MAR 01 1983

DISTRIBUTION:
Docket File
NRC PDR
L PDR
ORB#4 Rdg
Docket No. 50-313

G ray File +4
DEisenhut
RIngram
GVissing
OELD
AEOD
IE-Harmon (2)
EJordan
JTaylor

ACRS-10
HOrnstein
EBlackwood
RDiggs
CMiles
DBrinkman
LSchneider
TBarnhart-4
ASLAB

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

Dear Mr. Cavanaugh:

The Commission has issued the enclosed Amendment No. 70 to Facility Operating License No. DPR-51 for Arkansas Nuclear One, Unit No. 1 (ANO-1). This amendment adds License Condition 2.c.(7) regarding implementation of a secondary water chemistry monitoring program.

Your application for this change dated November 9, 1982, was in response to our letter dated August 31, 1982, requesting the proposed amendment and information concerning your secondary water chemistry monitoring program. The operating license currently does not provide for any requirements to assure that the operators of the plant would properly monitor and control water chemistry to minimize corrosion of steam generator tubes. Based on the knowledge gained in recent years, we believe the most effective way of assuring that steam generator corrosion will be minimized is through a license condition that requires the implementation of a secondary water chemistry monitoring and control program containing appropriate procedures and administrative controls which account for site and plant specific factors that affect chemistry conditions in steam generators. Such a license condition provides assurance of proper attention to controlling secondary water chemistry, while also providing the needed flexibility to deal with any off-normal conditions that might arise. Moreover, we have concluded that such a license condition, in conjunction with existing Technical Specifications on steam generator tube leakage and inservice inspection, provides the most practical and comprehensive means of assuring that steam generator tube integrity is maintained. We find that your proposed license condition is acceptable for this purpose.

We have also reviewed the information provided in your November 9, 1982, letter concerning your secondary water chemistry monitoring and control program for ANO-1 and conclude that it is acceptable. Our evaluation is enclosed.

OFFICE							
SURNAME	8303110398 830301 PDR ADOCK 05000313 P PDR						
DATE							

NRC FORM 318 (10-80) NRCM 0240 OFFICIAL RECORD COPY USGPO: 1981—335-960

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.

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 an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, 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.

A copy of the Notice of Issuance is also enclosed.

Sincerely,

*ORIGINAL SIGNED BY
JOHN F. STOLZ*

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

Enclosures:
1. Amendment No. 70
2. Safety Evaluation
3. Notice

cc w/enclosures:
See next page

OFFICE	ORB#4:DL	ORB#4:DL	C-ORB#4:DL	AD-OR:DL	OELD		
SURNAME	RIngram	GWessling/cb	JStolz	GLainas	M. KARMAN	Grotenhuis	
DATE	2/15/83	2/15/83	2/15/83	2/15/83	2/18/83	2/15/83	

Arkansas Power & Light Company

MAR 01 1983

cc w/enclosure(s):

Mr. John R. 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
Russellville, Arkansas 72801

Mr. Leonard Joe Callan
U.S. Nuclear Regulatory Commission
P. O. Box 2090
Russellville, Arkansas 72801

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

Mr. Nicholas S. Reynolds
Debevoise & Liberman
1200 17th Street, NW
Washington, DC 20036

Director, Bureau of Environmental
Health Services
4815 West Markham Street
Little Rock, Arkansas 72201

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

Regional Radiation Representative
EPA Region VI
1201 Elm Street
Dallas, Texas 75270

Mr. John T. Collins, Regional Administrator
U. S. Nuclear Regulatory Commission, Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

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. 70
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 November 9, 1982, 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, Facility Operating License No. DPR-51 is hereby amended by adding paragraph 2.c.(7) to read as follows:

Secondary Water Chemistry Monitoring

A secondary water chemistry monitoring program shall be implemented to minimize steam generator tube degradation. This program shall include:

1. Identification of a sampling schedule for the critical parameters and control points for these parameters;

2. Identification of the procedures used to measure the values of the critical parameters;

3. Identification of process sampling points;

4. Procedures for the recording and management of data;

5. Procedures defining corrective actions for off-control point chemistry conditions; and

6. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events required to initiate a corrective action.

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

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz

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

Date of Issuance: MAR 0 1 1983

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CONCERNING

THE SECONDARY WATER CHEMISTRY MONITORING AND CONTROL PROGRAM

FOR

ARKANSAS NUCLEAR ONE, UNIT NO. 1

ARKANSAS POWER AND LIGHT COMPANY

DOCKET NO. 50-313

Introduction

In response to our request dated August 31, 1982, Arkansas Power and Light Company (the licensee or AP&L) provided, by letter dated November 9, 1982, information concerning the secondary water chemistry monitoring and control program to minimize steam generator tube degradation for Arkansas Nuclear One, Unit No. 1.

Background

In late 1975, we incorporated provisions into the Standard Technical Specifications (TSs) that required limiting conditions for operation and surveillance requirements for secondary water chemistry parameters. The TSs for all pressurized water reactor plants that have been issued an operating license since 1972 contain either these provisions or a requirement to establish these provisions after baseline chemistry conditions have been determined. The intent of the provisions was to provide added assurance that the operators of licensed plants would properly monitor and control secondary water chemistry to limit corrosion of steam generator components, such as tubes and tube support plates.

