FEBRUARY 1 3 1978

Docket Nos. 50-269
50-270
and 50-287

Duke Power Company
ATTN: Mr. William O. Parker, Jr.
ATTN: Mr. William O. Parker, Jr.
Vice President
Steam Production
Post Office Box 2178
422 South Church Street
Charlotte, North Carolina 28242

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 57, 57 and 54 for License Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station Unit Nos. 1, 2 and 3. These amendments are in response to your application dated March 1, 1977 as supplemented December 15, 1977.

The amendments revise the Oconee Technical Specifications to incorporate requirements for fire protection.

The changes to the Oconee Technical Specifications were supported by the Safety Evaluation issued with our letter of November 25, 1977, except for the minor changes proposed by your letter of December 15, 1977, which are discussed herein.

You proposed, for Technical Specification 3.17.5, that the requirement for a continuous fire watch be changed to an hourly fire watch patrol for safety related areas where a fire barrier is non-functional, and the area is protected by operable fire detection instrumentation. If the instrumentation becomes inoperable, you would establish a continuous fire watch. Since the instrumentation will provide the prompt detection of fires which we were requiring by the establishment of a continuous fire watch, and, a fire watch would be established if the instrumentation becomes inoperable, we conclude that this change is acceptable.

An action statement requiring the reactor to be placed in hot standby within 12 hours and in cold shutdown within the following 48 hours has been added to Technical Specification 3.17.2.2(a). This action would be required if a backup Fire Suppression Water System could not be

OFFICE➤						
SURNAME➤						
DATE➤						

established whithin 24 hours after the Fire Suppression Water System becomes inoperable. The times specified for action are consistent with those specified for ECCS action statements. We have discussed this change with you and have agreed to its inclusion. On these bases, we find this change acceptable.

You requested that proposed Technical Specification 4.19.1(f) be deleted since all valves in the fire protection system are testable during plant operation and this specification applied only to non-testable valves. This change is acceptable.

For Technical Specification 4.19.2, you proposed during telephone discussions with us, to add a note that would make the interval for testing those detectors that are inaccessible during power operation compatible with plant outages. We find this change to be acceptable in reaching this conclusion we took into account the fact that there are other systems within containment which can aid in the detection of fire such as temperature detectors (e.g., Reactor Building dome Temperature Sensor and reactor coolant pump temperature sensor). Considering the existence of this alternate backup means of detection we do not feel that a plant shutdown solely for the purpose of testing the primary means of fire detection inside containment would be warranted.

A copy of the Notice of Issuance is also enclosed.

Sincerely,

Original Signed By

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment No. 51 to DPR-38
2. Amendment No. 51 to DPR-47
3. Amendment No. 54 to DPR-55
4. Notice of Issuance

cc w/enclosures:
See next page

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FOR PREVIOUS CONCURRENCE SEE ATTACHED YELLOW.

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cc: Mr. William L. Porter
Duke Power Company
P. O. Box 2178
422 South Church Street
Charlotte, North Carolina 28242

J. Micheal McGarry, III, Esquire
DeBevoise & Liberman
700 Shoreham Building
806-15th Street, NW.,
Washington, D.C. 20005

Oconee Public Library
201 South Spring Street
Walhalla, South Carolina 29691

Honorable James M. Phinney
County Supervisor of Oconee County
Walhalla, South Carolina 29621

Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 20460

U. S. Environmental Protection Agency
Region IV Office
ATTN: EIS COORDINATOR
345 Coutland Street, N. E.
Atlanta, Georgia 30308

Chrys Baggett
State Clearinghouse
Division of Policy Development
116 West Jones Street
Raleigh, N.C. 27603

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

DUKE POWER COMPANY

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 57
License No. DPR-38

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Duke Power Company (the licensee) dated March 1, 1977, as supplemented December 15, 1977, 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 3.B of Facility License No. DPR-38 is hereby amended to read as follows:

   3.B Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 57, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 20 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 13, 1978

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

DUKE POWER COMPANY

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 57
License No. DPR-47

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Duke Power Company (the licensee) dated March 1, 1977, as supplemented December 15, 1977, 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 3.B of Facility License No. DPR-47 is hereby amended to read as follows:

   3.B Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 57, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 20 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 13, 1978

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

DUKE POWER COMPANY

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 54
License No. DPR-55

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Duke Power Company (the licensee) dated March 1, 1977, as supplemented December 15, 1977, 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 3.B of Facility License No. DPR-55 is hereby amended to read as follows:

   3.B Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 54, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 20 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 13, 1978

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 57 TO DPR-38

AMENDMENT NO. 57 TO DPR-47

AMENDMENT NO. 54 TO DPR-55

DOCKET NOS. 50-269, 50-270, 50-287

Revise Appendix A as follows:

Remove the following pages and replace with identically numbered pages.

iii
iv
v
6.1-1
6.1-2
6.1-5
6.1-6
6.1-7
6.1-8
6.4-1

Add the following new pages:

3.17-1
3.17-2
3.17-3
3.17-4
3.17-5
4.19-1
4.19-2

Section		Page
3.4	STEAM AND POWER CONVERSION SYSTEM	3.4-1
3.5	INSTRUMENTATION SYSTEMS	3.5-1
3.5.1	Operational Safety Instrumentation	3.5-1
3.5.2	Control Rod Group and Power Distribution Limits	3.5-6
3.5.3	Engineered Safety Features Protective System Actuation Setpoints	3.5-25
3.5.4	Incore Instrumentation	3.5-27
3.6	REACTOR BUILDING	3.6-1
3.7	AUXILIARY ELECTRICAL SYSTEMS	3.7-1
3.8	FUEL LOADING AND REFUELING	3.8-1
3.9	RELEASE OF LIQUID RADIOACTIVE WASTE	3.9-1
3.10	RELEASE OF GASEOUS RADIOACTIVE WASTE	3.10-1
3.11	MAXIMUM POWER RESTRICTIONS	3.11-1
3.12	REACTOR BUILDING POLAR CRANE AND AUXILIARY HOIST	3.12-1
3.13	SECONDARY SYSTEM ACTIVITY	3.13-1
3.14	SHOCK SUPPRESSORS (SNUBBERS)	3.14-1
3.15	PENETRATION ROOM VENTILATION SYSTEMS	3.15-1
3.16	HYDROGEN PURGE SYSTEM	
3.17	FIRE PROTECTION AND DETECTION SYSTEMS	3.17-1
4	SURVEILLANCE REQUIREMENTS	4-1
4.0	SURVEILLANCE STANDARDS	4.1-1
4.1	OPERATIONAL SAFETY REVIEW	4.1-1
4.2	REACTOR COOLANT SYSTEM SURVEILLANCE	4.2-1
4.3	TESTING FOLLOWING OPENING OF SYSTEM	4.3-1
4.4	REACTOR BUILDING	4.4-1

Section		Page
4.4.1	Containment Leakage Tests	4.4-1
4.4.2	Structural Integrity	4.4-6
4.4.3	Hydrogen Purge System	4.4-10
4.5	EMERGENCY CORE COOLING SYSTEMS AND REACTOR BUILDING COOLING SYSTEMS PERIODIC TESTING	4.5-1
4.5.1	Emergency Core Cooling Systems	4.5-1
4.5.2	Reactor Building Cooling Systems	4.5-6
4.5.3	Penetration Room Ventilation System	4.5-10
4.5.4	Low Pressure Injection System Leakage	4.5-12
4.6	EMERGENCY POWER SYSTEM PERIODIC TESTING	4.6-1
4.7	REACTOR CONTROL ROD SYSTEM TESTS	4.7-1
4.7.1	Control Rod Drive System Functional Tests	4.7-1
4.7.2	Control Rod Program Verification	4.7-2
4.8	MAIN STEAM STOP VALVES	4.8-1
4.9	EMERGENCY FEEDWATER PUMP PERIODIC TESTING	4.9-1
4.10	REACTIVITY ANOMALIES	4.10-1
4.11	ENVIRONMENTAL SURVEILLANCE	4.11-1
4.12	CONTROL ROOM FILTERING SYSTEM	4.12-1
4.13	FUEL SURVEILLANCE	4.13-1
4.14	REACTOR BUILDING PURGE FILTERING SYSTEM	4.14-1
4.15	IODINE RADIATION MONITORING FILTERS	4.15-1
4.16	RADIOACTIVE MATERIALS SOURCES	4.16-1
4.18	HYDRAULIC SHOCK SUPPRESSORS (SNUBBERS)	4.18-1
4.19	FIRE PROTECTION AND DETECTION SYSTEM	4.19-1

Section		Page
5	DESIGN FEATURES	5.1-1
5.1	SITE	5.1-1
5.2	CONTAINMENT	5.2-1
5.3	REACTOR	5.3-1
5.4	NEW AND SPENT FUEL STORAGE FACILITIES	5.4-1
6	ADMINISTRATIVE CONTROLS	6.1-1
6.1	ORGANIZATION, REVIEW, AND AUDIT	6.1-1
6.1.1	Organization	6.1-1
6.1.2	Review and Audit	6.1-2
6.2	ACTION TO BE TAKEN IN THE EVENT OF AN INCIDENT REPORTABLE TO THE COMMISSION	6.2-1
6.3	ACTION TO BE TAKEN IN THE EVENT A SAFETY LIMIT IS EXCEEDED	6.3-1
6.4	STATION OPERATING PROCEDURES	6.4-1
6.5	STATION OPERATING RECORDS	6.5-1
6.6	STATION REPORTING REQUIREMENTS	6.6-1
6.6.1	Routine Reports	6.6-1
6.6.2	Non-Routine Reports	6.6-6
6.6.3	Special Reports	6.6-9
6.7	RADIOLOGICAL CONTROLS	6.7-1

3.17 FIRE PROTECTION AND DETECTION SYSTEMS

Applicability

This specification applies to the operability of fire protection and detection systems which protect systems and equipment required for safe shutdown.

Objective

To assure the operability of fire protection and detection system

Specification

3.17.1 The minimum fire detection instrumentation for each fire detection zone shown in Table 3.17-1 shall be operable. When this specification is determined not to be met, appropriate action shall be taken consisting of one or more of the following:

1. Within 1 hour, a fire watch patrol shall be established to inspect an accessible zone with the inoperable instrumentation at least once per hour.

2. The inoperable instrumentation shall be restored to operable status within 14 days or a report shall be submitted to the Commission within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrumentation to operable status.

3.17.2 Two high pressure service water pumps with a capacity of 6000 gpm each and with automatic initiation logic shall be operable and aligned to the high pressure fire header. When this specification is determined not to be met, appropriate action shall be taken consisting of the following:

1. The inoperable equipment shall be restored to operable status within 7 days or a report shall be submitted to the Commission within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system.

