

SEPTEMBER 16 1980

Dockets Nos. 50-313 and 50-368

Mr. William Cavanaugh, III
Vice President, Generation
and Construction
Arkansas Power and Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Dear Mr. Cavanaugh:

The Commission has issued the enclosed Amendments Nos. 46 and 15 to Facility Operating Licenses Nos. DPR-51 and NPF-6 for Arkansas Nuclear One, Units Nos. 1 and 2, respectively. The amendments consist of changes to the Environmental Technical Specifications in response to your request dated October 31, 1979. During our review of your proposed amendments, we found that certain modifications were necessary to meet our requirements. Your staff has agreed to these modifications and they have been incorporated in these amendments.

The amendments revise the Environmental Technical Specifications relating to the design objective for radioactive gaseous releases, the requirements for a quarterly report on radioactive gaseous releases, the allowable hourly radioactive gaseous release rate, and the maximum allowable radioactive gaseous release in a calendar quarter. The revisions comply with the applicable requirements of 10 CFR Part 50, Appendix I.

Since these revisions are issued before the completion of the current calendar quarter and since these revisions specify the limiting quarterly radioactive gaseous releases, we consider the changes to be applicable for this calendar quarter.

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

Sincerely,

Original signed by
Robert W. Reid

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

8009300145

Enclosures:

- 1. Amendment No. 46 to DPR-51
- 2. Amendment No. 15 to NPF-6
- 3. Safety Evaluation
- 4. Notice of Issuance

CP
60

cc	w/enclosures:	See next page				
OFFICE						
SURNAME						
DATE						

SEPTEMBER 16 1980

Distribution

Jocket Files 50-313
and 50-368

- NRC PDRs (2)
- Local PDR
- TERA
- NSIC
- NRR Reading
- ORB4 Reading
- ORB2 Reading
- H. Denton
- D. Eisenhut
- R. Purple
- R. Tedesco
- G. Lainas
- T. Novak
- R. Reid
- R. Clark
- G. Vissing
- R. Ingram
- R. Martin
- P. Kreutzer
- Attorneys, OELD (2)
- I&E (5)
- ACRS (16)
- B. Scharf (10)
- ~~ACRS (16)~~
- B. Jones (8)
- J. Roe
- J. Heltemes
- R. Diggs
- C. Miles
- C. Stephens
- Gray Files-2
- XTRAS-4
- HORNSTEIN
- BLACKWOOD

*Concern subject
to in copy of
documents attached*

*done
in 9/16*
*concern letter
to amendment
and Fed. Reg. notice
subject to
comment
on
notice*

DSI WRAB
TMD
09/14/80

DSI ETSB
WPG
09/14/80

DL:AD:OR
TMNovak
09/15/80

OELD
M. Rothchild
09/15/80

OFFICE	DL:ORB4	DL:ORB4	DL:ORB4	DL:ORB2	DL:ORB2	DL:ORB2
SURNAME	GVissing:jb	RIngram	RReid	RMartin	PKreutzer	RAClark
DATE	09/16/80	09/16/80	09/15/80	09/16/80	09/16/80	09/16/80

14 DEC 20 1980



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

DISTRIBUTION:
Docket File
ORB#4 Rdg
RIngram

September 16, 1980

Docket No. 50-313 and 50-368

Docketing and Service Section
Office of the Secretary of the Commission

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS NOS. 1 & 2

Two signed originals of the Federal Register Notice identified below are enclosed for your transmittal to the Office of the Federal Register for publication. Additional conformed copies (12) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for Submission of Views on Antitrust Matters.
- Notice of Availability of Applicant's Environmental Report.
- Notice of Proposed Issuance of Amendment to Facility Operating License.
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).
- Other: Amendments Nos. 46 & 15
Referenced documents have been provided PDR

Division of Licensing, ORB#4
Office of Nuclear Reactor Regulation

Enclosure:
As Stated

OFFICE	ORB#4:DL <i>ni</i>				
SURNAME	RIngram/cb				
DATE	9/16/80				



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

September 16, 1980

Dockets Nos. 50-313
and 50-368

Mr. William Cavanaugh, III
Vice President, Generation
and Construction
Arkansas Power and Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Dear Mr. Cavanaugh:

The Commission has issued the enclosed Amendments Nos. 46 and 15 to Facility Operating Licenses Nos. DPR-51 and NPF-6 for Arkansas Nuclear One, Units Nos. 1 and 2, respectively. The amendments consist of changes to the Environmental Technical Specifications in response to your request dated October 31, 1979. During our review of your proposed amendments, we found that certain modifications were necessary to meet our requirements. Your staff has agreed to these modifications and they have been incorporated in these amendments.

