

July 6, 1978

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Docket No. 50-313

Arkansas Power & Light Company
ATTN: Mr. William Cavanaugh, III
Executive Director, Generation
and Construction Department
P. O. Box 551
Little Rock, Arkansas 72203

Gentlemen:

The Commission has issued the enclosed Amendment No. ³³ to Facility Operating License No. DPR-51 for Arkansas Nuclear One, Unit No. 1 (ANO-1). The amendment consists of changes to the Technical Specifications in response to your license amendment request dated March 14, 1978.

The amendment modifies the Technical Specifications for ANO-1 to increase the volume requirements and to modify the concentration requirements of the boric acid addition tank.

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

Sincerely,

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:

1. Amendment No. 33 to DPR-51
2. Safety Evaluation
3. Notice

cc w/enclosures:
See next page

Cont. 1
GD

OFFICE →	ORB #4 <i>W</i>	ORB #4	<i>C-RS:DoR</i> DSS	OELD <i>Woodhead</i>	ORB #4 <i>RReid</i>
SURNAME →	RIngram	GVissing:mj	PCheck		
DATE →	6/14/78	6/15/78	6/15/78	6/17/78	7/16/78

Arkansas Power & Light Company

cc w/enclosures:
Phillip K. Lyon, Esquire
House, Holms & Jewell
1550 Tower Building
Little Rock, Arkansas 72201

Mr. Daniel H. Williams
Manager, Licensing
Arkansas Power & Light Company
Post Office Box 551
Little Rock, Arkansas 72203

Mr. John W. Anderson, Jr.
Plant Superintendent
Arkansas Nuclear One
Post Office Box 608
Russellville, Arkansas 72801

Arkansas Polytechnic College
Russellville, Arkansas 72801

Honorable Ermil Grant
Acting County Judge of Pope County
Pope County Courthouse
Russellville, Arkansas 72801

Chief, Energy Systems Analyses
Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 20460

U. S. Environmental Protection Agency
Region VI Office
ATTN: EIS COORDINATOR
1201 Elm Street
First International Building
Dallas, Texas 75270

cc w/enclosures & incoming dtd:
3/14/78
Director, Bureau of Environmental
Health Services
4815 West Markham Street
Little Rock, Arkansas 72201



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

ARKANSAS POWER & LIGHT COMPANY

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE - UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 33
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 March 14, 1978, 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 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.

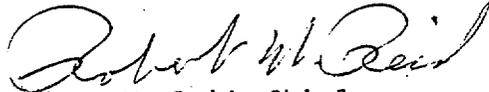
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-51 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 33, 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 W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 6, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 33

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages.