2. With no Fire Suppression Water System operable, in lieu of the above, the following action shall be taken.

   a) Within 24 hours a backup Fire Suppression Water System shall be established, If a backup Fire Suppression Water System cannot be established within 24 hours, place the reactor in Hot Standby within the next twelve (12) hours and in cold shutdown within the following forty-eight (48) hours.

   b) Within 24 hours the Commission shall be notified by telephone, and in writing no later than the first working day following the event,

   c) Within 14 days of the event, a report shall be submitted to the Commission outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

3.17.3 The sprinkler systems in safety related areas listed in Table 3.17-1 shall be operable. If a system is determined to be inoperable, the following corrective action shall be taken.

1. A continuous fire watch with backup fire suppression equipment shall be established in the area within 1 hour.

2. The sprinkler system shall be restored to operable status within 14 days or a report shall be submitted to the Commission within the next 30 days outlining the cause of inoperability and the plans for restoring the system to operable status.

3.17.4 The fire hose stations listed in Table 3.17-1 shall be operable or additional equivalent capacity hoses shall be provided at an operable hose station within one hour such that the additional hoses can be readily connected to the operable station and extended into the unprotected area if the need arises.

3.17.5 When a penetration fire barrier protecting a safety related area is determined to be non-functional, the area shall be protected by operable fire detection instrumentation and within one hour a fire watch patrol shall be established to inspect the area at least once per hour. If the the fire detection instrumentation in the area is inoperable, a continuous fire watch shall be established on at least one side of the affected penetration within one hour.

TABLE 3.17-1

A. Fire Detection Instrumentation

ELEV	UNIT	EQUIPMENT/LOCATION PROTECTED	DETECTORS PROVIDED/OPERABLE
771+0	1-2	Motor Control Centers	3/2
	3	Motor Control Centers	2/1
775+0	1	Emer FW Pump	1/1
	2	Emer FW Pump	1/1
	3	Emer FW Pump	1/1
796+6	1	Reactor Bldg Penetrations RCP's RBCU	4/4 4/4 3/2
	2	Same as Unit 1	
	3	Same as Unit 1	
	1-2	Equipment Room	12/6
	3	Equipment Room	5/3
	1	Load Centers, Switchgear	11/6
	2	Same as Unit 1	
	3	Load Centers, Switchgear	8/4
	1-2	Switchgear, Transformer	4/2
	3	Switchgear	3/2
809+3	1	Battery Room Motor Control Centers	2/1 3/2
	1-2	Cable Spread Room	8/4
	2	Battery Room Motor Control Centers	2/1 3/2
	3	Battery Room Motor Control Centers	2/1 3/2
	3	Cable Spread Room	6/3
822+0	1-2	Control Room	4/2
	1	Penetration Room	4/4
	1	Cable Shaft	1/1

Amendments 57, 57 & 54

TABLE 3.17-1 (cont.)

ELEV	UNIT	EQUIPMENT/LOCATION PROTECTED	DETECTORS PROVIDED/OPERABLE
	2	Penetration Room	4/4
	2	Cable Shaft	2/1
	3	Control Room	3/2
	3	Penetration Room	4/4
	3	Cable Shaft	1/1

B. Sprinkler Systems

Emergency FDWTR Pump	Units 1, 2 and 3
Transformers	CT-1
	CT-2
	CT-3
	CT-4
	CT-5

C. Fire Hose Stations

ELEV	HOSE STATION NO.	Hose Station (Turbine Building)	
ELEV 771+0	AX-1	TB 1-B-19	TB 3-D-28
		TB 1-D-28	TB 3-D-43
	AX-2	TB 1-D-39	TB 3-F-42
		TB 1-D-45	TB 3-J-23
	AX-3	TB 1-D-53	TB 3-J-28
		TB 1-F-43	TB 3-J-32
	AX-4	TB 1-J-23	TB 3-J-40
		TB 1-J-28	TB 3-J-47
	AX-5	TB 1-J-32	TB 3-M-24
		TB 1-J-43	TB 3-M-29
ELEV 783+9		TB 1-J-47	TB 3-M-30
		TB 1-M-24	TB 3-M-39
	AX-6	TB 1-M-29	TB 3-M-43
		TB 1-M-31	
	AX-7	TB 1-M-43	TB 5-M-24
			TB 5-M-31
	AX-8		TB 5-M-42
	AX-9		
	AX-10		
	AX-11		

Amendments 57, 57 & 54

BASES

Operability of the fire detection instrumentation ensures that adequate 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 is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to operability.

The operability of the fire suppression systems ensures 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. The fire suppression system consists of the water system, spray and/or sprinklers, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service.

In the event 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 twenty-four 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 nuclear plant.

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 fire watch patrol will be required to inspect the area at least once per hour and fire detection instrumentation will be operable in the area. If fire detection instrumentation is not operable, a continuous fire watch is required to be maintained in the vicinity of the affected barrier until the barrier is restored to functional status.

4.19 FIRE PROTECTION AND DETECTION SYSTEM

Applicability

Applies to the fire protection and detection systems which protect systems and equipment required for safe shutdown.

Objective

To verify the operability of fire protection and detection systems.

Specifications

4.19.1 The High Pressure Fire Protection System components shall be tested as follows:

	Item	Frequency
(a)	High pressure service water pump functional test	Monthly
(b)	System functional test	Every 18 months
(c)	High pressure service water pump capacity test to verify flow of 3000 gpm	Annually
(d)	System Flow Test in Accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, NFPA	Every 3 years
(e)	Alignment of fire protection valves	Monthly
(f)	Sprinkler systems in safety related areas	
	1. System functional test	Annually
	2. Inspection of spray headers	Annually
	3. Inspection of spray nozzle	Annually
(g)	Fire hose stations	
	1. Visual inspection	Monthly
	2. Maintenance inpsection	Annually
	3. Partial opening of fire hose station valve	Every 3 years
	4. Hose Hydrostatic test at least 50 psig greater than the maximum pressure at the station	Every 3 years

4.19.2 The fire detection system shall be tested for operability as follows:

Item	Frequency
(a) Operability of detectors	Semi-Annually
(b) Operability of annunciators	Semi-Annually

The testing interval for detectors which are inaccessible due to power operation may be extended until such time as the detectors become accessible for a minimum of 36 hours. The testing interval shall not extend past a refueling outage.

