Docket No. 50-255

MARCH 1 1978

Consumers Power Company
ATTN: Mr. Dave Bixel
Nuclear Licensing Administrator
212 West Michigan Avenue
Jackson, Michigan 49201

Gentlemen:

The Commission has issued the enclosed Amendment No. 37 to Provisional Operating License No. DPR-20 for the Palisades Plant. This amendment implements Technical Specifications for fire protection as proposed by our letter dated November 25, 1977, with modifications which reflect comments supplied in your letter of December 15, 1977.

These changes to the Palisades Technical Specifications are supported by the Safety Evaluation issued with our letter of November 25, 1977, except for those modifications made in response to your letter of December 15, 1977 and other minor modifications. These modifications are discussed herein.

1. Section 3.22.1, Action 3 has been modified to require that the special report discussed should be submitted within 30 days to make it consistent with the intent of the Action step.

2. Section 3.21.2 has been renumbered as 3.22.2 for consistency.

3. Section 3.22.2, Action b.3 has been modified to allow 6 hours to achieve Hot Standy, rather than one (1) hour. Cold Shutdown would then be achieved within an additional 30 hours. This modification provides additional time to reduce power to achieve Hot Shutdown in an orderly manner.

4. Section 3.22.4.1, Action 1 has been modified to require that with a hose station inoperable, an additional hose is to be provided for the unprotected area at an OPERABLE hose station within one hour rather than requiring that an additional equivalent capacity hose be routed to the unprotected area. This change provides the desired backup capability while also ensuring that the integrity of the backup hose will be better maintained since, in the absence of an actual fire, it would remain coiled and not be subject to inadvertent damage.

OFFICE ➔						
SURNAME ➔						
DATE ➔						

5. Section 3.22.5 has been modified to require that a penetration fire barrier that is determined to be not intact shall be inspected at least once per hour, rather than requiring a continuous fire watch, provided there is an operable fire detector in the area of that penetration fire barrier. This reflects a change in our position on this requirement. We continue to require a continuous fire watch for areas with inoperable penetration fire barriers and no operable fire detectors.

6. In order to achieve expeditious implementation of the fire protection Technical Specifications, Section 4.17.2.1.b is being issued at this time to require fire protection system valve position verification to be completed for all valves except those that are locked, sealed or otherwise secured in position, rather than all fire protection system valves. However, we are presently evaluating your justification for this revised surveillance requirement and when our evaluation is complete if we do not agree with your position, we will request that you change this requirement.

7. Section 4.17.2.2 has been modified to reflect the fact that there are two 24-volt battery banks rather than one.

8. Sections 4.17.2.2.b.1 and 4.17.2.2.d.2 have been deleted since the fire pump diesel engines cannot be run without simultaneous operation of their associated fire pumps. Specification 4.17.2.1 which requires that the fire pumps be tested will also test the diesel engines.

9. Section 4.17.2.2.b.1 has been modified to more clearly identify the tank from which the diesel fuel oil sample is to be taken.

10. Figure 6.2-2 has been modified to clearly restrict the superintendent's fire protection responsibilities to the Palisades Plant only.

11. Section 6.8.1.e has been deleted since Section 6.8.1.a refers to Regulatory Guide 1.33 which adequately addresses the establishment of fire protection system procedures.

12. In order to achieve expeditious implementaton of the fire protection Technical Specifications, Specification 6.2.2.f is being issued at this time with the minimum number of on-site fire brigade members specified as three (3) as you proposed. This number is less than the minimum number of five (5) given in the generic staff position, Minimum Fire Brigade Shift Size, which was an attachment to the Safety Evaluation Report issued with our letter to you dated November 25, 1977. You have also proposed to use either the SAS or CAS operator as a fire brigade member. We are presently evaluating your justification for this smaller brigade size and the use of either the SAS or CAS operator and when our evaluation is complete the minimum number will be increased if we do not agree with your position.

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SURNAME➔						
DATE➔						

We have concluded that the modifications discussed above are acceptable and that the findings of our November 25, 1977 Safety Evaluation Report remain unchanged.

A copy of the Notice of Issuance is also enclosed.

