



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

CONSUMERS POWER COMPANY

DOCKET NO. 50-155

BIG ROCK POINT NUCLEAR PLANT

AMENDMENT TO OPERATING LICENSE

Amendment No. 17
License No. DPR-6

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Consumer Power Company (the licensee) dated October 28, 1977, as amended by letter dated 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.

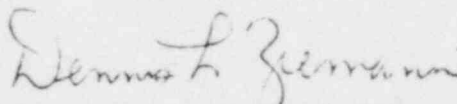
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C(2) of Facility License No. DPR-6 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 17, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 30 days after its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 6, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 17

FACILITY OPERATING LICENSE NO. DPR-6

DOCKET NO. 50-155

The following changes relate to the Appendix A portion of the Big Rock Technical Specifications. The changed areas on the revised pages are shown by a marginal line.

Remove Pages

iv
10-1
10-2 (Figure 6.2-1)
10-3 (Figure 6.2-2)
10-5
10-10
10-20
-
-
-
-
-
-
-
-

Insert Pages

iv
10-1
10-2 (Figure 6.2-1)
10-3 (Figure 6.2-2)
10-5
10-10
10-20
12-1 (new)
12-2 (new)
12-3 (new)
12-4 (new)
12-5 (new)
12-6 (new)
12-7 (new)
12-8 (new)

CONTENTS (Contd)

	<u>Page No.</u>
6.5.1 Plant Review Committee (PRC)	10-5
6.5.2 Safety and Audit Review Board (SARB)	10-7
6.6 Reportable Occurrence Action	10-11
6.7 Safety Limit Violation	10-11
6.8 Procedures	10-11
6.9 Reporting Requirements	10-12
6.10 Record Retention	10-20
6.11 Radiation Protection Program	10-22
11.0 (Section 3.1.4/4.1.4) Emergency Core Cooling System	11-1
(Section 3.1.5/4.1.5) Reactor Depressurization System	11-8
(Section 3.3.4/4.3.4) Containment Spray System	11-15
(Section 3.5.3/4.5.3) Emergency Power Sources	11-18
12.0 Fire Protection Program	
(Section 3.3.3.8/4.3.3.8) Fire Detection Instrumentation	12-1
(Section 3.7.11.1/4.7.11.1) Fire Suppression Water System	12-3
(Section 3.7.11.2/4.7.11.2) Fire Spray/Sprinkler Systems	12-5
(Section 3.7.11.5/4.7.11.5) Fire Hose Stations	12-6
(Section 3.7.12/4.7.12) Penetration Fire Barriers	12-7

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 to this responsibility during his absence.