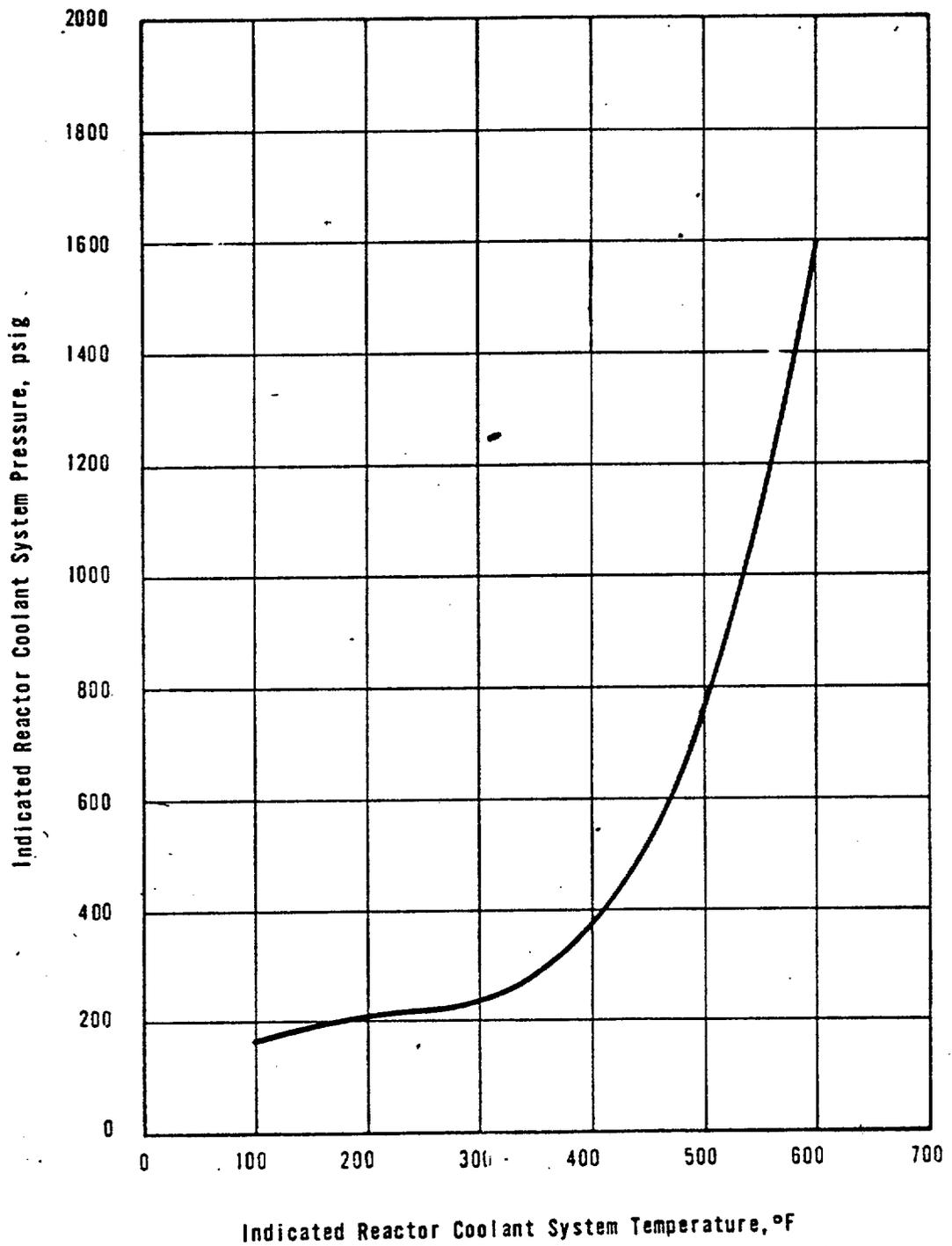
Pages

34

35

35a (added)

The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf page is also provided to maintain document completeness.



