

March 24, 1978

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. 32 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 letter dated December 8, 1977, your license amendment request dated February 27, 1978, and staff discussions.

The amendment modifies the ANO-1 Technical Specifications to include the requirement for a ten second closure time for the dampers of the ANO-1 control room heating, ventilation, and air conditioning system. This closure time is consistent with the isolation time approved for Arkansas Nuclear One, Unit No. 2 (ANO-2), which will, in the near future, share a common control room.

As part of our review, we discussed with your staff the subject of toxic gas intrusion at ANO-1 and have decided to continue that matter as a separate issue. This is being addressed in a separate letter.

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

Const. 1
60

Enclosures and cc: See next page

modified satisfactorily 3/24/78 DB
not concern on chlorine needs to be included (potentially) increase substantially beyond as addressed
rationale

OFFICE	ORB#4:DOR	ORB#2:DOR	ORB#4:DOR	EEB:DOR	OELD	C-ORB#4:DOR
SURNAME	RIngram	Ra...de	G...ng:rm	BGrimes	Woodhead	RReid
DATE	3/10/78	3/1/78	3/24/78	3/24/78	3/24/78	3/24/78

Docket File

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- Attorney, OELD
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- BJones (4)
- BScharf (15)
- JMcGough
- BHarless
- DEisenhut
- ACRS (16)
- OPA, Clare Miles
- DRoss
- Gray File

- 4 Extra Cys
- TBAbernathy
- JRBuchanan
- BGrimes

Enclosures:

- 1. Amendment No. 32 to DPR-51
- 2. Safety Evaluation
- 3. Notice

cc w/enclosures: See next page

OFFICE >						
SURNAME >						
DATE >						

Arkansas Power & Light Company

cc w/enclosures:

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Director, Bureau of Environmental Health Services -- w/cy of 12/8/77 and 2/27/78 APL filings
4815 West Markham Street
Little Rock, Arkansas 72201

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

Chief, Energy Systems Analyses
Branch (AW-459)
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U. S. Environmental Protection Agency
Region VI Office
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First International Building
Dallas, Texas 75270



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. 32
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 February 27, 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. 32, 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: March 24, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 32

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Revise the Appendix A Technical Specifications as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
60	60
61	61
107	107

Changes on the revised pages are identified by marginal lines.

3.9 CONTROL ROOM EMERGENCY AIR CONDITIONING AND ISOLATION SYSTEM

Applicability

Applies to the operability of the control room emergency air conditioning and isolation system.

Objective

To ensure that the control room emergency air conditioning and isolation system will perform within acceptable levels of efficiency and reliability.

Specification

- 3.9.1 Two independent circuits of the control room emergency air conditioning and isolation system shall be operable whenever reactor building integrity is required with the following performance capabilities:
- a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flow ($\pm 10\%$) on HEPA filters and charcoal adsorber banks shall show $\geq 99\%$ DOP removal and $\geq 99\%$ halogenated hydrocarbon removal.
 - b. The results of laboratory carbon sample analysis from the charcoal adsorber banks shall show $\geq 90\%$ radioactive methyl iodide removal at a velocity within $\pm 20\%$ of system design, 0.05 to 0.15 mg/m³ inlet iodide concentration, $\geq 95\%$ R. H. and $\geq 125\text{F}$.
 - c. Fans shall be shown to operate within $\pm 10\%$ of design flow.
 - d. The pressure drop across the combined HEPA filters and charcoal adsorber banks shall be less than 6 inches of water at system design flow rate ($\pm 10\%$).
 - e. One circuit of the system shall be capable of automatic initiation.
 - f. The dampers shall isolate the control room within 10 seconds after receipt of a high radiation signal.
- 3.9.2 If one circuit of the control room emergency air conditioning and isolation system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days provided that during such seven days all active components of the other circuit shall be operable.
- 3.9.3 If the requirements of Specification 3.9.1.f cannot be met, either close the isolation dampers or disable the supply fan.
- 3.9.4 If the requirements of Specifications 3.9.1 and 3.9.2 cannot be met the reactor shall be placed in the cold shutdown condition within 36 hours.

Bases

The control room emergency air conditioning and isolation system is designed to isolate the control room and filter the control room atmosphere during control room isolation conditions. One circuit is designed to automatically start upon control room isolation and the other circuit to be manually started on failure of the first circuit.

High efficiency particulate air (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential intake of radioiodine to the control room. The in-place test results should indicate a system leak tightness of less than 1 percent bypass leakage for the charcoal adsorbers and a HEPA efficiency of at least 99 percent removal of DOP particulates. The laboratory carbon sample test results should indicate a radioactive methyl iodide removal efficiency of at least 90 percent for expected accident conditions. If the efficiencies of the HEPA filters and charcoal adsorbers are as specified, the resulting doses will be less than the allowable levels stated in Criterion 19 of the General Design Criteria for Nuclear Power Plants, Appendix A to 10 CFR Part 50. Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers.

If one circuit of the control room emergency air conditioning and isolation system is found to be inoperable, there is not an immediate threat to the control room and reactor operation may continue for a limited period of time while repairs are being made.

If the control room isolation dampers are made or found to be inoperable, continued reactor operation is allowed provided the potential for outside air flow is removed as provided by Specification 3.9.3. The 10 second closure time requirement is far below that required to support accident dose calculations and is therefore conservative.

4.10 CONTROL ROOM EMERGENCY AIR CONDITIONING AND ISOLATION SYSTEM SURVEILLANCE

Applicability

Applies to the surveillance of the control room emergency air conditioning and isolation system.