Sincerely,

Original Signed By

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:
1. Amendment No.37 to DPR-20
2. Notice of Issuance

cc w/enclosures:
See next page

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x27433:tsb

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DATE	2/24/78	2/27/78	2/27/78	3/1/78	2/28/78	3/1/78

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

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 37
License No. DPR-20

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

   A. The application for amendment by Consumers Power Company (the licensee) dated March 31, 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-20 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 37, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 90 days after the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 1, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 37

PROVISIONAL OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Revise Appendix A as follows:

Remove pages ii, iii, 6-1, 6-2, 6-3, 6-9, 6-10, 6-33 and replace with identically numbered pages. Insert new pages 3-94 through 3-102, and 4-75 through 4-80.

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3.22 FIRE PROTECTION SYSTEM

3.22.1 FIRE DETECTION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.22.1.1 The fire detection instrumentation for each fire detection zone shown in Table 3.22.1 shall be OPERABLE.

APPLICABILITY: At all times when equipment in that fire detection zone is required to be OPERABLE.

ACTION:

With the number of instruments OPERABLE less than required by Table 3.22.1;

1. Within 1 hour, establish a fire watch patrol to inspect the zone with the inoperable instrument(s) at least once per hour;

2. Restore the inoperable instrument(s) to OPERABLE status within 14 days, or

3. In lieu of any other report required by Specification 6.9.2, prepare and submit a Special Report to the Commission within 30 days outlining the action taken, the cause of the inoperability and the plans for restoring the instrument(s) to OPERABLE status, and

4. In the event this Limiting Condition for Operation and/or associated Action requirements cannot be satisfied, provisions relating to operating restrictions on the plant are not applicable.

BASIS:

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 returned to service.

TABLE 3.22.1

FIRE DETECTION INSTRUMENTATION

MINIMUM INSTRUMENTS OPERABLE

Instrument Location	Number of Detectors	Type of Detectors	Detector Number
1. Cable Spreading Room Col M-28	1	WFS	WFS - 2B
2. Switchgear Room ID Col G-28 Col G-22 Col G-22	3	WFS	WFS - 2B1 WFS - 2B2 WFS - 2B3
3. Diesel Generator Room 1-1 Col M-28	1	WFS	WFS - 2G1
4. Diesel Generator Room 1-2 Col J-28	1	WFS	WFS - 2G2
5. Turbine Building 590' Col H-9	1	WFS	WFS - 2I

WFS - Flow switch mounted in wet pipe sprinkler system.

FIRE PROTECTION SYSTEM

3.22.2 FIRE SUPPRESSION WATER SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.22.2.1 The fire suppression water system required for fire sprinkler system and fire hose stations defined in Sections 3.22.3 and 3.22.4, respectively, shall be OPERABLE with;

a. Two pumps each with a capacity of at least 1500 gpm with their discharge aligned to the fire suppression header.

b. Automatic initiation logic for each fire pump.

APPLICABILITY: At all times

ACTION:

a. With only one fire pump operable restore the second fire pump to operable status within 7 days or, in lieu of any other report required by Specification 6.9.2, prepare and submit a Special Report 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.

b. With the fire suppression water supply system inoperable;

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

2. Submit a Special Report;

a) By telephone within 24 hours,

b) Confirmed by telegraph, mailgram or facsimile transmission no later than the first working day following the event, and

c) In writing within 14 days following the event, outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status, or

3. If 1. and 2.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.

3.22.2 FIRE PROTECTION SYSTEM

Basis

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, sprinklers, and fire hose stations. The collective capability of the fire suppression system 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 protection fo the nuclear plant.

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.

FIRE PROTECTION SYSTEM

3.22.3 FIRE SPRINKLER SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.22.3.1 The sprinkler systems located in the following areas shall be OPERABLE:

a. Cable Spreading Room

b. Switchgear Room 1D

c. Diesel Generator Room 1-1

d. Diesel Generator Room 1-2

e. Southwest Cable Penetration Room

f. Cable Way Room 328

APPLICABILITY: Whenever equipment in the sprinkler protected area is required to be operable.

ACTION:

1. With one or more of the above required sprinkler systems inoperable, establish a continuous fire watch with backup fire suppression equipment in the unprotected area(s) within 1 hour. Restore the system(s) to operable status within 14 days, or, in lieu of any other report required by Specification 6.9.2, prepare and submit a Special Report 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 system to operable status.

2. In the event this Limiting Condition for Operation and/or associated Action requirements cannot be satisfied, any provisions relating to the operating restrictions on the plant are not applicable.