6.2 ORGANIZATION

OFFSITE

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

PLANT STAFF

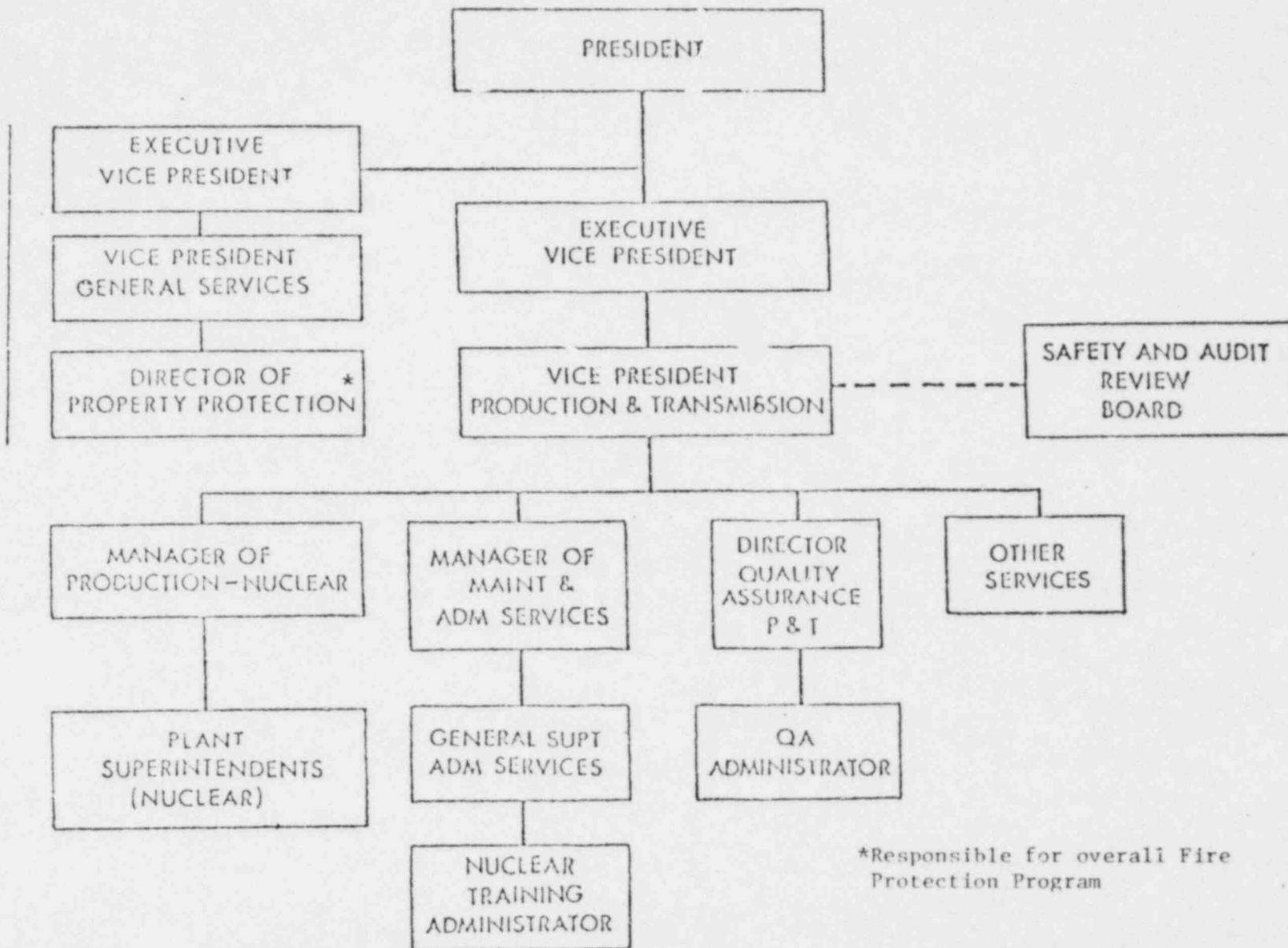
6.2.2 The plant organization shall be as shown on Figure 6.2-2 and:

- 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 startup (to a power level ≥ 5 percent), 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 Operator under the supervision of a licensed Senior Operator or a non-licensed Operator directly supervised by a licensed Senior Operator (or a licensed 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 2 members of the minimum shift crew necessary for safe shutdown of the plant and any personnel required for other essential functions during a fire emergency.

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.
- 6.3.2 Either the Health Physicist or the Chemistry and Radiation Protection Supervisor shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