ARKANSAS POWER & LIGHT CO.
 ARKANSAS NUCLEAR ONE-UNIT 1

LIMITING PRESSURE VS TEMPERATURE
 FOR CONTROL ROD DRIVE OPERATION
 WITH 100 STD CC/LITER H₂O

FIG. NO.
 3.1.9-1

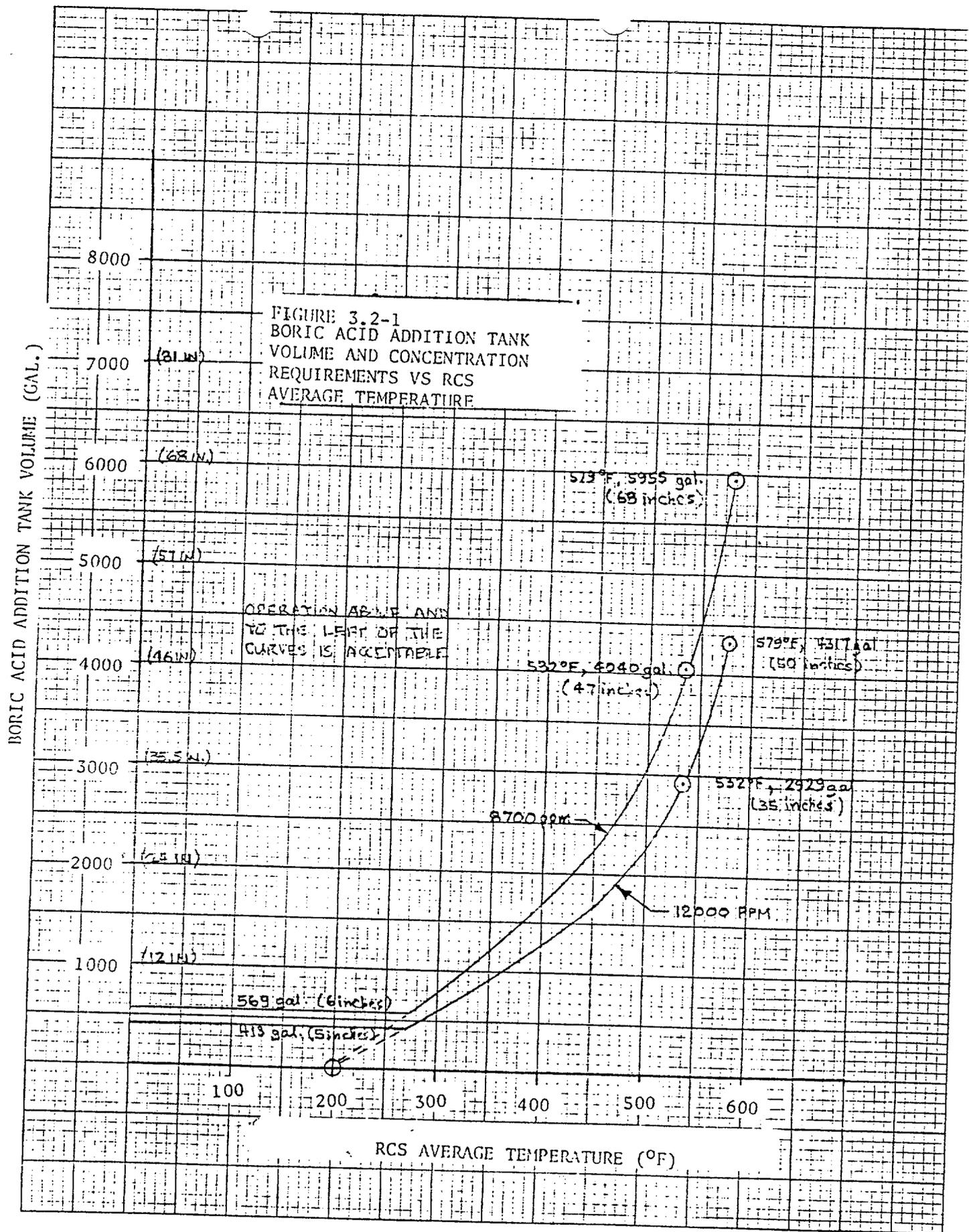
Minimum volumes (including a 10% safety factor) as specified by Figure 3.2.1 for the boric acid addition tank or 27,633 gallons of 2270 ppm boron as boric acid solution in the borated water storage tank (3) will each satisfy this requirement. The specification assures that adequate supplies are available whenever the reactor is heated above 200°F so that a single failure will not prevent boration to a cold condition. The minimum volumes of boric acid solution given include the boron necessary to account for xenon decay.

The principal method of adding boron to the primary system is to pump the concentrated boric acid solution (8700 ppm boron, minimum) into the makeup tank using the 25 gpm boric acid pumps. Using only one of the two boric acid pumps, the required volume of boric acid can be injected in less than three hours. The alternate method of addition is to inject boric acid from the borated water storage tank using the makeup pumps; the required volume of boric acid can be injected in less than two hours using only one of the makeup pumps.