Basis

Refer to Basis Section 3.22.2

FIRE PROTECTION SYSTEM

3.22.4 FIRE HOSE STATIONS

LIMITING CONDITIONS FOR OPERATION

3.22.4.1 The fire hose stations in the following locations shall be OPERABLE:

a. Corridor, Room 239

b. Viewing Gallery, Room 320

c. Corridor, Room 106

d. Corridor, Room 125

e. Fire Hose Station #3

f. Turbine Building 590' Col Y-5

g. Turbine Building 590' Col Y-18

h. Spent Fuel Pool, Room 220

i. Turbine Building 607' Col H-9

APPLICABILITY: Whenever equipement in the area protected by that hose station is required to be operable.

ACTION:

1. With the hose station inoperable, provide an additional hose for the unprotected area at an OPERABLE hose station within 1 hour.

2. In the event this Limiting Condition for Operation and/or associated Action requirement cannot be satisfied, provisions relating to operating restrictions on the plant are not applicable.

BASIS

Refer to Basis Section 3.22.2.

FIRE PROTECTION SYSTEM

3.22.5 PENETRATION FIRE BARRIERS

LIMITING CONDITIONS OF OPERATIONS

3.22.5.1 All penetration fire barriers protecting safety-related areas shall be functional.

APPLICABILITY: At all times

ACTION:

With one or more of the above required penetration fire barriers not intact a continuous fire watch shall be established on at least one side of the affected penetration within 1 hour. If an operable fire detector is located in the area, an hourly inspection of the penetration fire barrier may be performed rather than establishing a continuous fire watch.

BASIS

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.

4.17 FIRE PROTECTION SYSTEM

4.17.1 FIRE DETECTION INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

4.17.1.1 Each of the fire detection instruments and associated alarms identified in Table 3.22.1 shall be demonstrated OPERABLE at least once semiannually.

4.17.2 FIRE SUPPRESSION WATER SYSTEM

SURVEILLANCE REQUIREMENTS

4.17.2.1 The fire suppression water system shall be demonstrated OPERABLE:

a. At least once per month by starting each pump and operating it at least 15 minutes.

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

c. At least annually by performance of a system flush of the fire water hydrants.

d. At least annually by cycling each testable valve in the flow path through at least one complete cycle of full travel.

e. 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 1500 gpm at 125 psig,

2. Verifying that each pump starts (sequentially) to maintain the fire suppression water system pressure $\geq$ 90 psig.

f. At least once per 3 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.

FIRE PROTECTION SYSTEM

4.17.2 FIRE SUPPRESSION WATER SYSTEM

SURVEILLANCE REQUIREMENTS

4.17.2.2 The fire pump diesel engines (2) and starting 24 volt battery banks (2) 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 3 months by verifying that:

1) A sample of diesel fuel from the main storage tank (T-10) 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.

2) The specific gravity of the starting battery bank is oppropriate 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.

d. At least once per 18 months, during shutdown, by:

1) Subjecting the diesels to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service, and

FIRE PROTECTION SYSTEM

4.17.3 FIRE SPRINKLER SYSTEM

SURVEILLANCE REQUIREMENTS

4.17.3.1 The sprinkler systems defined in Section 3.22.3 shall be demonstrated OPERABLE at least once per 18 months by visual inspection of each accessible nozzle to verify no blockage.

FIRE PROTECTION SYSTEM

4.17.4 FIRE HOSE STATIONS

SURVEILLANCE REQUIREMENTS

4.17.4.1 Each fire hose station defined in Section 3.22.4.1 shall be verified to be OPERABLE:

a. At least once per month by visual inspection of the station to assure all equipment is available.

b. At least once per 18 months by removing the hose for inspection and reracking and replacing all gaskets in the couplings as required.

c. At least once per 3 years by:

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

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

FIRE PROTECTION SYSTEM

4.17.5 PENETRATION FIRE BARRIERS

SURVEILLANCE REQUIREMENTS

4.17.5.1 Each of the penetration fire barriers shall be verified to be functional by a visual inspection at least once per 18 months and prior to declaring a penetration fire barrier functional following repairs or maintenance.

BASIS

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

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

6.1.1 The Plant Superintendent shall be responsible for overall plant operation and shall delegate in writing the succession for this responsibility during his absence.

6.2 ORGANIZATION

6.2.1 OFF-SITE

The off-site organization for plant management and technical support shall be as shown on Figure 6.2-1.

6.2.2 PLANT STAFF

The plant organization shall be as shown on Figure 6.2-2 and:

a. Each on-duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1.

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

c. At least two licensed Operators shall be present in the control room during reactor start-up (through 5% power), scheduled reactor shutdown and during recovery from reactor trips.

