Docket No. 50-313

MAR 0 3 1978

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

Gentlemen:

By letter dated November 28, 1977, we forwarded to you recommended interim technical specifications for fire protection at Arkansas Nuclear One, Unit No. 1 (ANO-1). These specifications revised, where necessary, the specifications submitted in your June 16, 1977 response to our October 21, 1976 letter.

You responded to our November 28, 1977 letter by letter dated December 12, 1977, in which you stated that the specifications as proposed were unacceptable and that management review was necessary prior to your proposing revised specifications. Your proposed specifications were subsequently forwarded by letter dated January 17, 1978.

We have reviewed these proposed specifications and have modified them, with your staff's concurrence, as necessary to meet our requirements. Because of the number of areas in which our staffs initially disagreed, we have enclosed a supplemental Safety Evaluation which details the areas of disagreement and their resolution. We have under continuing review the matters of fire brigade size, exemption of certain valves from frequent position verification, and the need for periodic audit by an outside fire protection consultant. Based upon the results of our review, we may require that these specifications be modified.

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| SURNAME➤ | | | | | | |
| DATE➤ | | | | | | |

MAR 0 3 1978

The enclosed fire protection Technical Specifications for ANO-1 are being issued as Amendment No. 30 to Facility Operating License No. DPR-51. A copy of the Notice of Issuance is enclosed. The related Safety Evaluation was enclosed with our November 28, 1977 letter, and the supplemental Safety Evaluation, as noted above, is enclosed herein.

Sincerely,

Original signed by
Robert W. Reid

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

Enclosures:
1. Amendment No. 30 to
   License No. DPR-51
2. Notice
3. Supplement to Safety Evaluation
   dated November 28, 1977

cc w/enclosures:
See next page

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| SURNAME | B. Smith ~~LBrenner~~ | DKDavis |
| DATE | 3/2/78 | 2/17/78 |

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| DATE | 2/23/78 | 2/17/78 | 2/14/78 | 2/21/78 | 2/24/78 | 3/3/78 |

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

March 3, 1978

Docket No. 50-313

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

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Sincerely,

Robert W. Reid

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

Enclosures:
1. Amendment No. 30 to
   License No. DPR-51
2. Notice
3. Supplement to Safety Evaluation
   dated November 28, 1977

cc w/enclosures:
See next page

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Russellville, Arkansas 72801

Arkansas Polytechnic College
Russellville, Arkansas 72801

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First International Building
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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. 30
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 June 16, 1977, as amended by letter dated January 17, 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 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 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. 30, 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

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

Attachment:
Changes to the Technical Specifications

Date of Issuance: March 3, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 30

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Accomplish page changes to the Appendix A portion of the Technical Specifications as noted below. The changed areas on the revised pages are identified by a marginal line.

| Remove Existing Page | Add Revised Page |
|---|---|
| i | i |
| ii | ii |
| 5 | 5 |
| 53c | 53c* |
| -- | 53d (new) |
| 54 | 54* |
| -- | 66m (new) |
| -- | 66n (new) |
| -- | 66o (new) |
| -- | 66p (new) |
| -- | 66q (new) |
| -- | 110p (new) |
| -- | 110q (new) |
| -- | 110r (new) |
| -- | 110s (new) |
| -- | 110t (new) |
| -- | 110u (new) |
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| -- | 110w (new) |
| 117 | 117 |
| 118 | 118 |
| 119 | 119 |
| 120 | 120 |
| 125 | 125 |
| 126 | 126 |
| 127 | 127 |

*There were no changes on these pages. They are included as a matter of convenience in updating the Technical Specifications.

# TABLE OF CONTENTS



Amendment No. 23, 30

## 1.7 REACTOR BUILDING

Reactor building integrity exists when the following conditions are satisfied:

a. The equipment hatch is closed and sealed and both doors of the personnel lock and emergency lock are closed and sealed, or b. below.

b. At least one door on each of the personnel lock and emergency lock is closed and sealed during personnel access or repair.

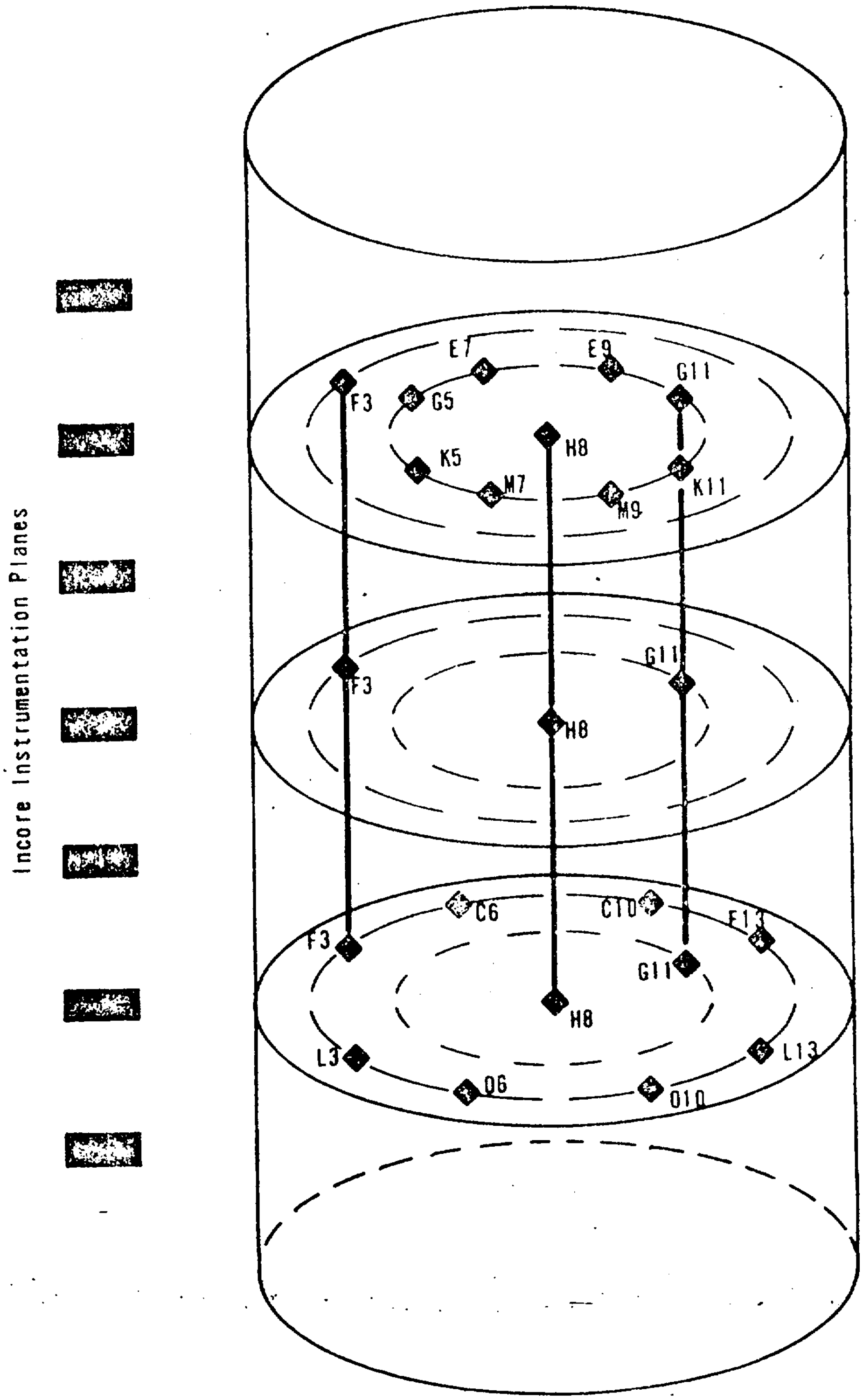
c. All non-automatic reactor building isolation valves and blind flanges are closed as required.

d. All automatic reactor building isolation valves are operable or deactivated in the closed position.

e. The reactor building leakage determined at the last testing interval satisfies Specification 4.4.1

## 1.8 FIRE SUPPRESSION WATER SYSTEM

The fire suppression water system consists of: water sources, pumps, and distribution piping with associated sectionalizing isolation valves. Such valves include the hose standpipe shutoff valves and the first valve ahead of the water flow alarm device on each sprinkler system.




| | | |
|---|---|---|
| ARKANSAS POWER & LIGHT CO.<br>ARKANSAS NUCLEAR ONE-UNIT 1 | INCORE INSTRUMENTATION SPECIFICATION | FIG. NO.<br>3.5.4-3 |

## 3.5.5 Fire Detection Instrumentation

### Applicability

This specification applies to fire detection instrumentation utilized within fire areas containing safety related equipment or circuitry, for the purposes of protecting that safety related equipment or circuitry.

### Objective

To provide immediate notification of fires in areas where there exists a potential for a fire to disable safety related systems.

### Specification

3.5.5.1 A minimum of 50% of the fire detectors in each of the following locations shall be operable:

a. each of the four reactor building cable penetration areas.
b. each of the four cable penetration room penetration rooms.
c. each of the two emergency diesel generators rooms.
d. north switchgear room.
e. south switchgear room.
f. main control room.
g. auxiliary control room ceiling.
h. auxiliary control room floor.
i. each diesel generator fuel vault.
j. cable spreading rooms.

3.5.5.2 If less than 50% of the fire detectors in each of the locations designated in 3.5.5.1 are operable, within one hour establish a fire watch patrol to inspect the zone(s) with the inoperable instrument(s) at least once per hour and restore the equipment to operable status within 14 days or prepare and submit a report to the Commission pursuant to Specification 6.12.3.2(b) within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to operable status.

### Bases

The various detectors provide alarms that notify the operators of the existence of a fire in its early stages thus providing early initiation of fire protection. The detectors in the main and auxiliary control rooms also provide automatic fire protection initiation.

The detectors required to be operable in the various areas represent 1/2 of those installed.

Operability of the fire detection instrumentation ensures that operable warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation inoperable, the establishment of frequent fire patrols in the affected area(s) is required to provide detection capability until the inoperable instrumentation is restored to operability.

## 3.6 REACTCR BUILDING

Applicability

Applies to the integrity of the reactor building.

Objective

To assure reactor building integrity.

Specification

3.6.1 Reactor building integrity shall be maintained whenever all three (3) of the following conditions exist:

a. Reactor coolant pressure is 300 psig or greater.

b. Reactor coolant temperature is 200°F or greater.

c. Nuclear fuel is in the core.

3.6.2 Reactor building integrity shall be maintained when the reactor coolant system is open to the reactor building atmosphere and the requirements for a refueling shutdown are not met.

3.6.3 Positive reactivity insertions which would result in the reactor being subcritical by less than 1% $\Delta k/k$ shall not be made by control rod motion or boron dilution whenever reactor building integrity is not in force.

3.6.4 The reactor shall not be taken critical or remain critical if the reactor building internal pressure exceeds 3.0 psig or a vacuum of 5.5 inches Hg.

3.6.5 Prior to criticality following a refueling shutdown, a check shall be made to confirm that all manual reactor building isolation valves which should be closed are closed and locked, as required.

3.6.6 If, while the reactor is critical, a reactor building isolation valve is determined to be inoperable in a position other than the closed position, the other reactor building isolation valve (except for check valves) in the line shall be tested to insure operability. If the inoperable valve is not restored within 48 hours, the reactor shall be brought to the cold shutdown condition within an additional 24 hours or the operable valve will be closed.

Bases

The reactor coolant system conditions of cold shutdown assure that no steam will be formed and hence there will be no pressure buildup in the reactor building if the reactor coolant system ruptures.

## 3.17 Fire Suppression Water System

### Applicability

This specification applies to the portions of the fire suppression water system necessary to provide fire protection to safety related equipment.

### Objective

To assure that fire suppression is available to safety related equipment.

### Specification

3.17.1 The fire suppression water system shall be operable at all times with two high pressure pumps, each with a capacity of at least 2500 GPM, with their discharges aligned to the fire suppression header, and with an operable flow path capable of transferring water through distribution piping with operable sectionalizing control valves to the shutoff valve ahead of each hose standpipe and the water flow alarm device on each sprinkler system.

3.17.2 With one pump inoperable, restore the inoperable equipment to operable status within seven days or prepare and submit a report to the Commission pursuant to Specification 6.12.3.2(b) within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system.

3.17.3 With the fire suppression water system inoperable:

a. Establish a backup fire suppression water system within 24 hours; and

b. Submit a Report in accordance with Specification 6.12.3.1(b).

c. If a. above cannot be fulfilled, place the reactor in Hot Standby within the next six (6) hours and in Cold Shutdown within the following thirty (30) hours.

### Bases

The fire pumps supply the only source of water for all fire suppression systems utilizing water. Each pump is individually capable of providing full flow required for proper fire suppression water system operation. The pumps start automatically on low system pressure.

In the event that the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a 24 hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued operation of the plant.

## 3.18 Fire Suppression Sprinkler Systems

### Applicability

This specification applies to the following fire suppression sprinkler systems protecting safety-related areas:

a. Each of the four reactor building cable penetration areas,

b. Each of the four cable penetration rooms.

c. Each of the two emergency diesel generator rooms,

d. Cable spreading room,

e. Each of the two diesel generator fuel vaults.

### Objective

To assure that fire suppression is available to safety-related equipment located in the above-listed areas.

### Specification

3.18.1 The above-listed sprinkler systems shall be operable at all times.

3.18.2 With one or more of the above-listed sprinkler systems inoperable, establish a continuous fire watch (or operable smoke and/or heat detection equipment with control room alarm) with backup fire suppression equipment for the applicable area(s) within one hour. Restore the system(s) to operable status within 14 days or prepare and submit a Report to the Commission pursuant to Specification 6.12.3.2(b) within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system(s) to operable status.

### Bases

Safety related equipment located in various areas is protected by sprinkler systems. The operability of these systems ensures that adequate fire suppression capability is available to confine and extinguish a fire occurring in the applicable areas. In the event a system is inoperable, alternate backup fire fighting equipment or operable detection equipment is required to be made available until the inoperable equipment is restored to service.

## 3.19 Control Room and Auxiliary Control Room Halon Systems

### Applicability

This specification applies to the Halon systems utilized as the fire suppression system for the control room and auxiliary control room.

### Objective

To assure that fire suppression is available to the safety related equipment in the control room and auxiliary control room.

### Specification

3.19.1 The three control room and auxiliary control room Halon systems shall be operable at all times with the storage tanks having at least 95% of full charge weight and 90% of full charge pressure.

3.19.2 With any of the control room and auxiliary control room Halon systems inoperable, establish backup fire suppression equipment for the affected area within one hour. Restore the system(s) to operable status within 14 days or prepare and submit a Report to the Commission pursuant to Specification 6.12.3.2(b) within 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

### Bases

Safety related circuitry located in portions of the control room and auxiliary control room is protected by the Halon systems. The operability of these systems ensures that adequate fire suppression capability is available to confine and extinguish a fire occurring in the control room or the auxiliary control room.

In the event that the system(s) is inoperable, alternate backup fire fighting equipment is required to be made available in the affected area until the inoperable equipment is restored to service.

3.20 Fire Hose Stations

Applicability

This specification applies to fire hose stations protecting areas containing safety related equipment.

Objective

To assure that manual fire suppression capability is available to all safety related equipment.

Specification

3.20.1 All fire hose stations protecting areas containing safety related equipment shall be operable whenever the equipment in these areas is required to be operable.

3.20.2 With one or more of the fire hose stations of 3.20.1 inoperable, route an additional equivalent capacity fire hose to the unprotected area(s) from an operable hose station within one hour.

Bases

The operability of the fire hose stations adds additional assurance that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety-related equipment is located.

In the event that portions of this system are inoperable, backup fire hose equipment is required to be made available in the affected area(s) until the inoperable equipment is restored to service.

## 3.21 Penetration Fire Barriers

### Applicability

This specification applies to penetration fire barriers relied on for restriction of fire damage such that safety-related equipment in areas other than the main fire area are not affected.

### Objective

To assure that penetration fire barriers protecting safety-related areas perform their separation function.

### Specification

3.21.1 All penetration fire barriers protecting safety related areas shall be intact at all times.

3.21.2 With one or more of the required penetration fire barriers not intact, establish a continuous fire watch (or operable smoke and/or heat detection equipment with control room alarm) on at least one side of the affected penetration within one hour.

### Bases

The functional integrity of the penetration fire barriers ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The penetration fire barriers are a passive element in the facility fire protection program and are subject to periodic inspections.

During periods of time when the barriers are not functional, a continuous fire watch or operable detection equipment is required to be maintained in the vicinity of the affected barrier until the barrier is restored to functional status.

## 4.19 Fire Detection Instrumentation

### Applicability

Applies to surveillance of fire detection instrumentation required operable by Specification 3.5.5.

### Objective

To assure that the fire detection instrumentation required operable by Specification 3.5.5 is available and operable when needed.

### Specification

4.19.1 Each required fire detection instrument shall be demonstrated operable at least once per six months by performance of a channel functional test.

4.19.2 The NFPA Code 72D Class A supervised circuits supervision associated with the detector alarms of each required fire detection instrument shall be demonstrated operable at least once per six months.

4.19.3 The non-supervised circuits between the local panels in Specification 4.19.2 and the control room shall be demonstrated operable at least once per 31 days.

### Bases

These required demonstrations will assure operability of the fire detection instrumentation.

## 4.20 Fire Suppression Water System

### Applicability

Applies to surveillance of fire protection equipment required operable by Specification 3.17.

### Objective

To assure that the applicable fire protection equipment is available and operable when needed.

### Specification

4.20.1 The fire protection water system shall be demonstrated operable:

a. At least once per 31 days on a staggered test basis by starting each pump by automatic actuation and operating it for 15 minutes with flow through the relief line;

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

c. At least once per six months by performing a flush of the system main;

d. At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:

   1) Verifying that each pump develops at least 2500 GPM at a discharge pressure of 125 psi;

   2) Verifying that each high pressure pump starts (sequentially) to maintain the fire suppression water system pressure $\geq$ 85 psig.

e. At least once per three years by performing a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.

4.20.2 The fire pump diesel engine shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying the fuel storage day tank to be at least 5/8 full of fuel (approximately 155 gallons).

b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM-D975-74 with respect to viscosity, water content and sediment.

c. At least once per 18 months, during shutdown, by subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service.

4.20.3 The fire pump diesel starting 24-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1) The electrolyte level of each battery is above the plates, and

2) The overall battery voltage is $\geq$ 24 volts.

b. At least once per 92 days by verifying that the specific gravity is appropriate for continued service of the battery.

c. At least once per 18 months by verifying that:

1) The batteries, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration, and

2) The battery-to-battery and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

Bases

These required demonstrations, tests, and verifications will assure the availability of the fire suppression water system when it is needed.

The intention of 4.20.1.a is to test each fire pump (not including the jockey pump) and the automatic starting logic. This can be accomplished by allowing the fire system pressure to drop to the automatic start setpoint. The pump will then start and discharge through the relief line until stopped by the operator.

For purposes of the annual system main flush, the system main consists of line KE-1-12.

## 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.

## 4.22 Control Room and Auxiliary Control Room Halon Systems

### Applicability

Applies to surveillance of the control room and auxiliary control room Halon systems which are required to be operable by Specification 3.19.

### Objective

To assure that the control room and auxiliary control room Halon systems are available and operable when needed.

### Specification

4.22.1 The control room and auxiliary control room Halon systems shall be demonstrated operable:

a. At least once per 6 months by verifying Halon storage tank **weight and pressure;**

b. At least once per 18 months by verifying the systems actuate manually and automatically (upon receipt of a simulated test signal).

### Bases

Performance of the testing required by these specifications will assure that the Control Room and Auxiliary Control Room Halon systems are operable when needed.

## 4.23 Fire Hose Stations

### Applicability

Applies to those fire hose stations protecting safety-related areas, which are required to be operable by Specification 3.20.

### Objective

To assure that the fire hose stations protecting safety-related areas are operable to provide manual fire suppression capability when needed.

### Specification

4.23.1 Each of the fire hose stations protecting safety-related areas shall be demonstrated operable:

a. At least once per 31 days by visual inspection of the station to assure all required equipment is at the station;

b. At least once per 18 months by:

1) Removing the hose for inspection and re-racking; and

2) Replacement of all degraded gaskets in couplings.

c. At least once per 3 years by:

1) Partially opening each hose station valve to verify valve operability and no flow blockage.

2) Conducting a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station.

### Bases

The required inspections and test will assure that fire hose stations serving safety-related areas are maintained operable and ready for use when needed.

## 4.24 Penetration Fire Barriers

### Applicability

Applies to surveillance of the penetration barriers required intact by Specification 3.21.

### Objective

To assure that significant barrier degradation is detected and corrected.

### Specification

4.24.1 Each of the penetration fire barriers protecting safety-related areas shall be verified to be intact by a visual inspection;

a. At least once per 18 months, and

b. Prior to declaring a penetration fire barrier intact following repairs or maintenance.

### Bases

The visual inspection will detect cracking, spalling, etc. that may degrade the functionability of the barrier. Degraded barriers will be corrected per Specification 3.21.

## 6.0 ADMINISTRATIVE CONTROLS

### 6.1 RESPONSIBILITY

6.1.1 The Superintendent of Power Plant shall be responsible for overall facility operation. In his absence, the Assistant Superintendent of Power Plant shall assume all responsibility and perform all duties of the Superintendent of Power Plant. If both the Superintendent of Power Plant and his assistant are absent, these responsibilities and duties are assumed by the Supervisor of Plant Operations followed by the Technical Support Engineer.

### 6.2 ORGANIZATION

OFFSITE

6.2.1 The offsite organization for facility management and technical support shall be as shown on Figure 6.2-1.

FACILITY STAFF

6.2.2 The Facility organization shall be as shown on Figure 6.2-2A and 6.2-2B and each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1.

### 6.3 FACILITY STAFF QUALIFICATIONS

6.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable position, except for the Health Physics Supervisor who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

### 6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Supervisor of Plant Operations and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR Part 55.

6.4.2 A training program for fire protection training shall be maintained and shall meet or exceed the requirements of Section 27 of the NFPA Code-1975 with the exception of frequency of training which shall be six times per year.

### 6.5 REVIEW AND AUDIT

6.5.1 Plant Safety Committee (PSC) Function

6.5.1.1 The Plant Safety Committee shall function to advise the Superintendent of Power Plant on all matters related to nuclear safety.

COMPOSITION

6.5.1.2 The Plant Safety Committee shall be composed of the:

TABLE 6.2-1

ARKANSAS NUCLEAR ONE

MINIMUM SHIFT CREW COMPOSITION#

UNIT 1

| LICENSE CATEGORY | ABOVE COLD SHUTDOWN | COLD AND REFUELING SHUTDOWNS |
|---|---|---|
| SOL | 1 | 1* |
| OL | 2 | 1 |
| NON-LICENSED | 2 | 1 |

*Does not include the licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling, supervising refueling operations after the initial fuel loading.

#Shift crew composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accomodate unexpected absence of on duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements of Table 6.2-1.

Additional Requirements:

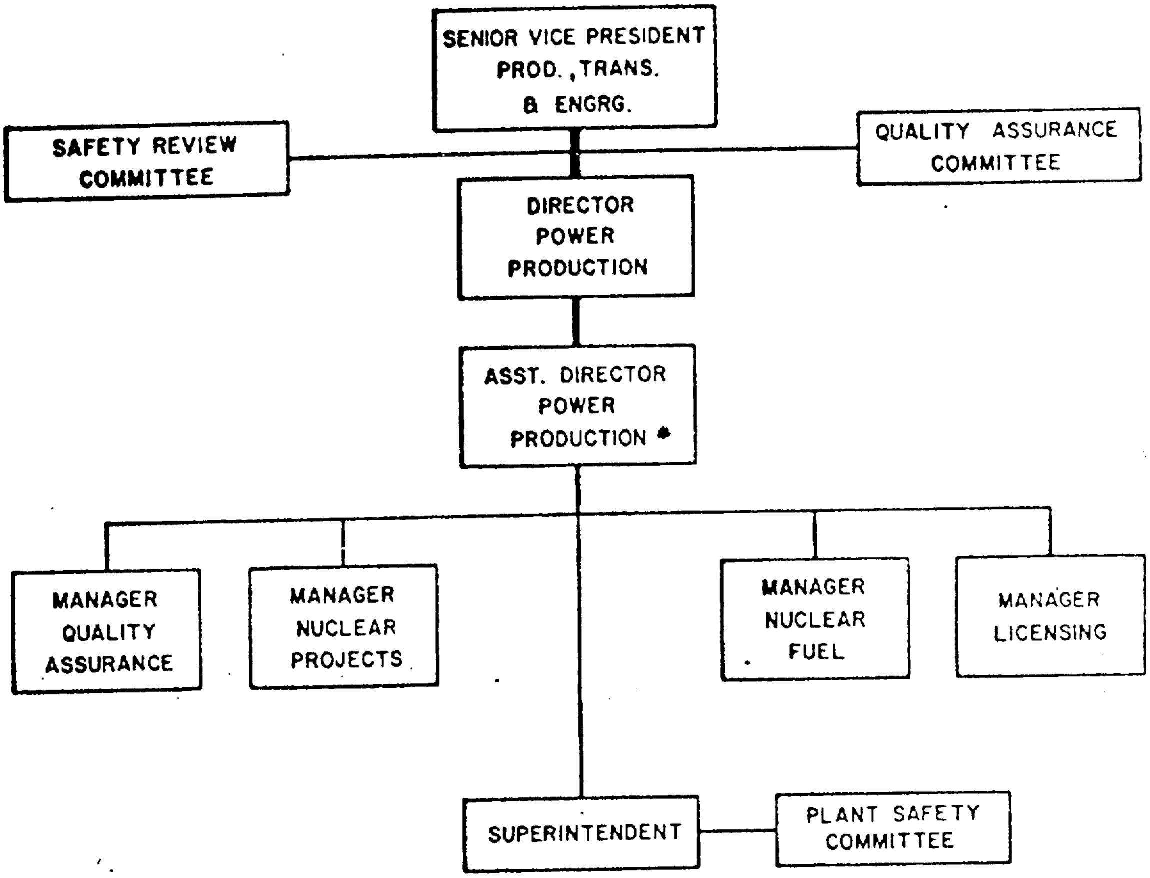
1. At least one licensed Operator shall be in the control room when fuel is in the reactor.

2. At least two licensed Operators shall be present in the control room during reactor start-up, scheduled reactor shutdown and during recovery from reactor trips.

3. An individual qualified in radiation protection procedures shall be on site when fuel is in the reactor.

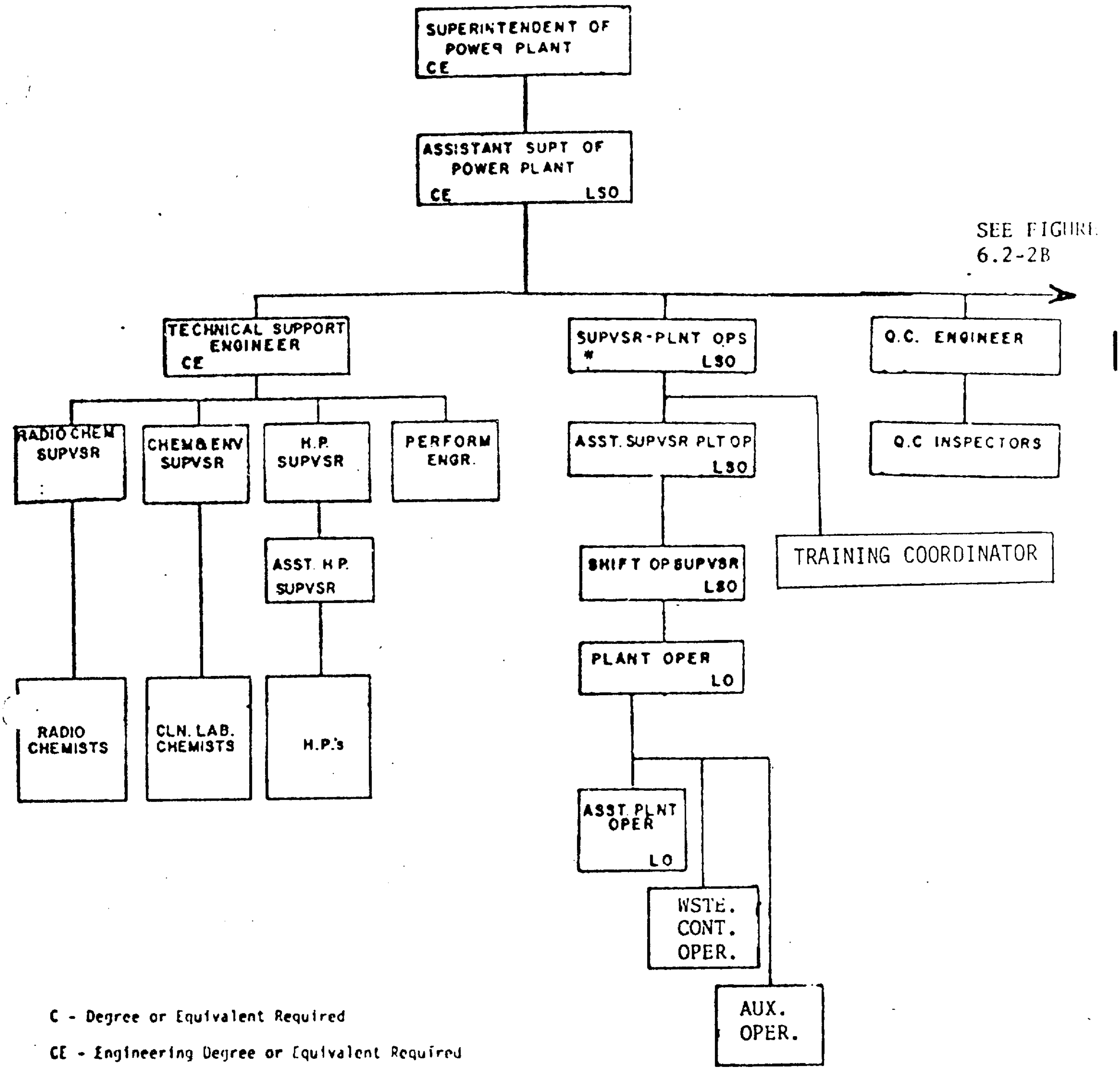
4. All refueling operations after the initial fuel loading shall be directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.

5. At least 3 individuals with fire protection training shall be maintained onsite at all times. These individuals shall not include the minimum shift crew necessary for safe shutdown of the unit (2 members) or any personnel required for other essential functions during a fire emergency.




*CORPORATE RESPONSIBILITY FOR FIRE PROTECTION PROGRAM

| | | |
|---|---|---|
| ARKANSAS POWER & LIGHT COMPANY<br>ARKANSAS NUCLEAR ONE - UNIT 1 | MANAGEMENT ORGANIZATION CHART | FIGURE 6.2-1 |




C - Degree or Equivalent Required

CE - Engineering Degree or Equivalent Required

LSO - Senior Operator License Required

LO - Operator License Required

*ONSITE RESPONSIBILITY FOR FIRE PROTECTION PROGRAM

| ARKANSAS POWER & LIGHT CO.<br>ARKANSAS NUCLEAR ONE-UNIT 1 | FUNCTIONAL ORGANIZATION FOR PLANT OPERATION | FIGURE 6.2-2A |
|---|---|---|

REVIEW

6.5.2.7 The SRC shall review:

a. The safety evaluations for 1) changes to procedures, equipment or systems and 2) tests or experiments completed under the provision of Section 50.59, 10 CFR, to verify that such actions did not constitute an unreviewed safety question.

b. Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

c. Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

d. Proposed changes in Technical Specifications or licenses.

e. Violations of applicable statutes, codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

f. Significant operating abnormalities or deviations from normal and expected performance of plant equipment that affect nuclear safety.

g. Reportable occurrences requiring 24 hour notification to the Commission.

h. Reports and meeting minutes of the PSC.

AUDITS

6.5.2.8 Audits of facility activities shall be performed under the cognizance of the SRC. These audits shall encompass:

a. The conformance of facility operation to all provisions contained within the Technical Specifications and applicable license conditions at least once per year.

b. The performance and retraining of all members of the plant management and operations staff, and the performance, training, and qualifications of new members of the entire plant staff at least once per year.

c. The results of all actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety at least once per six months.

d. The Facility Emergency Plan and implementing procedures at least once per two years.

e. The Facility Fire Protection Program and implementing procedures at least once per 24 months.

e. The Facility Security Plan and implementing procedures at least once per two years.

f. Any other area of facility operation considered appropriate by the SRC or the Senior Vice President (PT&E)

6.5.2.9 Special Inspections and Audits

A. An independent fire protection and loss prevention program inspection and audit shall be performed at least once per 12 months utilizing either qualified offsite licensee personnel or an outside fire protection firm.

AUTHORITY

6.5.2.10 The SRC shall report to and advise the Senior Vice President (PT&E) on those areas of responsibility specified in Section 6.5.2.7 and 6.5.2.8.

RECORDS

6.5.2.11 Records of SRC activities shall be prepared, approved and distributed as indicated below:

a. Minutes of each SRC meeting shall be prepared, approved and forwarded to the Senior Vice President (PT&E) within 30 days following each meeting.

b. Reports of reviews encompassed by Section 6.5.2.7 e, f, g and h above, shall be prepared, approved and forwarded to the Senior Vice President (PT&E) within 30 days following completion of the review.

c. Audit reports encompassed by Section 6.5.2.8 above, shall be forwarded to the Senior Vice President (PT&E) and to the management positions responsible for the areas audited within 30 days after completion of the audit.

6.6 REPORTABLE OCCURRENCE ACTION

6.6.1 The following actions shall be taken for Reportable Occurrences:

a. The Commission shall be notified and/or a report submitted pursuant to the requirements of Specification 6.12.

b. Each Reportable Occurrence requiring 24 hour notification to the Commission shall be reviewed by the PSC and submitted to SRC, the Assistant Director, Power Production by the Superintendent of Power Plant.

6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

a. The facility shall be placed in at least hot shutdown within one hour.

b. The Nuclear Regulatory Commission shall be notified and a report submitted pursuant to the requirements of 10 CFR 50.36 and Specification 6.12.3.1

## 6.8 PROCEDURES

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, November, 1972.

b. Refueling operations.

c. Surveillance and test activities of safety related equipment.

d. Security Plan implementation.

e. Emergency Plan implementation.

f. Fire Protection Program Implementation.

6.8.2 Each procedure of 6.8.1 above, and changes thereto, shall be reviewed by the PSC and approved by the Superintendent of Power Plant prior to implementation and reviewed periodically as set forth in administrative procedures.

6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

a. The intent of the original procedure is not altered.

b. The change is approved by two members of the plant staff, at least one of whom holds a Senior Reactor Operator's License on the unit affected.

c. The change is documented, reviewed by the PSC and approved by the Superintendent of Power Plant within 14 days of implementation.

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

SUPPLEMENT TO NOVEMBER 28, 1977 SAFETY EVALUATION
BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 30 TO
FACILITY OPERATING LICENSE NO. DPR-51

ARKANSAS POWER & LIGHT COMPANY

ARKANSAS NUCLEAR ONE - UNIT NO. 1

DOCKET NO. 50-313

INTRODUCTION

By letter dated November 28, 1977, we forwarded to Arkansas Power & Light Company (AP&L) recommended fire protection Technical Specifications for Arkansas Nuclear One - Unit No. 1. We requested reply within 20 days of this letter, asking that AP&L either accept the technical specifications or delineate specific requirements to which AP&L objected. AP&L's response, by letter dated December 12, 1977, was that the specifications were "unacceptable", with no bases therefor, except to state that any changes would have to be reviewed by applicable committees and that "... reviews and approvals may not be complete before January 15, 1978." Insistent urging by our staff resulted in a January 17, 1978 response by AP&L, received by the NRC staff on January 20, 1978. Our review of this response showed that, for the most part, the proposed specifications were unacceptable. However, subsequent discussions with the AP&L staff led to modification of the specifications in question. Such modification was acceptable to AP&L and the NRC. This Supplement to the Safety Evaluation enclosed in the aforementioned November 28, 1977 letter sets forth the basis for the acceptance or modification of the proposed AP&L specifications. Paragraph numbers cited conform to the technical specifications and the AP&L proposed changes are discussed herein.

DISCUSSION AND EVALUATION

1. Proposed Specification 3.5.5.2 - Deletion of the word "Special" as it applies to the required report is acceptable, because the report is filed in accordance with Specification 6.12.3.1(b) as stated. This applies throughout where a "Special" Report was previously mentioned. Additionally, all detection instrumentation has been included.

2. Proposed Specification 3.17 - The AP&L proposal was unacceptable. The basic NRC safety philosophy requires a "Defense-in-Depth" approach. The AP&L proposal showed a lack of understanding of how this NRC safety approach is applied to fire protection. The report of the NRC's Special Review Group

which studied the Browns Ferry fire discusses in great detail the application of defense in depth to fire protection at nuclear plants. Additionally, the staff's requirements as set forth in Branch Technical Position 9.5-1 and Appendix A, which were sent to all licensees, discuss how the NRC staff has developed detailed requirements to implement this safety approach and General Design Criterion 3 of Appendix A to 10 CFR 50.

This specific Technical Specification, 3.17, was inconsistent with NRC requirements that require protection from random single failures; for fire protection this means that automatic equipment should have a manual backup. AP&L would delete this requirement, partly on the assumption that the reactor is safely shutdown when reactor temperature is less than 200°F. The NRC requirement is that the reactor must be maintained in safe shutdown. To meet this requirement, decay heat removal is essential even with the reactor at 200°F. The NRC staff requires that fires be suppressed as soon as practical, even if the initial consequences may appear to be acceptable, as in the case of the reactor at less than 200°F. The NRC staff also did not agree with the AP&L assessment that only redundant safety-related equipment in a common area needs protection. The NRC staff requires that safety-related backup equipment also be protected from fires.

AP&L has agreed to the NRC requirements and Specification 3.17 has been appropriately modified.

3. Proposed Specification 3.18 - This proposed specification was unacceptable in that the 200°F limit has no justification, as noted above. Additionally, we will require continuous manning of a fire watch (or operable fire detection equipment) if any sprinkler system (all sprinkler systems have been incorporated into the specification) is inoperable. We did not accept "on the average" detection within 30 minutes as stated by AP&L. The lessons learned at Brown's Ferry are clearly applicable here, in that immediate suppression by trained personnel could have prevented the chain of events which followed. AP&L has agreed to accept this specification as the staff modified it.

4. Proposed Specification 3.19 - The requested 200°F limit was unacceptable as noted above. However, AP&L's proposal that the continuous fire watch is unnecessary, in the form of a person other than the control room operators, has been reviewed and accepted by the NRC staff. The control room personnel will be able to detect a fire and summon assistance quickly.

5. Proposed Specification 3.20 - The NRC staff did not share AP&L's assumption that the cable spreading room is the only safety-related area for which fire suppression equipment should be included in technical specifications. We have clarified our proposed specification to note that hose stations protecting (rather than located in) areas containing safety-related equipment must be operable. The requested 200° limit was unacceptable as discussed above. AP&L

has agreed to accept the specification as modified by the staff.

6. Proposed Specification 3.21 - We agree with the AP&L assessment that to require a fire barrier to be "functional" could be interpreted as requiring a test to assure it is indeed functional. We have therefore revised the specification to require that the barriers be intact. However, we will not, for reasons stated previously, accept a periodic fire watch upon discovering one or more barriers not intact. Either a continuous watch or fire detection equipment is acceptable. AP&L has agreed to accept this specification.

7. Proposed Specification 4.19 - This proposal was unacceptable in that AP&L evidently relied upon their assumption that few areas need automatic protection or, in this case, detection for fires. As discussed under proposed Specification 3.17, the NRC's basic safety approach requires detection and suppression of fires, even if the initial consequences may appear to be acceptable. Because the fire detectors serve various areas containing safety-related equipment, we consider their operability to be important and therefore require the additional surveillance requirements. AP&L initially proposed to delete these requirements, but has now accepted them.

8. Proposed Specification 4.20 - AP&L provided no basis for extending the interval from 31 days between successive valve position verifications to a 3-month interval. The NRC has required a 31-day interval for other licensees for both fire protection valve positions and those of other safety-related systems. AP&L agreed to accept the Specification modified to limit surveillance to those valves not locked, sealed, or otherwise secured in their correct position. This was acceptable to the NRC on an interim basis. We agree with the AP&L clarification of Specification 4.20.1.c to state that the system main is to be flushed. We have deleted original Specification 4.20.1.d because there are no automatic (testable) valves in the ANO-1 system, and have also changed Specification 4.20.1.d to reflect this fact. As requested by AP&L, we have deleted Specifications 4.20.2.a(2) and 4.20.2.c(2) which are already covered by Specification 4.20.1.a.

9. Proposed Specification 4.21 - We have incorporated all sprinkler systems into this specification. We concur with the AP&L assessment that the cable spreading room sprinkler system is only maintainable by verification of system alignment, since the fusible head sprinkler cannot be tested by other means. Specification 4.21 has been changed accordingly. Requirements for the other sprinkler systems have been added. These requirements reflect the differences in systems.

10. Proposed Specification 4.22 - We have concurred in the AP&L statement that it is impractical to perform a flow test of the Halon systems because the leakage of Halon during such a test will require Halon removal from the

habitable area of the room. There is also no instrumentation on the systems which would allow such a test to be performed.

11. Proposed Specification 4.23 - The proposed specification was unacceptable for the reasons stated above in the discussion of proposed Specification 3.20. However, we again clarified the intent of our requirements by modifying the applicability of the specification to those hose stations protecting (rather than located in) safety-related areas.

12. Proposed Specification 4.24 - We have modified the specification as discussed above under Proposed Specification 3.21.

13. Proposed Specification 6.4.2 - We concur in the interim deletion of responsibility assignment for fire protection training, based upon an AP&L commitment to include this assignment in a separately-issued specification change request.

14. Proposed Table 6.2-1 - We have concurred, during the interim period prior to final resolution of this issue, that the 3-man Fire Brigade proposed by AP&L is acceptable. Should the NRC staff review of this subject result in the requirement for a 5-man Fire Brigade, this specification will be changed.

15. Proposed deletion of NRC Specifications 6.5.2.9.A and B - The proposed deletion of NRC requirements for the use of outside consultants in the performance of Special Inspections and Audits was initially unacceptable. This requirement has been imposed on licensees since the fire at Brown's Ferry. The NRC staff believes that this degree of independence from the pressure of power production is necessary to assure adequate objectivity. Additionally, the expertise of an outside fire consultant is needed to complement that of the licensee's own staff. However, we have concurred for the interim period because the need for such a consultant will be established and the specification appropriately modified at the completion of the final ANO-1 review. Such completion will take place long before the originally specified three years have passed.

## CONCLUSION

We have concluded, based on the specific items discussed above, that the NRC Technical Specifications set forth in our November 28, 1977 letter, as supplemented by changes discussed above, will assure that the fire protection program at ANO-1 is adequate on an interim basis until such time that our overall review is complete, required equipment is installed and operable, and final specifications have been developed and issued. The discussion, evaluation, and conclusions of the Safety Evaluation enclosed in our November 28, 1977 letter are still valid.

Date: March 3, 1978

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

The amendment incorporates fire protection Technical Specifications on the existing fire protection equipment and adds administrative controls related to fire protection at the facility. This action is being taken pending completion of the Commission's overall fire protection review of the facility.

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

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

For further details with respect to this action, see (1) the application for amendment dated June 16, 1977, and supplement thereto dated January 17, 1978, (2) the Commission's letters dated October 21, 1976, and November 28, 1977, (3) Amendment No. 30 to License No. DPR-51, (4) the Commission's related Safety Evaluation issued as an enclosure to the Commission's November 28, 1977 letter, and (5) the currently issued supplement to item (4). 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 72801. A single copy of items (2) through (5) above may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C., Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 3rd day of March, 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert W. Reid

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