The amendments revise the Environmental Technical Specifications relating to the design objective for radioactive gaseous releases, the requirements for a quarterly report on radioactive gaseous releases, the allowable hourly radioactive gaseous release rate, and the maximum allowable radioactive gaseous release in a calendar quarter. The revisions comply with the applicable requirements of 10 CFR Part 50, Appendix I.

Since these revisions are issued before the completion of the current calendar quarter and since these revisions specify the limiting quarterly radioactive gaseous releases, we consider the changes to be applicable for this calendar quarter.

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

Sincerely,

A handwritten signature in cursive script, reading "Robert W. Reid".

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

Enclosures:

1. Amendment No. 46 to DPR-51
2. Amendment No. 15 to NPF-6
3. Safety Evaluation
4. Notice of Issuance

cc w/enclosures: See next page

Arkansas Power & Light Company

cc w/enclosure(s):

Mr. David C. Trimble
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. William Johnson
U.S. Nuclear Regulatory Commission
P. O. Box 2090
Russellville, Arkansas 72801

Mr. Robert B. Borsum
Babcock & Wilcox
Nuclear Power Generation Division
Suite 420, 7735 Old Georgetown Road
Bethesda, Maryland 20014

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

Arkansas Polytechnic College
Russellville, Arkansas 72801

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

Mr. Paul F. Levy, Director
Arkansas Department of Energy
3000 Kavanaugh
Little Rock, Arkansas 72205

Director, Technical Assessment
Division
Office of Radiation Programs
(AW-459)
U. S. Environmental Protection Agency
Crystal Mall #2
Arlington, Virginia 20460

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

cc w/enclosure(s) & incoming dtd.:
10/31/79

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 AND LIGHT COMPANY

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 46
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 October 31, 1979, 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.

8009300148

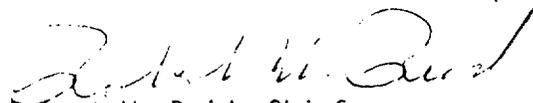
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-51 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 46, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 16, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 46

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Replace the following pages of the Appendix B Technical Specifications with the enclosed pages. The revised pages are identified by Amendment Number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Pages

2-9

2-12

2-14a (new)

2.4 Radioactive Discharge

Objective

To define the limits and conditions for the controlled release of radioactive effluents to the environs to ensure that these releases are as low as practicable. These releases should not result in radiation exposures in unrestricted areas greater than a few percent of natural background exposure. The release rate for all effluent discharges should be within the limits specified in 10 CFR Part 20.

To assure that the release of radioactive material to unrestricted areas meets the as-low-as practicable concept, the following objectives apply:

For Liquid Wastes:

- a. The annual total quantity of radioactive materials in liquid waste, excluding tritium and dissolved gases, should not exceed 5 curies;
- b. The annual average concentration of radioactive materials in liquid waste upon release from the Restricted Area, excluding tritium and dissolved noble gases, shall not exceed 2×10^{-8} uCi/ml; and
- c. The annual average concentration of dissolved gases in liquid waste, upon release from the Restricted Area, shall not exceed 2×10^{-6} uCi/ml.

For Gaseous Wastes:

- a. Averaged over a yearly interval, the release rate of noble gases and other radioactive isotopes, except I-131 and particulate radioisotopes with half-lives greater than eight days, discharged from the plant should be limited as follows:

$$\sum_i K_i Q_i \leq \begin{cases} 10 \text{ mrad/yr } \alpha \\ 20 \text{ mrad/yr } \beta \end{cases}$$

Where Q_i is the release rate in Ci/sec for radionuclide i and K_i is the gamma air dose factor or the beta air dose factor for each identified noble gas radionuclide, in mrad/yr per Ci/sec, defined as follows:

$K_i = 4.0 \times 10^6$ (air dose factor for i), where the air dose factor for radionuclide i is per Table B-1 of Regulatory Guide 1.109, Rev. 1, October 1977.