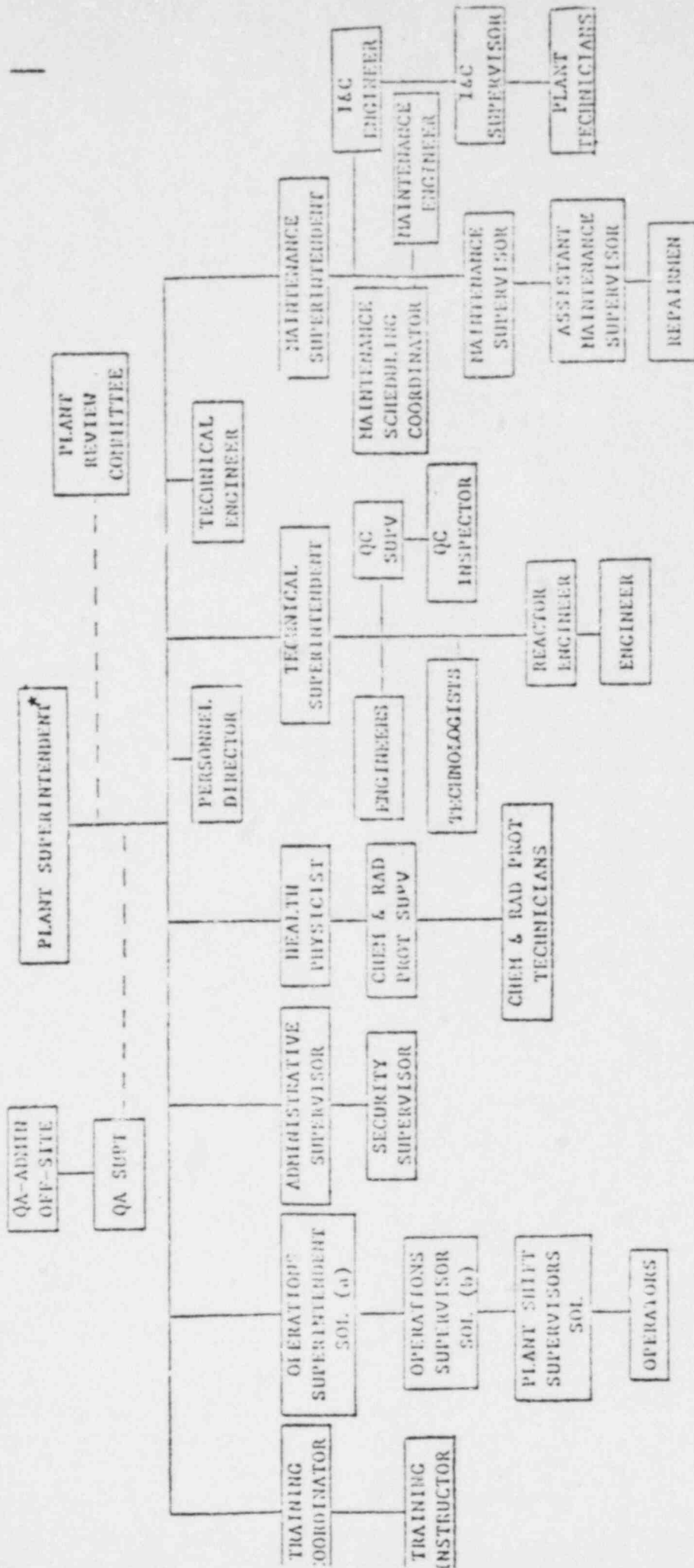
Consumers Energy Company
OFF-SITE ORGANIZATION



*Responsible for overall Fire Protection Program

FIGURE 6.2-1

Consolidated Power Company
BIG ROCK POINT
Organization



SOL - Senior Operator License

(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.

*Responsible for overall implementation of the plant Fire Protection Program.

Figure 6.2-2

6.4 TRAINING

- 6.4.1 A retraining and replacement training program for the plant staff shall be maintained under the direction of the Plant Superintendent 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 meet or exceed the requirements of Section 27 of the NFPA Code-1975 except for Fire Brigade training sessions which shall be held at least quarterly.

6.5 REVIEW AND AUDIT

6.5.1 PLANT REVIEW COMMITTEE (PRC)

- 6.5.1.1 The Plant Review Committee (PRC) shall function to advise the Plant Superintendent on all matters related to nuclear safety.

6.5.1.2 COMPOSITION

The PRC shall be composed of the:

Chairman: Plant Superintendent
Member: Operations Superintendent
Member: Technical Superintendent
Member: Maintenance Superintendent
Member: Instrument and Control Engineer
Member: Reactor Engineer
Member: Health Physicist
Member: Shift Supervisor
Member: Engineer or Technologist with at Least One-Year Plant Experience

6.5.1.3 ALTERNATES

Alternate members shall be appointed in writing by the PRC Chairman to serve on a temporary basis; however, no more than two alternates shall participate in PRC activities at any one time.

6.5.2 (Cont'd)

- h. The status of deficiencies identified by the Quality Assurance Program, including the effectiveness of the corrective actions completed and implemented, at least once every six (6) months.
- i. Audits of the Security Program required by the "Nuclear Power Plant Security Plan."

6.5.2.9 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 the Consumers Power Company 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 Site 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 2 years.
- f. An independent fire protection and loss prevention inspection and audit shall be performed annually utilizing either qualified off-site licensee personnel or an outside fire protection firm.
- g. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.

6.5.2.10 AUTHORITY

SARB shall report to and advise the Vice President - P&T on those areas of responsibility specified in 6.5.2.8 and 6.5.2.9.