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

e. All core alterations after the initial fuel loading shall either be performed by a licensed Reactor Operator under the general supervision of a Senior Reactor Operator or directly supervised by a licensed Senior Reactor Operator (or Senior Operator Limited to Fuel Handling) who has no other concurrent responsibilities during this operation.

f. A fire brigade of at least 3 members shall be maintained on site at all times. This excludes 3 members of the minimum shift crew necessary for safe shutdown or any personnel required for other essential functions during a fire emergency. Either the SAS or CAS operator may be used as a fire brigade member.

6.3 PLANT STAFF QUALIFICATIONS

6.3.1 Each member of the plant staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions.

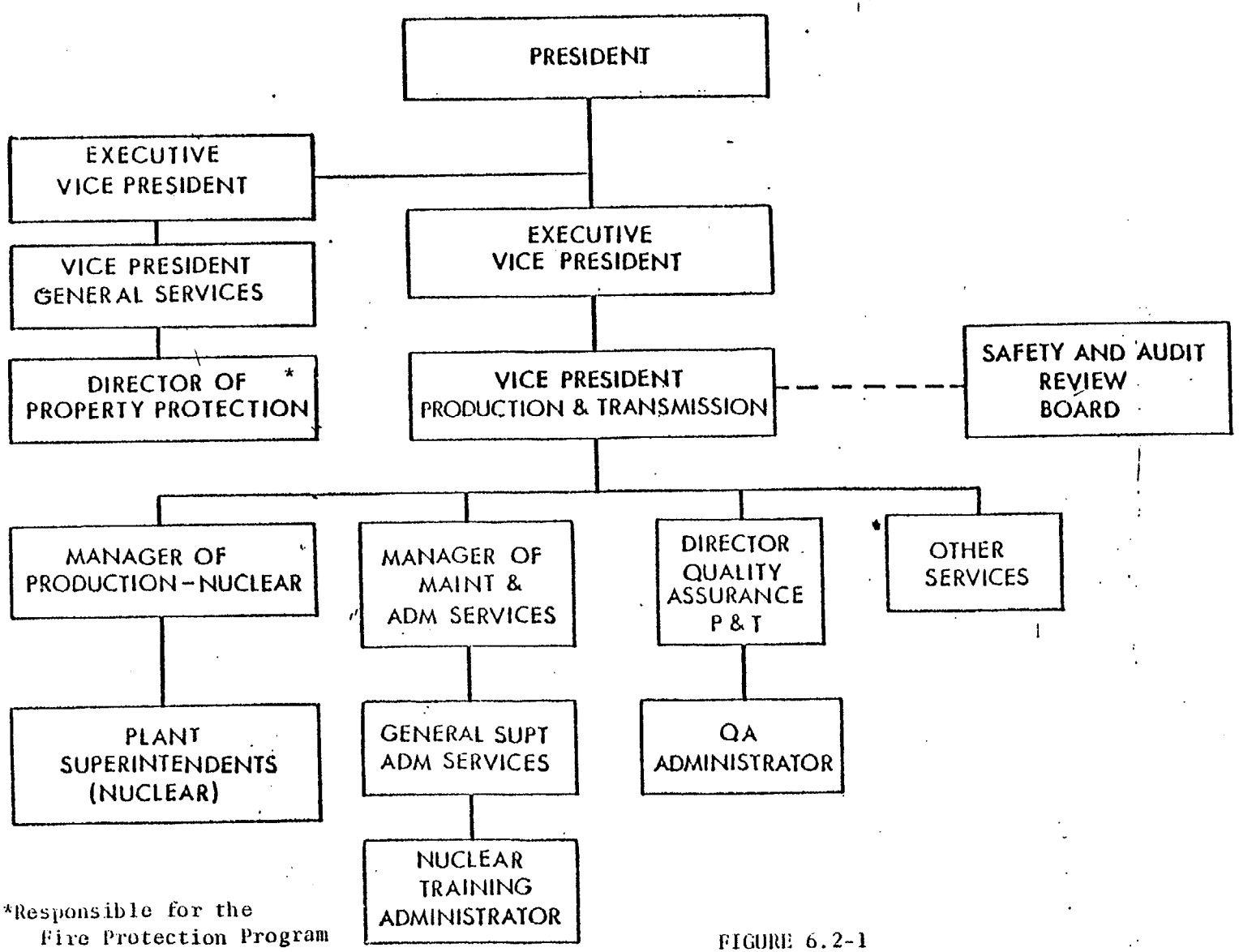
6.4 TRAINING

6.4.1 A retraining and replacement training program for the plant staff shall be maintained under the direction of the Nuclear Training Administrator 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 the fire brigade shall be maintained under the direction of the Plant Training Coordinator and shall, as practical, meet or exceed the requirements of Section 27 of the NFPA Code.