4.19.3 Penetration fire barriers protecting safety-related areas shall be verified functional by visual inspection at least once per 18 months and prior to declaring a penetration fire barrier functional following repairs or maintenance.

6.0 ADMINISTRATIVE CONTOLS

6.1 ORGANIZATION, REVIEW, AND AUDIT

6.1.1 Organization

6.1.1.1 The station Manager shall be responsible for overall facility operation and shall delegate in writing the succession to this responsibility during his absence.

6.1.1.2 In all matters pertaining to actual operation and maintenance and to these Technical Specifications, the station Manager shall report to and be directly responsible to the Vice President, Steam Production, through the Manager, Nuclear Production. The organization is shown in Figure 6.1-2.

6.1.1.3 The station organization for Operations, Technical Services and Maintenance shall be functionally as shown in Figure 6.1-1. Minimum operating shift requirements are specified in Table 6.1-1.

6.1.1.4 Incorporated in the staff of the station shall be personnel meeting the minimum requirements encompassing the training and experience described in Section 4 of the ANSI N18.1-1971, "Selection and Training of Nuclear Power Plant Personnel."

6.1.1.5 Retraining and replacement of station personnel shall be in accordance with Section 5.5 of the ANSI N18.1-1971, "Selection and Training of Nuclear Power Plant Personnel."

6.1.1.6 A training program for the fire brigade shall meet or exceed the requirements of Section 27 of the NFPA Code-1975, except that training sessions may be held quarterly.

6.1.2 Technical Review and Control

6.1.2.1 Activities

a. Procedures required by Technical Specification 6.4 and other procedures which affect station nuclear safety, and changes (other than editorial or typographical changes) thereto, shall be prepared by a qualified individual/organization. Each such procedure, or procedure change, shall be reviewed by an individual/group other than the individual/group which prepared the procedure, or procedure change, but who may be from the same organization as the individual/group which prepared the procedure, or procedure change. Such procedures and procedure changes may be approved for temporary use by two members of the station staff, at least one of whom holds a Senior Reactor Operator's License on the unit(s) affected. Procedures and procedure changes shall be approved prior to use or within seven days of receiving temporary approval for use by the station Manager; or by the Operating Superintendent, the Technical Services Superintendent or the Maintenance Superintendent, as previously designated by the station Manager.

b. Proposed changes to the Technical Specifications shall be prepared by a qualified individual/organization. The preparation of each proposed Technical Specifications change shall be reviewed by an individual/group other than the individual/group which prepared the proposed change, but who may

Amendments 57, 57 & 54

be from the same organization as the individual/group which prepared the proposed change. Proposed changes to the Technical Specifications shall be approved by the Station Manager.

c. Proposed modifications to station nuclear safety-related structures, systems and components shall be designed by a qualified individual/organization. Each such modification shall be reviewed by an individual/group other than the individual/group which designed the modification, but who may be from the same organization as the individual/group which designed the modification. Proposed modifications to station nuclear safety-related structures, systems and components shall be approved prior to implementation by the station Manager; or by the Operating Superintendent, the Technical Services Superintendent, or the Maintenance Superintendent, as previously designated by the station Manager.

d. Individuals responsible for reviews performed in accordance with 6.1.2.1.a, 6.1.2.1.b, and 6.1.2.1.c shall be members of the station supervisory staff, previously designated by the station Manager to perform such reviews. Each such review shall include a determination of whether or not additional, cross-disciplinary, review is necessary. If deemed necessary, such review shall be performed by the appropriate designated station review personnel.

e. Proposed tests and experiments which affect station nuclear safety and are not addressed in the FSAR or Technical Specifications shall be reviewed by the station Manager; or by the Operating Superintendent, the Technical Services Superintendent or the Maintenance Superintendent, as previously designated by the station Manager.

f. Incidents reportable pursuant to Technical Specification 6.6.2.1 and violations of Technical Specifications shall be investigated and a report prepared which evaluates the occurrence and which provides recommendations to prevent recurrence. Such reports shall be approved by the station Manager and transmitted to the Vice President, Steam Production, or his designee; and to the Director of the Nuclear Safety Review Board.

g. The station Manager shall assure the performance of special reviews and investigations, and the preparation and submittal of reports thereon, as requested by the Vice President, Steam Production.

h. The station security program, and implementing procedures, shall be reviewed at least annually. Changes determined to be necessary as a result of such review shall be approved by the station Manager and transmitted to the Vice President, Steam Production, or his designee; and to the Director of the Nuclear Safety Review Board.

i. The station emergency plan, and implementing procedures, shall be reviewed at least annually. Changes determined to be necessary as a result of such review shall be approved by the station Manager and transmitted to the Vice President, Steam Production, or his designee; and to the Director of the Nuclear Safety Review Board.

j. The station manager shall assure that an independent fire protection and loss prevention inspection and audit shall be performed annually utilizing qualified off-site personnel and that an inspection and audit by a qualified fire consultant shall be performed at intervals no greater than three years.

g. Any other area of station operation considered appropriate by the NSRB or the Vice President, Steam Production.

h. The station fire protection program and implementing procedures at least once per 24 months.

6.1.3.5 Responsibilities and Authorities

a. The NSRB shall report to and advise the Vice President, Steam Production on those areas of responsibility specified in Specifications 6.1.3.3 and 6.1.3.4.

b. Minutes shall be prepared and forwarded to the Vice President, Steam Production, and to the Senior Vice President, Production and Transmission, within 14 days following each formal meeting of the NSRB.

c. Records of activities performed in accordance with Specifications 6.1.3.3 and 6.1.3.4 shall be maintained.

d. Audit reports encompassed by Section 6.1.3.4 shall be forwarded to the Vice President, Steam Production, and to the Senior Vice President, Production and Transmission and to the management positions responsible for the areas audited within 30 days of completion of each audit.

TABLE 6.1-1

Minimum Operating Shift Requirements

With Fuel in the Three Reactor Vessels

Minimum AEC License Requirements	Unit 1 or 2 Above Cold Shutdown; Unit 1 Cold Shutdown	Units 1 and 2 Above Cold Shutdown; Unit 3 Cold Shutdown	Units 1 or 2 Above Cold Shutdown; Unit 3 Above Cold Shutdown	Units 1 and 2 Cold Shutdown; Unit 3 Above Cold Shutdown	Units 1, 2, and 3 Above Cold Shutdown	Units 1, 2, and 3 Cold Shutdown
Senior Reactor Operator	2	2	2	2	3	2
Reactor Operator	4	4	4	4	4	3
Unlicensed Operator	2	2	2	2	4	

Additional Requirements:

1. One licensed operator per unit shall be in the Control Room at all time when there is fuel in the reactor vessel.

2. Two licensed operators shall be in the Control Room during startup and scheduled shutdown of a reactor.

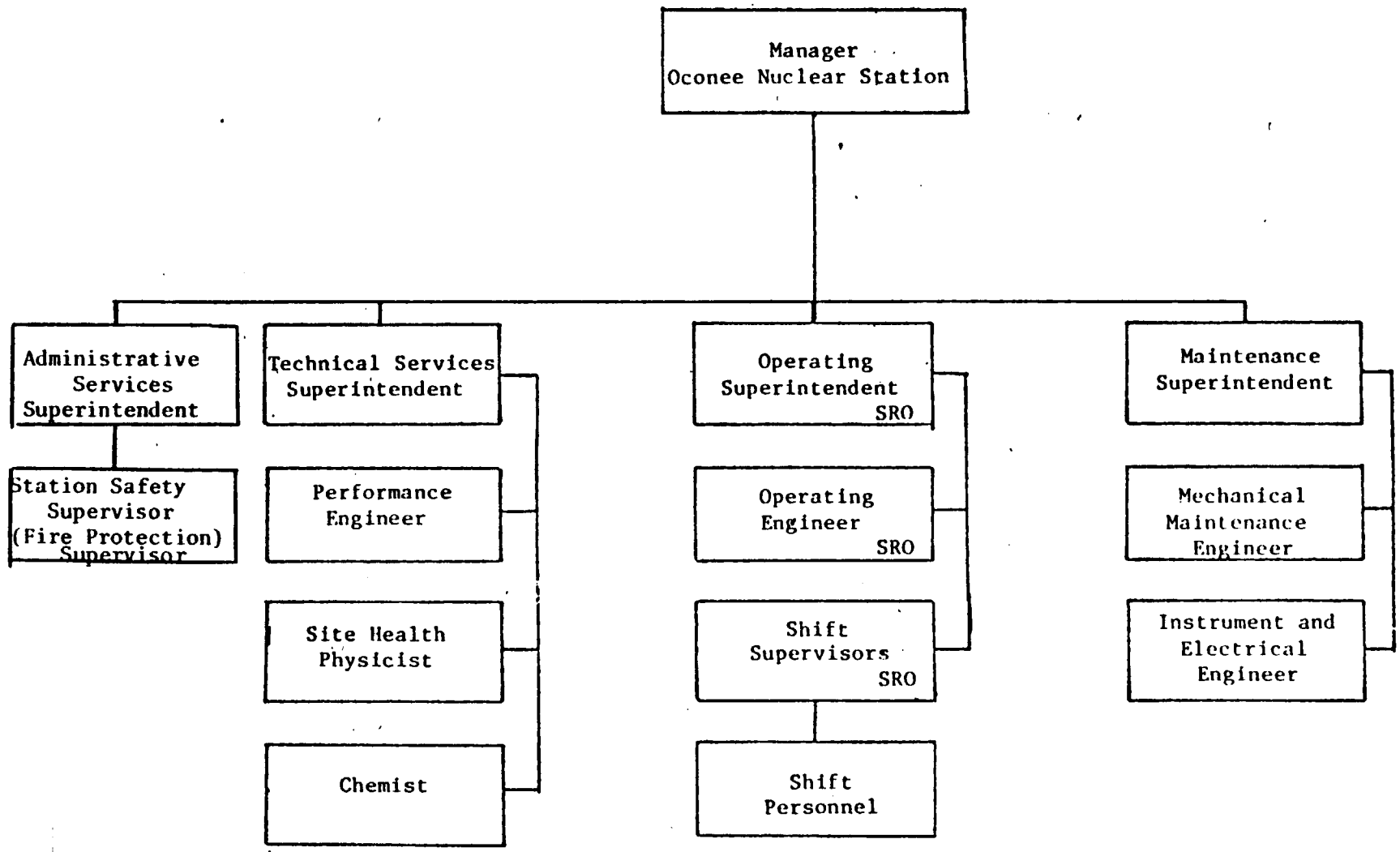
3. At least one licensed operator shall be in the reactor building when fuel handling operations in the reactor building are in progress.