6.5.2.11 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 fourteen (14) days following each meeting. Minutes shall be approved at or before the next regularly scheduled meeting following distribution of the minutes.
- b. If not included in SARB meeting minutes, reports of reviews encompassed by Section 6.5.2.8 above shall be prepared and forwarded to the Vice President - P&T within fourteen (14) days following completion of the review.

- (b) Total number of samples.
 - (c) Number of locations at which levels are found to be significantly above local backgrounds.
 - (d) Highest, lowest, and the annual average concentrations or levels of radiation for the sampling point with the highest average and description of the location of that point with respect to the site.
- (2) If levels of radioactive materials in environmental media indicate the likelihood of public intakes in excess of 1% of those that could result from continuous annual exposure to the concentration values listed in Appendix B, Table II, Part 20, estimates of the likely resultant exposure to individuals and to population groups and assumptions upon which estimates are based shall be provided.
- (3) If statistically significant variations of offsite environmental concentrations with time are observed, correlation of these results with effluent release shall be provided.

6.9.4 Special Reports

Special Reports shall be submitted to the Director of the appropriate Regional office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable technical specification section:

- a. In-service inspection reports.
- b. Fire system reports.

6.10 RECORD RETENTION

(Records not previously required to be retained shall be retained as required below commencing January 1, 1976.)

6.10.1 The following records shall be retained for at least five years;

- a. Records and logs of facility operation covering time interval at each power level.

INSTRUMENTATION

FIRE DETECTION

LIMITING CONDITION FOR OPERATION

3.3.3.8 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-8 shall be OPERABLE.

APPLICABILITY: At all times when the equipment in the area is required to be OPERABLE.

ACTION:

With the number of instruments OPERABLE less than required by Table 3.3-8;

- a. Within one (1) hour, establish a fire watch patrol to inspect the zone with the inoperable instrument(s) at least once per hour, and
- b. Restore the inoperable instrument(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 pursuant to Specification 6.9.4 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.3.3.8.1 Each of the above fire detection instruments shall be demonstrated OPERABLE:

- a. Once per six months by a CHANNEL FUNCTIONAL TEST, and
- b. Once per 31 days by verifying proper alignment of power sources to the circuits.

TABLE 3.3-8

FIRE DETECTION INSTRUMENTS

INSTRUMENT LOCATION	TOTAL INSTRUMENTS	MINIMUM INSTRUMENTS OPERABLE	
		<u>HEAT</u>	<u>SMOKE</u>
1. Electrical Equipment Room			
Zone 1 Elevation 614'	5	-	3
Zone 2 Elevation 603'	2	-	1
2. Exterior Cable Penetration Room			
Zone 1 Elevation 614'	5	-	3
3. Interior Cable Penetration Room			
Zone 1 Elevation 614'	6	-	4

PLANT SYSTEMS

FIRE SUPPRESSION

WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11.1 THE FIRE SUPPRESSION WATER SYSTEM SHALL BE OPERABLE WITH:

- a. Both the electric and diesel driven fire pumps each with a capacity of 1000 gpm, their discharge aligned to the fire suppression header and supplying sprinkler and hose systems described in 3.7.11.2 and 3.7.11.5.
- b. Level of the Intake Bay above the 570' elevation.
- c. Automatic starting of the pumps on decaying fire system pressure.

APPLICABILITY: At all times.

ACTIONS:

- a. With the Fire Suppression Water System inoperable, restore the inoperable equipment 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 pursuant to Specification 6.9.4 within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system.
- b. Comply with Specification 11.3.1.4D.
- c. If both fire pumps (electric and diesel) or the piping systems are inoperable:
 - 1. Initiate procedures to provide a Backup Fire Suppression Water System within 24 hours by notifying the Charlevoix Fire Department to standby, and
 - 2. Restore the inoperable fire pump or piping system 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 pursuant to Specification 6.9.4 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the pump or piping system to OPERABLE status.