Consumers Power Company

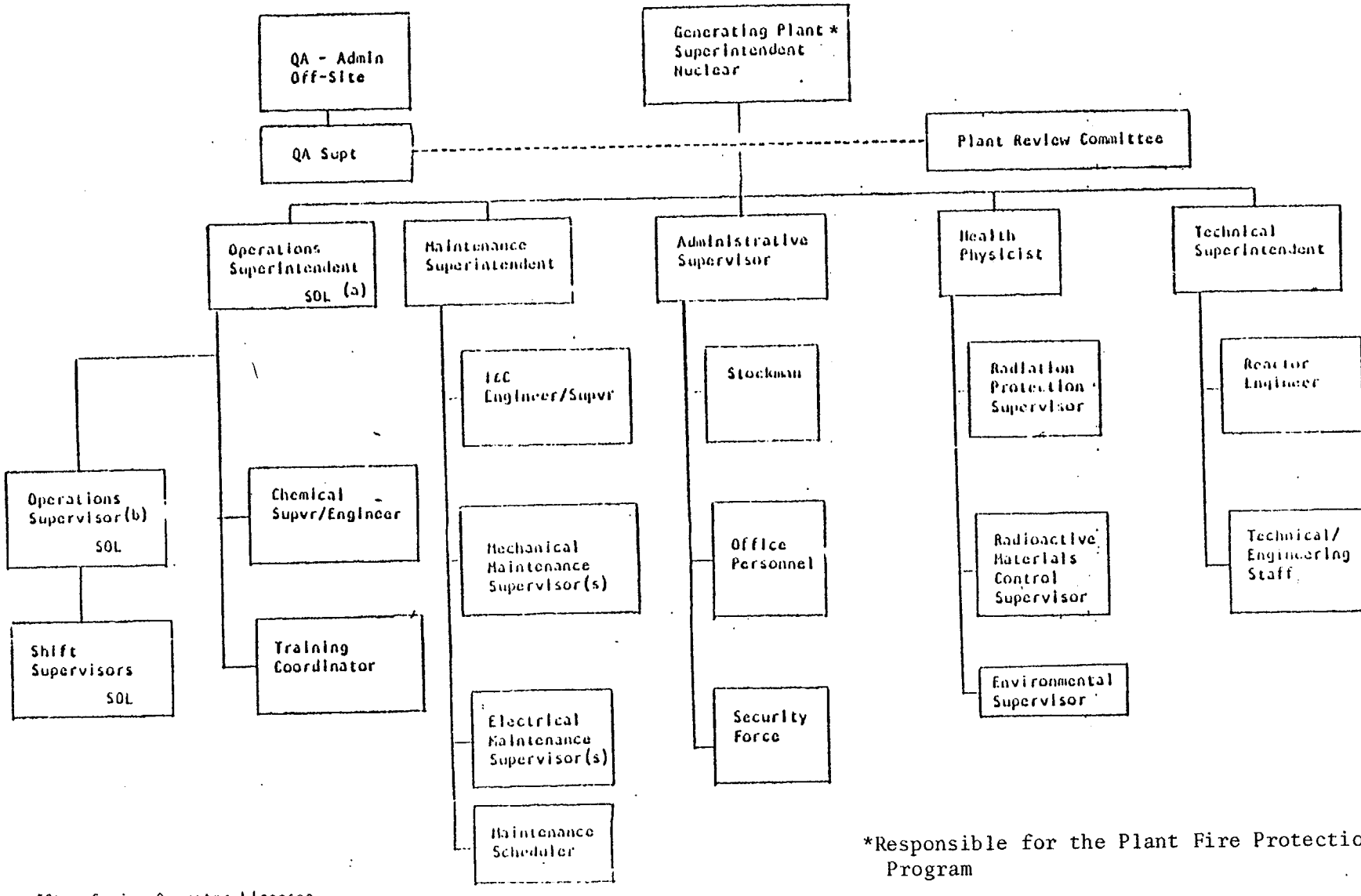
OFF-SITE ORGANIZATION



*Responsible for the Fire Protection Program

FIGURE 6.2-1

CONSUMERS POWER COMPANY
Palisades Plant Organization



*Responsible for the Plant Fire Protection Program

SOL - Senior Operator Licensee

(a) The Operations Superintendent need not hold an SOL provided he meets the other requirements of 6.3.1 of these specifications and the position of "Operations Supervisor" is filled. Under these conditions, the Operations Supervisor shall be responsible for directing the activities of licensed operators.