Objective

To verify an acceptable level of efficiency and operability of the control room emergency air conditioning and isolation system.

Specification

- 4.10.1 At intervals not to exceed 18 months, the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 6 inches of water at system design flow ($\pm 10\%$).
- 4.10.2 At intervals not to exceed 18 months, automatic initiation of the control room emergency air conditioning and isolation system shall be demonstrated to meet the requirements of Specification 3.9.
- 4.10.3.a. The tests and sample analysis of Specification 3.9.1.a,b, & c, shall be performed at intervals not to exceed 18 months or after every 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.
- b. Cold DOP testing shall also be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.
- c. Halogenated hydrocarbon testing shall also be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.
- 4.10.4 Each circuit shall be operated at least 1 hour every month.

Bases

The purpose of the control room filtering system is to limit the particulate and gaseous fission products to which the control area would be subjected during an accidental radioactive release in or near the Auxiliary Building. The system is designed with 100 percent capacity filter trains which consist of a prefilter, high efficiency particulate filters, charcoal adsorbers and a fan.

Since the system is not normally operated, a periodic test is required to insure operability when needed. During this test the system will be inspected for such things as water, oil, or other foreign material; gasket deterioration,



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 32 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 December 8, 1977, Arkansas Power and Light Company (AP&L) requested approval for a modification which would change the control room ventilation suction dampers closure time limit for Arkansas Nuclear One, Unit No. 1 (ANO-1). As a result of discussions with our staff, AP&L requested, by letter dated February 27, 1978, an amendment to Facility Operating License No. DPR-51. The amendment would modify the Technical Specifications to require: (1) a ten (10) second time limit for the isolation of the control room after detection of radioactivity in the ventilation system, (2) periodic verification of the time limit by testing, and (3) that either the dampers be closed or the supply fan be disabled if the isolation time limit could not be met.

Discussion

In the ANO-1 Final Safety Analysis Report (FSAR), AP&L indicated that the control room ventilation system isolation dampers would close within three (3) seconds after detection of high radiation. According to AP&L, this time limit was based on performance information provided by an equipment supplier. However, during testing after installation, it was found that the dampers require several minutes to close. There are no closure time limits specified in the current Technical Specifications.

Evaluation

The proposed facility modifications would increase the time for the isolation of the control room from radioactivity intrusion from three (3) seconds as indicated in the FSAR to ten (10) seconds. This could increase the consequences of accidents involving radioactivity releases from that which was originally assumed. However, an additional seven (7) seconds of radioactivity intake to the control room from outside air would not significantly increase the radiation exposure estimates for the control room personnel after a design basis accident (DBA).

Of all the DBA, the design basis loss of coolant accident (LOCA) is usually estimated to result in the largest releases of radioactivity to the environment. The releases are assumed to continue for greater than 30 days after the accident. During those 30 days, the control room operators would receive most of their radiation exposure from their transit to and from the site and from normal infiltration of outside air to the control building. While the increase in operator radiation exposure during a theoretical seven second increase in the control room isolation time would not significantly increase the estimated operator doses in a DBA, the decrease in control room isolation time from that actually achievable with the current system to that achievable with the proposed system could result in a decrease in dose that is significant.

We have determined that AP&L may implement the control room ventilation system modifications necessary to reduce the ANO-1 damper closure time to ten seconds. This will significantly improve the operators' protection from airborne contaminants from that afforded by the current damper design. For this reason, we find acceptable AP&L's proposed changes to the ANO-1 Technical Specifications on the control room emergency ventilation system.

Our review of this action found that there is chlorine on the site and the current Technical Specifications do not require control room isolation from chlorine intrusion. We are currently reviewing this aspect as a separate issue. For the interim period of time required to conclude this action, we find it acceptable to continue to operate because:

- (1) the probability of a chlorine release large enough to threaten significant contamination in the ANO-1 control room air intake is small;
- (2) The vertical and horizontal distances between the ANO-1 control room air intake and the chlorine storage area further reduce the likelihood of hazardous levels of chlorine reaching the control room operations, should a chlorine release occur, because of the greater density of chlorine gas and diffusion, respectively; and
- (3) chlorine detectors for ANO-2 in the control room air intakes common to ANO-1 and ANO-2 are already, or very soon will be, installed and operable and will be required when the ANO-2 operating license is issued (currently estimated to be issued in June 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. 32 to Facility Operating License No. DPR-51, issued to Arkansas Power & Light Company (AP&L or the licensee), which revised the Technical Specifications for operation of Arkansas Nuclear One, Unit No. 1 (ANO-1 or the facility) located in Pope County, Arkansas. The amendment is effective as of its date of issuance.

The amendment revised the Technical Specifications for the facility to incorporate the requirement for a ten second closure time for the dampers of the ANO-1 control room ventilation system and to include surveillance requirements for the isolation system. The ten second isolation time is a slight relaxation of the AP&L commitment in the ANO-1 Final Safety Analysis Report, but represents a significant improvement over the system as installed. A separate but related issue, that of toxic gas intrusion at ANO-1, is being addressed by separate correspondence.

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.

- 2 -

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.

For further details with respect to this action, see (1) the licensee's letter dated December 8, 1977, and the application for amendment dated February 27, 1978, (2) Amendment No. 32 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 24th day of March 1978.

FOR THE NUCLEAR REGULATORY COMMISSION



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

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: March 24, 1978