4.7.11.1.1 The FIRE SUPPRESSION WATER SYSTEM shall be demonstrated OPERABLE:

- a. Once per 7 days verifying the Intake Bay water level is above 570' elevation.
- b. Once per 31 days by starting each pump and operating the electric driven pump for at least five minutes and the diesel pump for at least 30 minutes.
- c. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM-D975-74 with respect to viscosity, water content and sediment.
- d. Once per 18 months:
 1. By a system flush and by verifying that each valve in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
 2. By performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence.
 3. By verifying that each pump will develop a flow of at least 1000 gpm at a system head of 110 psi.
 4. Subjecting the diesel to an inspection in accordance with procedures prepared in connection with its manufacturer's recommendations for the class of service.
- e. Once per 3 years by performing flow tests to meet or exceed the requirements of Section II, Chapter 5 of the Fire Protection Handbook, 14th Edition published by National Fire Protection Association.

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

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each battery is above the plates, and
 2. The overall battery voltage is \geq 24 volts.
- b. At least once per 92 days by verifying that the specific gravity is appropriate for continued service of the battery.
- c. At least once per 18 months by verifying that:
 1. The batteries, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration, and
 2. The battery-to-battery and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

PLANT SYSTEMS

FIRE SPRAY AND/OR SPRINKLER SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.11.2 The spray and/or sprinkler systems located in the following areas shall be OPERABLE:

- a. Cable spreading area under the control room.
- b. Exterior cable penetration area.

APPLICABILITY: At all times when the equipment in the area is required.

ACTIONS:

- a. With one or more of the above required spray and/or sprinkler systems inoperable, establish a continuous fire watch with backup fire suppression equipment for the unprotected area(s) within 1 hour; restore the system 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 pursuant to Specification 6.9.4 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.

SURVEILLANCE REQUIREMENTS

4.7.11.2 The spray and/or sprinkler systems shall be demonstrated to be OPERABLE:

- a. Once per 18 months:
 1. By visual inspection of spray headers to verify their integrity.
 2. By visual inspection of each nozzle to verify no external blockage.
- b. Once per 3 years by an airflow test of the open head spray and/or open head sprinkler system and verifying each open head spray and/or sprinkler nozzle is unobstructed.

PLANT SYSTEMS

FIRE HOSE STATIONS

LIMITING CONDITIONS FOR OPERATION

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

1. Electrical equipment room.
2. Emergency condenser level.
3. Equipment lock laydown area.
4. Third floor corridor.
5. Screen house.

APPLICABILITY:

Whenever equipment in the areas protected by the fire hose stations is required to be OPERABLE:

ACTION:

With a hose station inoperable, provide an additional hose for the unprotected area at an OPERABLE hose station within one hour and designate the new hose and station as safety related.

SURVEILLANCE REQUIREMENTS

4.7.11.5 Each fire station shall be verified to be OPERABLE:

- a. Once per 31 days by visual inspection of the station to assure all equipment is available at the station.
- b. Once per 18 months by removing the hose for inspection and re-racking and replacing (as required) all gaskets in the couplings, that are degraded.
- c. At least once per 3 years b. :
 1. Partially opening each hose station valve to verify valve OPERABILITY and no flow blockage.
 2. Conducting a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station.

PLANT SYSTEMS

3/4.7.12 PENETRATION FIRE BARRIERS

LIMITING CONDITIONS FOR OPERATION

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

APPLICABILITY: At all times

ACTION:

- a. With one or more of the above required penetration fire barriers non-functional and with the area of the affected barrier(s) monitored by OPERABLE (pursuant to Specification 3.3.3.8) fire detection instrumentation, within 1 hour establish a fire watch patrol and inspect the affected area(s) at least once per hour.
- b. With one or more of the above required penetration fire barriers non-functional and with the area of the affected barrier(s) not monitored by OPERABLE (pursuant to Specification 3.3.3.8) fire detection instrumentation, establish a continuous fire watch on at least one side of the affected penetration within 1 hour.

SURVEILLANCE REQUIREMENTS

4.7.12 Each of the above required penetration fire barriers shall be verified to be functional by a visual inspection;

- a. At least once per 18 months, and
- b. Prior to declaring a penetration fire barrier functional following repairs or maintenance.

3/4.3.3.8 FIRE DETECTION INSTRUMENTATION

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.

3/4.7.11 FIRE SUPPRESSION SYSTEMS

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 protection of the nuclear plant.

3/4.7.12 PENETRATION FIRE BARRIERS

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, routine fire watch patrols in conjunction with OPERABLE fire detection instrumentation or a continuous fire watch are required to be maintained in the vicinity of the affected barrier until the barrier is restored to functional status.