(b) This position need not be filled if the Operations Superintendent holds an SOL.

FIGURE 6.2-2

6.5.2.8 AUDITS

Audits of safety-related facility activities during operations are performed by the Quality Assurance Department - P&T in accordance with the policies and procedures of Consumers Power Company's Quality Assurance Program. Quality Assurance audit reports are sent to SARB for review. In addition, technical audits are the responsibility of the Operating Services Department and shall be reviewed by SARB. These technical audits 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, training and qualifications of the entire facility staff at least once per year.

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

d. Any other area of facility operation considered appropriate by SARB or the Vice President - P&T.

e. The Facility Fire Protection Program and implementing procedures at least once per two years.

6.5.2.9 AUTHORITY

SARB shall report to and advise the Vice President - P&T on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

6.5.2.10 RECORDS

Records of SARB activities shall be prepared and distributed as indicated below:

a. Minutes of each SARB meeting shall be prepared and forwarded to the Vice President - P&T and each SARB member within approximately two weeks following the meeting. Minutes shall be approved at or before the next regularly scheduled meeting following the distribution of the minutes.

b. If not included in SARB meeting minutes, reports of reviews encompassed by Section 6.5.2.7 shall be prepared and forwarded to the Vice President - P&T within approximately two weeks following completion of the review.

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

6.6 (Deleted)

6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a safety limit is violated (ref: Sections 2.1 and 2.2):

a. The reactor shall be shut down until the Commission authorizes resumption of operation (10 CFR 50.36(c)(1)(i)).

b. The safety limit violation shall be immediately reported to the Commission (in accordance with 10 CFR 50.36) to the Manager of Production - Nuclear and to SARB Chairman or Vice Chairman.

c. A report shall be prepared in accordance with 10 CFR 50.36. The safety limit violation and the report shall be reviewed by the PRC.

d. The report shall be submitted to the Commission (in accordance with requirements of 10 CFR 50.36), to SARB and to the Manager of Production - Nuclear within 10 days.

6.8 PROCEDURES

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

a. The applicable procedure recommended in Appendix "A" or Regulatory Guide 1.33 (November 1972).

b. Refueling Operations.

c. Surveillance and testing activities of safety-related equipment.

d. Emergency plan implementation.

6.8.2 Each procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the PRC and approved by the Plant Superintendent prior to implementation.

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 (or designated alternates) of the PRC, at least one of whom holds a Senior Reactor Operator's license.

c. The change is documented, reviewed by the PRC at the next regularly scheduled meeting and approved or disapproved by the Plant Superintendent.

6.8.4 Written procedures shall be established and maintained covering implementation of the security plan. These procedures and changes thereto shall be reviewed and approved in accordance with Consumers Power Company's Nuclear Power Plant Security Plan.

6.13 FIRE PROTECTION INSPECTION

6.13.1 An independent fire protection and loss prevention inspection shall be performed annually utilizing either qualified off-site licensee personnel or an outside protection firm.

6.13.2 An inspection by an outside qualified fire consultant shall be performed at intervals no greater than 3 years.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-255

CONSUMERS POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO PROVISIONAL OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 37 to Provisional Operating License No. DPR-20, issued to Consumers Power Company (the licensee), which revised Technical Specifications for operation of the Palisades Plant, (the facility) located in Covert Township, Van Buren County, Michigan. 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 March 31, 1977, as supplemented December 15, 1977, (2) Amendment No. 37 to License No. DPR-20, 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, NW Washington, DC 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 1st day of March 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

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

Transmitted with Proposed T/S 11/25/77

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. TO PROVISIONAL OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

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.

Consumers Power Company (the licensee) has submitted a description of the fire protection program for the Palisades Plant by letter dated March 31 and September 29, 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 29, 1976. By letter of December 1, 1976, we issued sample Technical Specifications and reiterated that these specifications were for existing systems only.

Subsequently, the licensee proposed Technical Specifications by letter dated March 31, 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 October 28, 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 §51.5(d)(4) that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this 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.