Concentration of boron in the boric acid addition tank may be higher than the concentration which would crystallize at ambient conditions. For this reason and to assure a flow of boric acid is available when needed this tank and its associated piping will be kept 10°F above the crystallization temperature for the concentration present. Once in the makeup system, the concentrate is sufficiently well mixed and diluted so that normal system temperatures assure boric acid solubility.

REFERENCES

- (1) FSAR, Section 9.1; 9.2
- (2) FSAR, Figure 6-2
- (3) FSAR, Section 3.3





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 33 TO FACILITY OPERATING LICENSE NO. DPR-51

ARKANSAS POWER AND LIGHT COMPANY

ARKANSAS NUCLEAR ONE, UNIT NO. 1

DOCKET NO. 50-313

Introduction

By letter dated March 14, 1978, Arkansas Power and Light Company (AP&L or the licensee) requested amendment to Facility Operating License No. DPR-51. The amendment would modify the Technical Specifications for Arkansas Nuclear One - Unit 1 (ANO-1) to increase the volume requirements and to modify the concentration requirements of the boric acid addition tank.

Background

The current Technical Specifications require at least the equivalent of 47 inches (550 cu. ft.) of 8700 parts per million (ppm) boric acid solution in the boric acid addition tank whenever the reactor primary coolant temperature is above 200°F. Recent investigation and analysis revealed that the volume requirement is insufficient to assure a 1% delta k/k shutdown margin for all zero power temperature conditions above cold shutdown at the worst time in core life with a stuck control rod assembly and after xenon decay.

Discussion and Evaluation

The proposed change would change the boric acid addition tank volume and concentration requirement to be dependent upon average reactor coolant temperature. The proposed change would 1) increase the required volume of boric acid solution at 8700 ppm when the reactor would be in the hot shutdown condition, and 2) provide sufficient quantity of boric acid to assure a 1% delta k/k shutdown margin at the worst time of core life with a stuck control rod assembly and after xenon decay at all temperatures above cold shutdown. The proposed modification would also provide an alternate or smaller volume versus average reactor coolant temperature requirement of the boric acid addition tank with boric acid solution concentration of 12,000 ppm. This specification would also assure a 1% shutdown margin above 200°F. For both proposed requirements the boric acid solution would be required to be maintained at a temperature at least 10°F above the crystallization temperature. The proposed change in format for the boric acid volume requirements of the boric acid addition tank would reduce the volume requirements over the present requirements when the reactor coolant would be at temperatures less than the temperature of the hot shutdown condition. This would allow less delay during plant cooldown to make up the boric

acid batches to the boric acid addition tank. It would maintain at least a 1% shutdown margin above 200°F, which is acceptable.

Based on the above considerations, we find the proposed change would resolve the deficiency in the current Technical Specifications, would not result in a decrease in the safety margin and is acceptable.

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.

Dated: July 6, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-313ARKANSAS POWER & LIGHT COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 33 to Facility Operating License No. DPR-51, issued to Arkansas Power & Light Company (the licensee), which revised the Technical Specifications for operation of Arkansas Nuclear One, Unit No. 1 (ANO-1) located in Pope County, Arkansas. The amendment is effective as of its date of issuance.

The amendment modifies the Technical Specifications for ANO-1 to increase the volume requirements and to modify the concentration requirements of the boric acid addition tank.

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

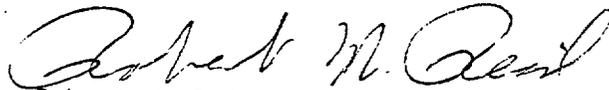
The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR 51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

- 2 -

For further details with respect to this action, see (1) the licensee's application for amendment dated March 14, 1978, (2) Amendment No. 33 to License No. DPR-51, and (3) the Commission's related Safety Evaluation. All 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 Polytechnic College, Russellville, Arkansas. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 6th day of July 1978.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors