May 25 1989

Docket No. 50-313

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

Dear Mr. Campbell:

SUBJECT: ISSUANCE OF AMENDMENT NO. 121 TO FACILITY OPERATING LICENSE NO. DPR-51 - ARKANSAS NUCLEAR ONE, UNIT NO. 1 (TAC NO. 64275)

The Commission has issued the enclosed Amendment No. 121 to Facility Operating License No. DPR-51 for the Arkansas Nuclear One, Unit No. 1 (ANO-1). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 12, 1986.

The amendment removes the text of several temporary specifications which are no longer applicable regarding gross iodine determination, the sodium thiosulfate system, and the borated water storage tank. The amendment also makes several changes to correct typographical errors, and revise wording to provide consistent terminology. It was noted that several of the typographical errors no longer existed and no change was therefore necessary.

Our Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,
/s/

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

Enclosures:
1. Amendment No. 121 to DPR-51
2. Safety Evaluation

cc w/enclosures:
See next page

DISTRIBUTION:

Docket File	BGrimes	PNoonan	ACRS (10)
NRC PDR	TMeek (4)	CPoslusny (2)	GPA/PA
Local PDR	Wanda Jones	JCalvo	ARM/LFMB
PD4 Reading	OGC-Rockville	DHagan	EJordan
Plant File	FHebdon		

LTR NAME: ANO1 AMENDMENT TAC 64275

PD4/LA	PD4/PM	OGC-Rockville	PD4/D	
PNoonan	CHarbuck:bj	SHLewis	FHebdon	
05/17/89	05/17/89	05/24/89	05/25/89	

DF01

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

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See next page

cc:

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for Operations
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Honorable Joe W. Phillips
County Judge of Pope County
Pope County Courthouse
Russellville, Arkansas 72801

Ms. Greta Dicus, Director
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Arkansas Department of Health
4815 West Markam 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 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 121
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 December 12, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 121 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

for George F. Dick Jr.
Frederick J. Hebdon, Director
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 25, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 121

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Revise the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE PAGES	INSERT PAGES
36	36
37	37
74	74
75a	-
79	79
80	80
82	82
105	105
106	106
110t	110t
110z	110z

3.3 EMERGENCY CORE COOLING, REACTOR BUILDING COOLING AND REACTOR BUILDING SPRAY SYSTEMS

Applicability

Applies to the emergency core cooling, reactor building cooling and reactor building spray systems.

Objectivity

To define the conditions necessary to assure immediate availability of the emergency core cooling, reactor building cooling and reactor building spray systems.

Specification

3.3.1 The following equipment shall be operable whenever containment integrity is established as required by Specification 3.6.1:

(A) One reactor building spray pump and its associated spray nozzle header.

(B) One reactor building cooling fan and its associated cooling unit.

(C) Two out of three service water pumps shall be operable, powered from independent essential buses, to provide redundant and independent flow paths.

(D) Two engineered safety feature actuated low pressure injection pumps shall be operable.

(E) Both low pressure injection coolers and their cooling water supplies shall be operable.

(F) Two BWST level instrument channels shall be operable.

(G) The borated water storage tank shall contain a level of $37.5^{+1.5}_{-1.6}$ ft. (362,000 ± 13,000 gallons) of water having a concentration of 2470 ± 200 ppm boron at a temperature not less than 40F. The manual valve on the discharge line from the borated water storage tank shall be locked open.

(H) The four reactor building emergency sump isolation valves to the LPI system shall be either manually or remote-manually operable.

(I) The engineered safety features valves associated with each of the above systems shall be operable or locked in the ES position.

3.3.2 In addition to 3.3.1 above, the following ECCS equipment shall be operable when the reactor coolant system is above 350F and irradiated fuel is in the core:

(A) Two out of three high pressure injection (makeup) pumps shall be maintained operable, powered from independent essential buses, to provide redundant and independent flow paths.

(B) Engineered safety features valves associated with 3.3.2.a above shall be operable or locked in the ES position.

3.3.3 In addition to 3.3.1 and 3.3.2 above, the following ECCS equipment shall be operable when the reactor coolant system is above 800 psig:

(A) The two core flooding tanks shall each contain an indicated minimum of 13 ± 0.4 feet (1040 ± 30 ft^3) of borated water at 600 ± 25 psig.

(B) Core flooding tank boron concentration shall not be less than 2270 ppm boron.

(C) The electrically operated discharge valves from the core flood tanks shall be open and breakers locked open and tagged.

(D) One of the two pressure instrument channels and one of the two level instrument channels per core flood tank shall be operable.

3.3.4 The reactor shall not be made critical unless the following equipment in addition to 3.3.1, 3.3.2, and 3.3.3 above is operable.

(A) Two reactor building spray pumps and their associated spray nozzle headers and two reactor building emergency cooling fans and associated cooling units powered from operable independent emergency buses.

(B) The sodium hydroxide tank shall contain an indicated

$34^{+1.0}_{-0.8}$ ft. of $18^{+2.8}_{-3.0}$ wt % solution sodium hydroxide

(19,500 lb. ± 2500 lb.).

(C) All manual valves in the main discharge lines of the sodium hydroxide tanks shall be locked open.

Table 4.1-3
MINIMUM SAMPLING AND ANALYSIS FREQUENCY

Item	Test	Frequency
1. Reactor Coolant Samples	a. Gamma Isotopic Analysis	a. Bi-weekly (7)
	b. Gross Activity Determination	b. 3 times/week and at least every third day (1)(6)(7)
	c. Gross Radioiodine Determination	c. Weekly (3)(6)(7)
	d. Dissolved Gases	d. Weekly (7)
	e. Chemistry (Cl, F, and O_2)	e. 3 times/week (8)
	f. Boron Concentration	f. 3 times/week
	g. Radiochemical Analysis for $\bar{E}$ Determination (2) (4)	g. Monthly (7)
2. Borated Water Storage Tank Water Sample	Boron Concentration	Weekly and after each makeup
3. Core Flooding Tank Sample	Boron Concentration	Monthly and after each makeup
4. Spent Fuel Pool Water Sample	Boron Concentration	Monthly and after each makeup (9)
5. Secondary Coolant Samples	a. Gross Radioiodine Concentration	a. Weekly (5)(7)(10)
	b. Isotopic Radioiodine Concentration (4)	b. Monthly (7)(10)
6. Sodium Hydroxide Tank Sample	Sodium Hydroxide Concentration	Quarterly and after each makeup

Notes:

(1) A gross radioactivity analysis shall consist of the quantitative measurement of the total radioactivity of the primary coolant in units of μCi/gm. The total primary coolant activity shall be the sum of the degassed beta-gamma activity and the total of all identified gaseous activities 15 minutes after the primary system is sampled. Whenever the gross radioactivity concentration exceeds 10% of the limit specified in the Specification 3.1.4.1 or increases by 10 μCi/gm from the previous measured level, the frequency of sampling and analyzing shall be increased to a minimum of once/day until a steady activity level is established.

4.4 REACTOR BUILDING

4.4.1 Reactor Building Leakage Tests

Applicability

Applies to the reactor building.

Objective

To verify that leakage from the reactor building is maintained within allowable limits.

Specification

4.4.1.1 Integrated Leakage Rate Tests

4.4.1.1.1 Design Pressure Leakage Rate

The maximum allowable integrated leakage rate, L_a, from the reactor building at the 59 psig design pressure, P_a, shall not exceed 0.20 weight percent of the building atmosphere at that pressure per 24 hours.

4.4.1.1.2 Testing at Reduced Pressure

The periodic integrated leak rate test may be performed at a test pressure, P_t, of 30 psig provided the resultant leakage rate, L_t, does not exceed a pre-established fraction of L_a determined as follows:

a. Prior to reactor operation the initial value of the integrated leakage rate of the reactor building shall be measured at design pressure and at the reduced pressure to be used in the periodic integrated leakage rate tests. The leakage rates thus measured shall be identified as L_{am} and L_{tm} respectively.

b. L_t shall not exceed $L_a \frac{L_{tm}}{L_{am}}$ for values of $\frac{L_{tm}}{L_{am}}$ below 0.7

c. L_t shall not exceed $L_a \frac{P_t}{P_a}$ for values of $\frac{L_{tm}}{L_{am}}$ above 0.7

d. If L_{tm}/L_{am} is less than 0.3, the initial integrated test results shall be subject to review by the NRC to establish an acceptable value of L_t.

4.4.1.1.5 Conditions for Return to Criticality

If L_{tm} is less than L_{to}.
($L_{to} \cong 75\% L_t$)

or

If L_{am} is less than L_{ao}
($L_{ao} \cong 75\% L_a$)

4.4.1.1.6 Corrective Action Retest

If L_{tm} is greater than L_{to}, local leak tests will then be performed and the required repairs made. The integrated leakage test need not be repeated provided local measured leakage reduction achieved by repairs of individual leaks reduces the reactor building's overall measured leakage rate sufficiently such that L_{tm} is less than L_{to}.

4.4.1.1.7 Report of Test Results

The initial test report shall include a schematic arrangement of the leakage rate measurement system, the instrumentation used, the supplemental test method and the test program selected as applicable to the initial test and all subsequent periodic tests. The report shall contain an analysis and interpretation of the leakage rate test data to the extent necessary to demonstrate the acceptability of the reactor building's leakage rate in meeting the acceptance criteria.

4.4.1.2 Local Leakage Rate Tests

4.4.1.2.1 Scope of Testing

The local leak rate shall be measured for components in the following categories:

a. Reactor building penetrations whose design incorporates resilient seals, gaskets, or sealant compounds; piping penetrations fitte with expansion bellows.

b. Air lock door seals, including operating mechanism and penetrations with resilient seals which are part of the reactor building pressure boundary in the air lock structures.

c. Equipment and access doors with resilient seals or gaskets (seal-welded doors are excluded).

d. Components other than those listed in items a,b, and c above which develop leaks inservice and

4.8 EMERGENCY FEEDWATER PUMP TESTING

Applicability

Applies to the periodic testing of the turbine and electric motor driven emergency feedwater pumps.

Objective

To verify that the emergency feedwater pump and associated valves are operable.

Specification

4.8.1 Each EFW train shall be demonstrated operable:

a) By verifying on a STAGGERED TEST BASIS:

1. at least once per 31 days or upon achieving hot shutdown following a plant heatup and prior to criticality, that the turbine-driven pump starts, operates for a minimum $\geq$ 1200 psig at a flow of $\geq$ 500 gpm through the test loop flow path.

2. at least once per 31 days by verifying that the motor driven EFW pump starts, operates for a minimum of 5 minutes and develops a discharge pressure of $\geq$ 1200 psig at a flow of $\geq$ 500 gpm thorough the test loop flow path.

b) At least once per 31 days by verifying that each valve (manual, power operated or automatic) in each EFW flowpath that is not locked, sealed, or otherwise secured in position, is in its correct position.

c) Prior to exceeding 280°F reactor coolant temperature and after any EFW flowpath manual valve alterations by verifying that each manual valve in each EFW flowpath which, if mispositioned may degrade EFW operation, is locked in its correct position.

d) At least once per 92 days by cycling each motor-operated valve in each flowpath through at least one complete cycle.

e) At least once per 18 months by functionally testing each EFW train and:

1) Verifying that each automatic valve in each flowpath actuates automatically to its correct position on receipt of an actuation signal.

4.21 SPRINKLER SYSTEMS

Applicability

Applies to surveillance of the sprinkler systems which are required to be operable by Specification 3.18.

Objective

To assure that the various sprinkler systems are available and operable when needed.

Specification

4.21.1 The cable spreading room sprinkler system shall be demonstrated operable at least once per 31 days by verifying that the system is aligned to the fire pumps.

4.21.2 The sprinkler systems located in the four reactor building cable penetration areas and four cable penetration rooms shall be demonstrated operable:

a. At least once per 31 days by verifying that each system is aligned to the fire pumps;

b. At least once per 12 months by cycling each testable valve in the flow paths through at least one complete cycle of full travel.

4.21.3 The sprinkler systems located in the two emergency diesel generator rooms and two diesel generator fuel vaults shall be demonstrated operable:

a. At least once per 31 days by verifying that each system is aligned to the fire pumps;

b. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel;

c. At least once per 18 months by inspection of the spray headers to verify their integrity.

Bases

The cable spreading room sprinkler system is a wet pipe system actuated only by heat action on the fusible head sprinkler. The only maintainable aspect of the system is the verification of system alignment.

The sprinkler systems in the four cable penetration areas and four cable penetration rooms are manually-operated closed-head (fusible head) systems which are remotely operated from the control room.

The sprinkler systems in the two emergency diesel generator rooms and two diesel generator fuel vaults are manually-operated open-head systems which are remotely operated from the control room.

The required inspections will assure availability of the various sprinkler systems when they are needed.

4.26 REACTOR BUILDING PURGE VALVES

Applicability

This specification applies to the reactor building purge supply and exhaust isolation valves.

Objective

To assure reactor building integrity.

Specification

4.26.1 The reactor building purge supply and exhaust isolation valves shall be determined closed at least once per 31 days when containment integrity is required by TS 3.6.1.

4.26.2 Prior to exceeding conditions which require establishment of reactor building integrity per TS 3.6.1, the leak rate of the purge supply and exhaust isolation valves shall be verified to be within acceptable limits per TS 4.4.1, unless the test has been successfully completed within the last three months.

Bases

Determination of reactor building purge valve closure will ensure that reactor building integrity is not unintentionally breached.

As a result of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration," it was concluded that excess leakage past valve resilient seals is typically caused by severe environmental conditions and/or wear due to use. Recommended leak test frequencies of three months are deemed to be adequate to detect seal degradation of resilient seals.

The three month test need not be conducted with the precision of the Type C 10CFR50, Appendix J criteria, however the test must be sufficient to detect degradation.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 121 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 12, 1986, Arkansas Power and Light Company (AP&L or the licensee) requested an amendment to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-51 for Arkansas Nuclear One, Unit 1 (ANO-1). The amendment removes the text of several temporary specifications which are no longer applicable, regarding gross iodine determination, the sodium thiosulfate system, and the borated water storage tank. The amendment also makes several changes to correct typographical errors, and revise wording to provide consistent terminology.

EVALUATION

The staff has reviewed the set of changes requested by the licensee and has determined that they are purely administrative in nature and result in improving clarity of information in the Technical Specifications. The changes do not decrease or otherwise modify existing requirements. Therefore, they are acceptable. A number of typographical errors were found to no longer exist so no changes were necessary. These were on pages ii, 7, 58, 61, 66c, 79 (TS 4.4.1.1.2.a), and 81.

ENVIRONMENTAL CONSIDERATION

The amendment related to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: May 25, 1989

Principal Contributor: C. Craig Harbuck