on the order of 0.2 to 0.3 gpm maximum.

2.0 EVALUATION

Although the staff continues to encourage all PWR licensees to adopt the STS limits in their entirety, the licensee's proposal represents a significant improvement over the existing Technical Specifications for ANO-1. Furthermore, the proposed change would bring the ANO-1 Technical Specification leak rate limit to within the envelope of limits existing at several other B&W plants.

3.0 FINDINGS

The proposed change establishes a limit on allowable primary-to-secondary leakage which is within the envelope of limits at other B&W plants. This change will provide added assurance that the integrity of the steam generator tubes will continue to be maintained and is, therefore, acceptable to NRC staff.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment involves a change in leakage rate 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 off-site, and that there is no significant increase in individual or cumulative occupational radiation exposures. 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. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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

The staff 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, 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.

Date: December 15, 1988

Principal Contributor: Emmett L. Murphy, EMTB