- b. Averaged over a yearly interval, the release rate of I-131 and other particulate radioisotopes with half lives longer than eight days discharged from the plant should result in a dose in the unrestricted area of less than 15 mrem to the thyroid of a child through the grass-cow-milk chain.

2.4.1 Liquid Discharge

Specification

1. The rate of release of radioactive materials in liquid waste from the plant shall be controlled such that the instantaneous concentrations of radioactivity in liquid waste, upon release from the Restricted Area, do not exceed the values listed in 10 CFR 20, Appendix B, Table II, Column 2.
2. If the cumulative release of radioactive materials in liquid effluents, excluding tritium and dissolved gases, over a calendar quarter, exceeds 2.5 curies, the Licensee shall:
 - a. Make an investigation to identify the causes for such release rates;
 - b. Define and initiate a program of action to reduce such release rates to the design levels; and,
 - c. Notify the Director, Directorate of Licensing within 30 days, identifying the causes and describing the proposed program of action to reduce such release rates.
3. The release rate of radioactive liquid effluents, excluding tritium and dissolved gases, shall not exceed 10 curies during any calendar quarter.
4. During release of liquid radioactive waste, the following conditions shall be met:
 - a. At least two (2) condenser circulating water pumps shall be in operation to provide a minimum dilution flow of approximately 383,000 gpm in the discharge canal for the liquid waste effluent;
 - b. The effluent control monitor shall be set to alarm and automatically close the waste discharge valve such that the requirements of Specification 2.4.1 are met; and,

- c. The gross liquid waste activity and flow rate shall be continuously monitored and recorded during release. If this requirement cannot be met, continued release of liquid effluents shall be permitted only during the succeeding 48 hours provided that during this 48 hour period, two independent samples of each tank shall be analyzed and two station personnel shall independently check valving prior to the discharge.
5. The equipment installed in the liquid radioactive waste system shall be maintained and operated to process all liquids prior to their discharge when it appears that the projected cumulative discharge rate excluding tritium and dissolved noble gases, released during any calendar quarter will exceed 1.25 curies.
6. The maximum activity to be contained in one liquid radwaste tank that can be discharged directly to the environs (Treated Waste Monitor and Filtered Waste Monitor Tanks only), shall not exceed 10 curies.

Monitoring Requirements

1. Facility records shall be maintained of the radioactive concentrations and volume before dilution of each batch of liquid effluent released, and of the average dilution flow and length of time over which each discharge occurred.
2. Prior to release of each batch of liquid effluent, a sample shall be taken from that batch and analyzed in accordance with Table 2-2 to demonstrate compliance with Specification 2.4.1.
3. Radioactive liquid waste sampling and activity analysis shall be performed in accordance with Table 2-2.
4. The liquid effluent radiation monitors shall be calibrated at least quarterly by means of a known radioactive source. Each monitor shall be tested monthly and when discharging checked daily.
5. The performance of automatic isolation valves and discharge tank selection valves shall be checked annually.

Bases

Releases of radioactivity in liquid wastes within the design objective levels provide reasonable assurance that the resulting

annual exposure from liquid wastes to the whole body or any organ of an individual will not exceed 5 mrem per year. At the same time, the Licensee is permitted the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels, but still within the concentration limits specified in 10 CFR 20. It is expected that using this operational flexibility under unusual operating conditions, the Licensee shall exert every effort to keep levels of radioactive materials as low as practicable, and that annual releases will not exceed a small fraction of the annual average concentration limits specified in 10 CFR 20.

2.4.2 Gaseous Discharge

Specification

1. When the release rate of radioactive materials in gaseous wastes averaged over a calendar quarter is such that the quantities of noble gases and other radioactive isotopes, except I-131 and particulate radioisotopes with half-lives greater than eight days, exceed twice the design objective as stated in 2.4.a, or when the release rate of I-131 and particulates with half-lives greater than eight days exceeds 2% of 2.4.2.3.b, the Licensee shall notify the Commission within 30 days, identifying the causes of the excessive activity and describing the proposed program of action to reduce such releases to design objective levels.
2. The maximum activity to be contained in one Waste Gas Decay tank shall be limited to 15,480 Ci.
3. a. The rate of release of radioactive materials and gaseous wastes from the plant (except I-131 and particulate radioisotopes with half-lives greater than eight days) averaged over any one-hour period shall not exceed:

$$\sum \frac{Q_i}{2.5 \times 10^5 \text{ m}^3/\text{sec (MPC)}_i} \leq 1$$

Where Q_i is the release rate in Ci/sec for isotope i and $(MPC)_i$ is the maximum permissible concentration of isotope i as defined in Appendix B, Table II, Column 1, 10 CFR Part 20.

- b. The release rate of I-131 and particulates with half-lives greater than eight days released to the environs as part of airborne effluents, shall not exceed 0.96 uCi/sec.
4. a. The release rate of gross gaseous activity averaged over a calendar quarter shall not be such that the quantities of noble gases and other radioactive isotopes, except I-131 and particulate radioisotopes with half-lives greater than eight days, exceed eight times the design objective as stated in 2.4.a.

The noble gas release rates stated in the objectives are based on a X/Q value from the annual meteorological data. The dispersion factor used, 4×10^{-6} sec/m³ at 1046 meters, is conservative and the release rate is controlled to a small fraction of 10 CFR 20 requirements at the exclusion area boundary (.02 of 10 CFR 20 = 10 mrem per year). The dispersion factor is taken from annual meteorological data taken at the ANO site (see ANO-2 FSAR Section 2.3.5) and is based on the majority of the gaseous activity released from the site will be released from the waste gas decay tanks and reactor building purges, within the time frame of 8 to 24 hours.



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

ARKANSAS POWER AND LIGHT COMPANY

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 15
License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Arkansas Power and Light Company (the licensee) dated October 31, 1979, 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. NPF-6 is hereby amended to read as follows. The second paragraph of 2.C.(2) has not changed.

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 15, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 16, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 15

FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Replace the following pages of the Appendix B Technical Specifications with the enclosed pages. The revised pages are identified by Amendment Number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Pages

2-2

2-6

2-7

2-10

2.0 LIMITING CONDITIONS FOR OPERATION

2.1 Non-Radiological

Not Applicable

2.2 Radiological

Applicability

Applies to the controlled release of radioactive liquids and gases from Arkansas Nuclear One (ANO), Unit No. 2.

Objective

To define the limits and conditions for the controlled release of radioactive effluents to the environs and to ensure that these releases are as low as reasonably achievable (ALARA). These releases should not result in radiation exposures in unrestricted areas greater than a few percent of natural background exposure.

The release rate for all effluent discharges should be within the limits specified in 10 CFR Part 20.

To assure that the release of radioactive material to unrestricted areas meet the as-low-as reasonably achievable concept, the following objectives apply:

For liquid wastes:

- a. The annual total quantity of radioactive materials in liquid waste released to unrestricted areas, excluding tritium and dissolved gases, should not exceed 5 curies.
- b. The annual doses to an individual from the site in unrestricted areas shall not exceed 5 mrem to the whole body or to any organ.

The annual average concentration of radioactive materials in liquid waste upon release from the Restricted Area, excluding tritium and dissolved noble gases, should not exceed 2×10^{-8} uCi/ml.

The annual average concentration of dissolved gases in liquid waste, upon release from the Restricted Area, should not exceed 2×10^{-6} uCi/ml.

For Gaseous Wastes:

- a. Averaged over a yearly interval, the release rate of noble gases and other radioactive isotopes, except I-131 and particulate radioisotopes with half-lives greater than eight days, discharged from the station should be limited as follows:

$$\sum_i K_i Q_i \leq \begin{cases} 10 \text{ mrad/yr } \alpha \\ 20 \text{ mrad/yr } \beta \end{cases}$$

Where Q_i is the release rate in Ci/sec for radionuclide i and K_i is the gamma air dose factor or beta air dose factor for each identified noble gas radionuclide, in mrad/yr per Ci/sec defined as follows:

$$K_i = 4.0 \times 10^{-6} \text{ (air dose factor for } i\text{),}$$

where the air dose factor for radionuclide i is per Table B-1 of Regulatory Guide 1.109, Revision 1, October 1977.

- b. Averaged over a yearly interval, the release rate of I-131 and other particulate radioisotopes with half-lives longer than eight days discharged from the station, should result in a dose in the unrestricted area of less than 15 mrem to the thyroid of a child through the grass-cow-milk chain; and the total annual quantity of iodine-131 discharged from ANO-2 should not exceed 1 Ci.

2.2.1 Liquid Discharge

Specification

1. The rate of release of radioactive materials in liquid waste from the station shall be controlled such that

- of the average dilution flow and length of time over which each discharge occurred.
2. Prior to release of each batch of liquid effluent, a sample shall be taken from that batch and analyzed in accordance with Table 2-1 to demonstrate compliance with Specification 2.2.1.
 3. Radioactive liquid waste sampling and activity analysis shall be performed in accordance with Table 2-1.
 4. The liquid effluent radiation monitors shall be calibrated at least quarterly by means of a known radioactive source. Each monitor shall be tested monthly and when discharging checked daily.
 5. The performance of automatic isolation valves and discharge tank selection valves shall be checked annually.

Bases

Releases of radioactivity in liquid wastes within the design objective levels provide reasonable assurance that the resulting annual exposure from liquid wastes to the whole body or any organ of an individual will not exceed 5 mrem per year. At the same time the Licensee is permitted the flexibility of operation, compatible with considerations of health and safety,

to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR 20. It is expected that using this operational flexibility under unusual operating conditions, the Licensee shall exert every effort to keep levels of radioactive material as low as reasonably achievable and that annual releases will not exceed a small fraction of the annual average concentration limits specified in 10 CFR 20.

2.2.2 Gaseous Discharge

Specification

1. When the release rate of radioactive materials in gaseous wastes, averaged over a calendar quarter is such that the quantities of noble gases and other radioactive isotopes, except I-131 and particulate radioisotopes with half-lives greater than eight days, exceed twice the design objective as stated in 2.2.a, or when the release rate of I-131 and particulates with half-lives greater than eight days exceeds 2% of 2.2.2.3.b, the Licensee shall notify the Commission within 30 days, identifying the causes of the excessive activity, and describe the proposed program of action to reduce such releases to design objective levels.
2. The maximum activity to be contained in one Waste Gas Decay Tank shall be limited to 15,480 Ci.

3. a. The rate of release of radioactive materials and gaseous wastes from the station (except I-131 and particulate radioisotopes with half-lives greater than eight days) averaged over any one-hour period shall not exceed:

$$\sum \frac{Q_i}{2.5 \times 10^5 \frac{\text{m}^3}{\text{sec}} (\text{MPC})_i} \leq 1$$

Where Q_i is the release rate in Ci/sec for isotope i and $(\text{MPC})_i$ is the maximum permissible concentration of isotope as defined in Appendix B, Table II, Column 1, 10 CFR Part 20.

- b. The release rate of I-131 and particulates with half-lives greater than eight days released to the environs from the station, as part of airborne effluents shall not exceed 0.96 uCi/sec.
4. a. The release rate of gross gaseous activity averaged over a calendar quarter shall not be such that the quantities of noble gases and other radioactive isotopes, except I-131 and particulate radioisotopes with half-lives greater than eight days, exceed eight times the design objective as stated in 2.2.a.
- b. The release rate of I-131 and particulates with half-lives greater than eight days shall not exceed 8% of the values specified in 2.2.2.2.b when averaged over a calendar quarter.

5. During release of radioactive gaseous wastes from the gaseous waste discharge header to the plant ventilation exhaust plenum, the following conditions shall be met:
 - a. The gaseous radioactivity monitor, iodine and the particulate samplers in the plant vents shall be operating; and
 - b. Automatic isolation devices capable of limiting gaseous release rates to within the values specified in 2.2.2.3.a shall be operating.
6. During containment purge, the effluent control monitor shall be set to alarm and automatically close the containment purge penetrations on a high activity alarm.
7. Gases discharged through the unit vent to the atmosphere shall be continuously monitored and recorded for gross (β, γ) activity.

Whenever these monitors are inoperable, appropriate grab samples shall be taken and analyzed each shift.

Monitoring Requirement

1. Radioactive gaseous waste sampling and analysis shall be performed in accordance with Table 2-1.
2. All waste gas monitors shall be calibrated at least quarterly by means of a known radioactive source. Each monitor shall have an instrument channel test at least monthly and when discharging checked at least daily.

3. During power operation, the condenser vacuum pump discharge shall be continuously monitored for gross radiogas activity. The monitor shall not be inoperable for more than 7 days. Whenever this monitor is inoperable, grab samples shall be taken and analyzed for gross (β, γ) radioactivity daily.
4. Records shall be maintained and reports of the sampling and analysis results shall be submitted in accordance with Specification 5.6.
5. The Waste Gas Decay Tank effluent monitor shall be tested prior to any release of radioactive gas from a decay tank and shall be calibrated at least once every 18 months.

Bases:

It is expected that the releases of radioactive materials and gaseous wastes will be kept within the design objective levels and will not exceed on an instantaneous basis the dose rate limits specified in 10 CFR 20.

These levels provide reasonable assurance that the resulting annual exposure from noble gases to the whole body or any organ of an individual will not exceed 10 mrem per year. At that same time the Licensee is permitted the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided a dependable

source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR 20. It is expected that using this operational flexibility under unusual operating conditions, the Licensee shall exert every effort to keep levels of radioactive materials and gaseous wastes as low as reasonably achievable and that annual releases will not exceed a small fraction of the annual average concentration limits specified in 10 CFR 20. These efforts shall include consideration of meteorological conditions during releases.

The noble gas release rates stated in the objectives are based on a X/Q value from the annual meteorological data. The dispersion factor used, 4.0×10^{-6} sec/m³ at 1046 meters, is conservative and the release rate is controlled to a small fraction of 10 CFR 20 requirements at the exclusion area boundary (.02 of 10 CFR 20 = 10 mrem per year). The dispersion factor is taken from annual meteorological data taken at the ANO site (see ANO-2 FSAR Section 2.3.5) and is based on the majority of the gaseous activity released from the site will be released from the waste gas decay tanks and reactor building purges, within the time frame of 8 to 24 hours.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 46 AND 15

TO FACILITY OPERATING LICENSE NOS. DPR-51 AND NPF-6

ARKANSAS POWER AND LIGHT COMPANY

ARKANSAS NUCLEAR ONE, UNIT NOS. 1 AND 2

DOCKET NOS. 50-313 AND 50-368

Introduction

By letter dated October 31, 1979, Arkansas Power and Light Company (the licensee or AP&L) requested amendments to Operating License Numbers DPR-51 and NPF-6 for Arkansas Nuclear One, Unit Nos. 1 and 2 (ANO-1/2) which would change the Environmental Technical Specifications (Appendix B) of each license. The proposed amendments would change the following:

1. The method of expressing the design objective relating to the average annual release rate of noble gases and other radioactive isotopes, except I-131 and particulate radioisotopes with half-lives greater than eight days.
2. The requirement for reporting to the Commission the quarterly gaseous radioactive release rates. The proposed change would require a report to the Commission if the quarterly gaseous radioactive release rates at the site boundary exceed a value calculated on the basis of updated annual average meteorological and dose models.
3. The method of expressing the limit on the release rate of gross gaseous activity averaged over a calendar quarter.

Discussion and Evaluation

1. The Design Objectives

The design objective in the current Environmental Technical Specifications relating to the average annual release rate of noble gases and other radioactive isotopes, except I-131 and particulate radioisotopes with half-lives greater than eight days, discharged from the plant provides that the resulting annual dose at the site boundary should be less than 10 mrem to the whole body or any organ of an individual.

The design objectives proposed by the licensee would be equivalent to the current Technical Specifications but would be in an expression based upon a dispersion factor (X/Q) of 2.8×10^{-6} sec/m³. The licensee indicated that this X/Q value

is based on annual average meteorological conditions. Based on our review of the data in the Final Safety Analysis Reports for ANO-1/2 and using the methodology of Regulatory Guide 1.111, we estimated the highest annual average X/Q value for a ground level release to be 4.0×10^{-6} sec/m³ in the WNW sector at a distance of 0.65 miles. We have determined that it is acceptable to use the highest annual average X/Q as calculated by the NRC staff. We have discussed the appropriate X/Q with the licensee and the licensee has agreed to using 4.0×10^{-6} sec/m³. In addition, the licensee has agreed to use the dose expressions which appear in our most recent Standard Radiological Technical Specifications (NUREG-0472). The margin of safety would not be reduced since the annual site boundary dose rate design objective would remain at less than two percent of allowable dose rate to the public per 10 CFR 20 (500 mrem/year). We find this acceptable.

2. Requirement for a Quarterly Report

The current Technical Specifications require the licensee to provide the Commission a report within 30 days following the end of a calendar quarter, if over that quarter the average release rate of radioactive material in gaseous waste exceeds four percent of the maximum allowable release rate averaged over any one hour period. The proposed change would require a report to the Commission if, over a given calendar quarter, the release rate of radioactive material in gaseous waste is such that the releases would result in an offsite dose that is twice the annual design objective if continued for one year. This early indication would provide sufficient time for the Commission and the licensee to take action to ensure that the annual design objective is still met. We have determined that the proposed threshold for preparing a quarterly report would be much less than the maximum allowable dose rate to the public per 10 CFR 20. This change would not reduce the margin of safety or increase the consequences or probability of accidents since it merely applies to a reporting requirement which will be based on a new calculational expression. Therefore, we find the proposed change to be acceptable.

3. The Maximum Allowable Quarterly Release Rate of Radioactive Gaseous Material

The current Technical Specifications require that the release rate of gross gaseous activity shall not exceed 16 percent of a maximum allowable release rate averaged over any one hour period. The proposed change would

limit the release rate of gross gaseous activity to not exceed eight times the design objective. This proposed method of calculating the maximum allowable quarterly release rate would be based on the highest annual average X/Q value as calculated with the recommended X/Q and the current dose models. The change would not reduce the margin of safety or increase the probability or consequences of an accident. Therefore, we find the change to be acceptable.

4. Hourly Release Rate Limit

We have also discussed with the licensee the use of the highest annual average X/Q in the specification limiting the release rate over any one hour period. The current Technical Specifications limit the release rate of radioactive materials and gaseous wastes (except I-131 and particulate radioisotopes with half-lives greater than eight days) when averaged over any one-hour period to that rate which would result in an offsite concentration equal to the maximum permissible concentration as defined in Appendix B, Table II, Column 1, 10 CFR Part 20. The current Technical Specification for the hourly release rate limit is based on a more conservative (higher) dispersion factor (X/Q) than the highest annual average X/Q. The licensee has agreed to a method of calculating the maximum allowable hourly release rate which will change the dispersion factor that is used in the calculation to the highest annual average X/Q. This change will result in specifications which use a X/Q consistent with that used for the quarterly and annual limits and is also consistent with the method the staff is presently using to implement the dose design objectives of Appendix I to 10 CFR Part 50.

The basis for the specification of limiting hourly average concentration of radioisotopes to less than the Part 20, Appendix B, Table II, Column 1 concentration does not change. The change would not reduce the margin of safety or increase the probability or consequences of an accident. Therefore, we find this change to be acceptable.

Environmental Consideration

Although the change in method for calculating allowable releases would permit an increase in radioactive noble gaseous releases, the limiting dose at the site boundary would remain the same and be within the requirements of 10 CFR Part 50, Appendix I. In addition, until the complete Appendix I Technical Specifications are issued, the licensee has retained the requirement to terminate releases of radioactive noble gases if they reach a calculated value of 20 mrad gamma air dose or 40 mrad beta air dose in any calendar quarter.

We have determined that the amendments do not authorize a significant 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 amendments involve 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 these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: September 16, 1980

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NOS. 50-313 AND 50-368ARKANSAS POWER AND LIGHT COMPANYNOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 46 and 15 to Facility Operating License Nos. DPR-51 and NPF-6, issued to Arkansas Power and Light Company (the licensee), which revised the Technical Specifications for operation of Arkansas Nuclear One, Unit Nos. 1 and 2, respectively, (the facilities) located in Pope County, Arkansas. The amendments are effective as of the date of issuance.

The amendments revise the Environmental Technical Specifications relating to the design objective for radioactive gaseous releases, the requirements for a quarterly report on radioactive gaseous releases, the allowable hourly radioactive gaseous release rate, and the maximum allowable radioactive gaseous releases in a calendar quarter. The revisions comply with the applicable requirements of 10 CFR Part 50, Appendix I.

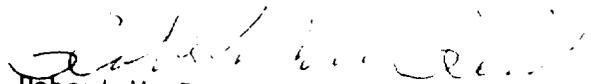
The application for these amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR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

The Commission has determined that the issuance of these amendments 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 these amendments.

For further details with respect to this action, see (1) the licensee's application for amendments dated October 31, 1979, (2) Amendment No. 46 to License No. DPR-51 and Amendment No. 15 to License No. NPF-6, 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 Licensing.

Dated at Bethesda, Maryland, this 16th day of September 1980.

FOR THE NUCLEAR REGULATORY COMMISSION


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