In a number of instances, the TSs have significantly restricted the operational flexibility of some plants with little or no benefit with regard to limiting degradation of steam generator tubes and the tube support plates. Based on this experience and the knowledge gained in recent years, we have concluded that TS limits are not the most effective way of assuring that steam generator degradation will be minimized.

Due to the complexity of the corrosion phenomena involved and the state-of-the-art as it exists today, we are of the opinion that, in lieu of specifying limiting conditions in the TS, a more effective approach would be to institute a license condition that requires the implementation of a secondary water chemistry monitoring and control program containing appropriate procedures and administrative controls.

The required program and procedures are to be developed by licensees with input from their reactor vendor or other consultants, to account for site and plant specific factors that affect water chemistry conditions in the steam generators. In our view, plant operation following such procedures would provide assurance that licensees would devote proper attention in controlling secondary water chemistry, while also providing the needed flexibility to allow them to deal effectively with an off-normal condition that might arise.

Consequently, by letter dated July 23, 1979, we requested that the licensee propose a secondary water chemistry program which would be referenced in a condition to the operating license and would replace any proposed TS on secondary water chemistry. AP&L responded by letter dated September 20, 1979. The information in this letter was insufficient to allow us to complete our evaluation of the secondary water chemistry program. We therefore requested the licensee to supply additional information. This information was submitted by letter dated November 9, 1982, and is being evaluated in this report.

Discussion

The secondary water chemistry program, outlined in the information submitted by letter dated November 9, 1982, addresses the six program criteria of our staff position as discussed below. It is based on the steam generator water chemistry program recommended by the NSSS vendor (Babcock & Wilcox).

The program monitors the critical parameters to inhibit steam generator corrosion and tube degradation. The limits and sampling schedules for these parameters have been established for (a) steam generator samples under cold shutdown/wet layup mode, (b) feedwater and steam generator blowdown samples under startup/hot standby/steaming at <15% full power modes, and (c) feedwater and condensate pump discharge samples under power operation mode. Sampling frequencies, control points for the critical parameters, and process sampling points have been identified. The analytical techniques used for measuring the values of the critical parameters have been similarly identified and conform to the recommendations of the NSSS vendor. The Chemistry and Environmental Supervisor and/or the Shift Supervisor are charged with the responsibility for interpretation of secondary-side water chemistry data and implementation of specific corrective actions.

Evaluation

We find that the licensee's secondary side chemistry monitoring and control program:

(a) is capable of reducing the probability of abnormal leakage in the reactor coolant pressure boundary by inhibiting steam generator corrosion and tube degradation and thus meets the requirements of General Design Criterion 14;

(b) adequately addresses all of the program criteria delineated in the NRC staff position on control and monitoring of secondary water;

(c) is based on the NSSS vendor's recommended steam generator water chemistry program;

(d) monitors the secondary coolant purity in accordance with Branch Technical Position MTEB 5-3, Revision 2, and thus meets Acceptance Criterion 3 of Standard Review Plan Section 5.4.2.1, "Steam Generator Materials", Revision 1;

(e) monitors the water quality of the secondary side water in the steam generators to detect potential condenser cooling water in-leakage to the condensate, and thus meets Position II. 3.f.(1) of Branch Technical Position MTEB 5-3, Revision 2;

(f) describes the methods for control of secondary side water chemistry data and record of management procedures and corrective actions for off-control point chemistry and thus meets Positions II. 3.f.(2)-(6) of Branch Technical Position METB 5-3, Revision 2.

Conclusion

On the basis of our evaluation, we conclude that the secondary water chemistry monitoring and control program for ANO-1 meets (1) the requirements of General Design Criterion 14 insofar as secondary water chemistry control assures primary boundary material integrity, (2) Acceptance Criterion 3 of Standard Review Plan Section 5.4.2.1, Revision 1, (3) Position II.3 of Branch Technical Position MTEB 5-3, Revision 2, and (4) the program criteria in the staff's position and, therefore, is acceptable.

Dated: MAR 0 1 1983

The following NRC personnel have contributed to this Safety Evaluation: Guy S. Vissing and Brookhaven National Laboratory.

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-313

ARKANSAS POWER & LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 70 to Facility Operating License No. DPR-51, issued to Arkansas Power and Light Company (the licensee), which added a license condition for operation of Arkansas Nuclear One, Unit No. 1 (ANO-1) located in Pope County, Arkansas. The amendment is effective as of the date of issuance.

The amendment adds a condition to the license regarding the implementation of a secondary water chemistry monitoring program.

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), and environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the licensee's application dated November 9, 1982, (2) Amendment No. 70 to License No. DPR-51, and (3) the Commission's letter to the licensee dated March 1, 1983. 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 Tech University, 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 Licensing.

Dated at Bethesda, Maryland, this 1st day of March 1983.

FOR THE NUCLEAR REGULATORY COMMISSION

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