4. An operator holding a Senior Reactor Operator license and assigned no other operational duties shall be in direct charge of refueling operations.

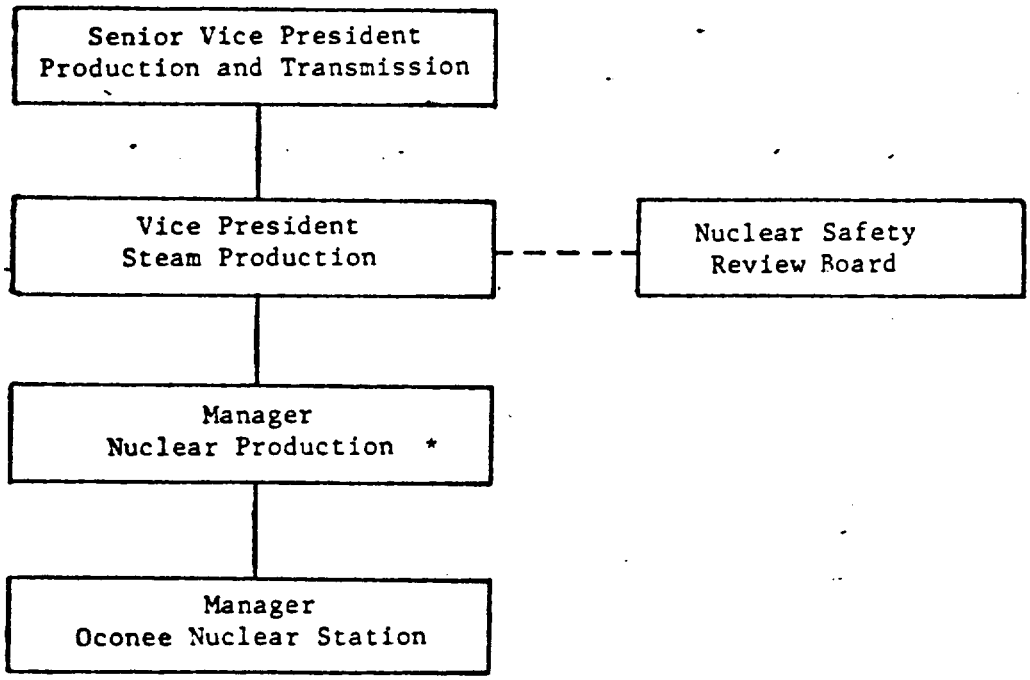
5. At least one person per shift shall have sufficient training to perform routine health physics requirements.

6. If the computer for a reactor is inoperable for more than eight hours, an operator in addition to those required above shall supplement the shift crew.

7. A fire brigade of 5 members shall be maintained on site at all times. This excludes 3 members of the minimum operating shift requirements that are required to be present in the control rooms.



OCONEE NUCLEAR STATION
STATION ORGANIZATION CHART
FIGURE 6.1-1



*Responsible for Fire Protection Program

OCONEE NUCLEAR STATION

MANAGEMENT ORGANIZATION CHART

Figure 6.1-2

Amendments 57, 57 & 54

6.4 STATION OPERATING PROCEDURES

Specification

6.4.1 The station shall be operated and maintained in accordance with approved procedures. Written procedures with appropriate check-off lists and instructions shall be provided for the following conditions:

a. Normal startup, operation and shutdown of the complete facility and of all systems and components involving nuclear safety of the facility.

b. Refueling operations.

c. Actions taken to correct specific and foreseen potential malfunctions of systems or components involving nuclear safety and radiation levels, including responses to alarms, suspected primary system leaks and abnormal reactivity changes.

d. Emergency procedures involving potential or actual release of radioactivity.

e. Preventive or corrective maintenance which could affect nuclear safety or radiation exposure to personnel.

f. Station survey following an earthquake.

g. Radiation control procedures.

h. Operation of radioactive waste management systems.

i. Control of pH in recirculated coolant after loss-of-coolant accident. Procedure shall state that pH will be measured and the addition of appropriate caustic to coolant will commence within 30 minutes after switchover to recirculation mode of core cooling to adjust the pH to a range of 7.0 to 8.0 within 24 hours.

j. Nuclear safety-related periodic test procedures.

k. Long-term emergency core cooling systems. Procedures shall include provision for remote or local operation of system components necessary to establish low pressure injection within 15 minutes after a line break.

l. Fire Protection Program implementation

6.4.2 Quarterly selected drills shall be conducted on site emergency procedures including assembly preparatory to evacuation off site and a check of the adequacy of communications with off-site support groups.

6.4.3 A respiratory protective program approved by the Commission shall be in force.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-269, 50-270 and 50-287

DUKE POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 57, 57 and 54 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55, respectively, issued to Duke Power Company which revised Technical Specifications for operation of the Oconee Nuclear Station Unit Nos. 1, 2 and 3, located in Oconee County, South Carolina. The amendments are effective within 20 days of the 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 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 the license amendments. Prior public notice of these amendments was not required since the 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, negative declaration, or 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 application for amendments dated March 1, 1977, as supplemented December 15, 1977, (2) Amendment Nos. 57, 57 and 54 to Licenses Nos. DPR-38, DPR-47 and DPR-55, respectively, and (3) the Commission's related Safety Evaluation dated November 25, 1977. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. 20555 and at the Oconee County Library, 201 South Spring, Walhalla, South Carolina 29691. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commision, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 13th day of February 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. TO LICENSE NO. DPR-38

AMENDMENT NO. TO LICENSE NO. DPR-47

AMENDMENT NO. TO LICENSE NO. DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS NO. 1, 2 AND 3

DOCKET NOS. 50-269, 50-270 AND 50-287

INTRODUCTION

Following a fire at the Browns Ferry Nuclear Station in March 1975, we initiated an evaluation of the need for improving the fire protection programs at all licensed nuclear power plants. As part of this continuing evaluation, in February 1976 we published a report entitled "Recommendations Related to Browns Ferry Fire", NUREG-0050. This report recommended that improvements in the areas of fire prevention and fire control be made in most existing facilities and that consideration be given to design features that would increase the ability of nuclear facilities to withstand fires without the loss of important functions. To implement the report's recommendations, the NRC initiated a program for reevaluation of the fire protection programs at all licensed nuclear power stations and for a comprehensive review of all new license applications.

We have issued new guidelines for fire protection programs in nuclear power plants. These guidelines reflect the recommendations in NUREG-0050. These guidelines are contained in the following documents:

"Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," NUREG-75/087, Section 9.5.1, "Fire Protection," May 1976, which includes "Guidelines for Fire Protection for Nuclear Power Plants," (BTP APCSB 9.5-1), May 1, 1976.

"Guidelines for Fire Protection for Nuclear Power Plants"(Appendix A to BTP APCSB 9.5-1), August 23, 1976.

"Supplementary Guidance on Information Needed for Fire Protection Program Evaluation," September 30, 1976.

"Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance," June 14, 1977.

Duke Power Company (the licensee) has submitted a description of the fire protection program for the Oconee Nuclear Station by letter dated December 31, 1977. This program is under detailed review by the NRC. In the interim, until we complete our detailed review, we have concluded that it is appropriate to amend the facility license by incorporating into the Technical Specifications operability and surveillance requirements for the existing fire protection equipment and systems. In addition, the amendment would include administrative requirements for the implementation of the fire protection program.

By letter dated September 28, 1976, we requested the licensee to submit Technical Specifications for presently-installed fire protection equipment at this facility. The licensee responded by letter of December 31, 1976, stating that Technical Specifications would be submitted by March 1, 1977.

Subsequently, the licensee proposed Technical Specifications by letter dated March 1, 1977. Based on our review and consideration of that response and the responses of other licensees, we modified certain action statements and surveillance frequencies in order to provide more appropriate and consistent specifications which we forwarded to the licensee by letter of June 17, 1977. That letter also requested submittal of appropriately revised specifications.

The licensee responded by letter dated July 18, 1977. We have reviewed the licensee's response and have made modifications where necessary to assure conformance to the fullest extent practicable with our requirements as set forth in the sample Technical Specifications pending completion of our ongoing detailed review of fire protection at this facility.

DISCUSSION AND EVALUATION

The guidelines for technical specifications that we developed and sent to all licensees are based on assuring that the fire protection equipment currently installed for the protection of safety related areas of the plant is operable. This assurance is obtained by requiring periodic surveillance of the equipment and by requiring certain corrective actions to be taken if the limiting conditions for operation cannot be met. These guidelines also include administrative features for the overall fire protection program such as interim fire brigade requirements, training, procedures, management review and periodic independent fire protection and loss prevention program inspections.

The equipment and components currently existing at this facility included in the scope of these Technical Specification requirements are fire detectors, the fire suppression systems, the hose stations, and piping and cabling penetration fire barriers. Operability of the fire detection instrumentation provides warning capability for the prompt detection of fires, to reduce the potential for damage to safety related equipment by allowing rapid response of fire suppression equipment. In the event that the minimum coverage of fire detectors cannot be met, hourly fire patrols are required in the affected area until the inoperable instrumentation is restored to operability. The operability of the fire suppression system provides capability to confine and extinguish fires. In the event that portions of the fire suppression system are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is returned to service. In the event that the fire suppression water system becomes inoperable, a backup fire protection water system is required within 24 hours and a report to the NRC is required within 24 hours to provide for prompt evaluation of the acceptability of the corrective measures for adequate fire suppression capability. The functional integrity of the penetration fire barriers provides protection to confine or retard fires from spreading to adjacent portions of the facility. During periods of time when a fire barrier is not functional, a continuous fire watch is required to be maintained in the vicinity of the affected barrier to provide fire prevention methods and prompt detection and suppression in the event of a fire.

We have reviewed the licensee's proposed interim Technical Specifications against our requirements as implemented in the sample Technical Specifications. We have made some modifications to the specifications that were proposed by the licensee in order to make them conform to our requirements. One of the proposed specifications that we changed involves the minimum size of the on-site fire brigade. In our previous sample Technical Specifications we did not identify the number of members on a fire brigade that we would find acceptable. We have now concluded that minimum number for a typical commercial nuclear power plant to be five (5). The basis for this conclusion is presented in an attachment to this SER entitled "Staff Position Minimum Fire Brigade Shift Size."

In the report of the Special Review Group on the Browns Ferry Fire (NUREG-0050) dated February 1976, consideration of the safety of operation of all operating nuclear power plants pending the completion of our detailed fire protection evaluation was presented. The following quotations from the report summarize the basis for our conclusion that the operation of the plants, until we complete our review, does not present an undue risk to the health and safety of the public.

> "A probability assessment of public safety or risk in quantitative terms is given in the Reactor Safety Study (WASH-1400). As the result of the calculation based on the Browns Ferry fire, the study concludes that the potential for a significant release of radioactivity from such a fire is about 20% of that calculated from all other causes analyzed. This indicates that predicted potential accident risks from all causes were not greatly affected by consideration of the Browns Ferry fire. This is one of the reasons that urgent action in regard to reducing risks due to potential fires is not required. The study (WASH-1400) also points out that 'rather straightforward measures, such as may already exist at other nuclear plants, can significantly reduce the likelihood of a potential core melt accident that might result from a large fire.' The Review Group agrees.

"Fires occur rather frequently; however, fires involving equipment unavailability comparable to the Browns Ferry fire are quite infrequent (see Section 3.3 [of NUREG-0050]). The Review Group believes that steps already taken since March 1975 (see Section 3.3.2) have reduced this frequency significantly.

"Based on its review of the events transpiring before, during and after the Browns Ferry fire, the Review Group concludes that the probability of disruptive fires of the magnitude of the Browns Ferry event is small, and that there is no need to restrict operation of nuclear power plants for public safety. However, it is clear that much can and should be done to reduce even further the likelihood of disabling fires and to improve assurance of rapid extinguishment of fires that occur. Consideration should be given also to features that would increase further the ability of nuclear facilities to withstand large fires without loss of important functions should such fires occur."

Subsequent to the Browns Ferry fire and prior to the Special Review Group's investigation, the Office of Inspection and Enforcement took steps with regard to fire protection. Special bulletins were sent to all licensees of operating power reactors on March 24, 1975, and April 3, 1975, directing the imposition of certain controls over fire ignition sources, a review of procedures for controlling maintenance and modifications that might affect fire safety, a review of emergency procedures for alternate shutdown and cooling methods, and a review of flammability of materials used in floor and wall penetration seals. Special inspections covering the installation of fire stops in electrical cables and in penetration seals were completed at all operating power reactors in April and May 1975. Inspection findings which reflected non-compliance with NRC requirements resulted in requiring corrective action by licensees. Follow-up inspections have confirmed that licensees are taking the required corrective actions and that administrative control procedures are in place.

Since these inspection activities and the subsequent Special Review Group recommendations in the 1975 to 1976 time period, there has been no new information to alter the conclusions of the Special Review Group, and the ongoing fire protection program flowing from those conclusions is still adequate.

Therefore, we have found these specifications acceptable 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.

ENVIRONMENTAL CONSIDERATION

We have determined that the planned amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR s51.5(d)(4) that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this planned amendment.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this planned amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: November 25, 1977

Staff Position

Minimum Fire Brigade Shift Size

INTRODUCTION

Nuclear power plants depend on the response of an onsite fire brigade for defense against the effects of fire on plant safe shutdown capabilities. In some areas, actions by the fire brigade are the only means of fire suppression. In other areas, that are protected by correctly designed automatic detection and suppression systems, manual fire fighting efforts are used to extinguish: (1) fires too small to actuate the automatic system; (2) well developed fires if the automatic system fails to function; and (3) fires that are not completely controlled by the automatic system. Thus, an adequate fire brigade is essential to fulfill the defense in depth requirements which protect safe shutdown systems from the effects of fires and their related combustion by-products.

DISCUSSION

There are a number of factors that should be considered in establishing the minimum fire brigade shift size. They include:

1) plant geometry and size;
2) quantity and quality of detection and suppression systems;
3) fire fighting strategies for postulated fires;
4) fire brigade training;
5) fire brigade equipment; and
6) fire brigade supplements by plant personnel and local fire department(s).

In all plants, the majority of postulated fires are in enclosed windowless structures. In such areas, the working environment of the brigade created by the heat and smoke buildup within the enclosure, will require the use of self-contained breathing apparatus, smoke ventilation equipment, and a personnel replacement capability.

Certain functions must be performed for all fires, i.e., command brigade actions, inform plant management, fire suppression, ventilation control, provide extra equipment, and account for possible injuries. Until a site specific review can be completed, an interim minimum fire brigade size of five persons has been established. This brigade size should provide a minimum working number of personnel to deal with those postulated fires in a typical presently operating commercial nuclear power station.

If the brigade is composed of a smaller number of personnel, the fire attack may be stopped whenever new equipment is needed or a person is injured or fatigued. We note that in the career fire service, the minimum engine company manning considered to be effective for an initial attack on a fire is also five, including one officer and four team members.

It is assumed for the purposes of this position that brigade training and equipment is adequate and that a backup capability of trained individuals exist whether through plant personnel call back or from the local fire department.

POSITION

1. The minimum fire brigade shift size should be justified by an analysis of the plant specific factors stated above for the plant, after modifications are complete.

2. In the interim, the minimum fire brigade shift size shall be five persons. These persons shall be fully qualified to perform their assigned responsibility, and shall include:

   One Supervisor - This individual must have fire tactics training. He will assume all command responsibilities for fighting the fire. During plant emergencies, the brigade supervisor should not have other responsibilities that would detract from his full attention being devoted to the fire. This supervisor should not be actively engaged in the fighting of the fire. His total function should be to survey the fire area, command the brigade, and keep the upper levels of plant management informed.

   Two Hose Men - A 1.5 inch fire hose being handled within a windowless enclosure would require two trained individuals. The two team members are required to physically handle the active hose line and to protect each other while in the adverse environment of the fire.

   Two Additional Team Members - One of these individuals would be required to supply filled air cylinders to the fire fighting members of the brigade and the second to establish smoke ventilation and aid in filling the air cylinder. These two individuals would also act as the first backup to the engaged team.