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

BALTIMORE GAS & ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 26
License No. DPR-53

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

   A. The application for amendment by Baltimore Gas & Electric Company (the licensee) dated August 5, 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-53 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 26, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 30 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Don K. Davis, Acting Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 2, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 26

FACILITY OPERATING LICENSE NO. DPR-53

DOCKET NO. 50-317

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

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FIRE DETECTION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.7 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-11 shall be OPERABLE.

APPLICABILITY: Whenever equipment in that fire detection zone is required to be OPERABLE.

ACTION:

With one or more of the fire detection instrument(s) shown in Table 3.3-11 inoperable:

a. Within 1 hour establish a fire watch patrol to inspect the zone(s) 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 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 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.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7.1 Each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST.

4.3.3.7.2 The NFPA Code 72D Class B supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months.

4.3.3.7.3 The non-supervised circuits between the local panels in Specification 4.3.3.7.2 and the control room shall be demonstrated OPERABLE at least once per 31 days.

TABLE 3.3-11

FIRE DETECTION INSTRUMENTS

INSTRUMENT LOCATION	INSTRUMENT NUMBER(S)	MINIMUM INSTRUMENTS OPERABLE HEAT	MINIMUM INSTRUMENTS OPERABLE SMOKE
1. Control Room	0-AE-405A, B, C, D, E, F		6
2. Control Room Vent Duct A	0-AE-5347, 8, 9		3
3. Cable Tunnel 1	0-AE-27A, B, C, D		4
4. Cable Chase 1A	0-AE-28A		1
5. Cable Chase 1B	0-AE-17A		1
6. Cable Chase 1C	0-AE-29A		1
7. U-1 Swgr. Rm. 27'	0-AE-317A, B, C, D, E, F		6
8. U-1 Swgr. Rm. 45'	0-AE-430A, B, C, D, E, F, G, H		8
9. U-1 Elect. Equip. Rm.	0-AE-529A, B, C		3
10. Control Room Vent Duct B	0-AE-5349		1
11. U-1 Cable Spreading Rm.	0-AE-306A, B, C, D, E, F		6
12. U-1 East Elec. Pene. Rm.	0-AE-429A, B, C		3
13. U-1 West Elec. Pene. Rm.	0-AE-423A, B, C		3
14. 11 Diesel Generator	0-TS-23A, B	2	
15. 12 Diesel Generator	0-TS-24A, B	2	
16. U-1 Cable Spreading Rm. Halon Sys.	0-TS-1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111	11	
17. U-1 Swgr Rm. Vent Duct 27'	1-TS-5443	1	
18. U-1 Swgr. Rm. Vent Duct 45'	1-TS-5441	1	

3/4.7.10 WATERTIGHT DOORS

LIMITING CONDITION FOR OPERATION

3.7.10 The following watertight doors shall be closed except when the door is being used for normal entry and exit:

a. ECCS Pump Room Doors (4).

b. Service Water Pump Room to Heater Bay Doors (2).

c. Auxiliary Feed Pump Room to Heater Bay Doors (2).

d. Emergency Escape Hatch, Service Water Pump Room from Penetration Room.

e. Main Steam Piping Area from Piping Penetration Room Door.

f. Passage to Main Steam Piping Area Door.

g. Warehouse to Intake Structure Door, Elevation 12'.

h. Outside to Intake Structure Door.

i. Warehouse to Intake Structure Door Elevation 29'.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more of the above doors open, restore the door to its closed position within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.10 The above watertight doors shall be determined closed at least once per 12 hours.

3/4.7.11 FIRE SUPPRESSION SYSTEMS

FIRE SUPRESSION WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11.1 The fire suppression water system shall be OPERABLE with;

a. Two high pressure pumps, each with a capacity of 2500 gpm, with their discharge aligned to the fire suppression header,

b. Two water supplies, each with a minimum contained volume of 300,000 gallons, and

c. An OPERABLE flow path capable of taking suction from the Pretreated Water Storage Tanks Numbers 11 and 12 and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves and the first valve ahead of the water flow alarm device on each sprinkler, hose standpipe or spray system riser required to be OPERABLE per Specifications 3.7.11.2 and 3.7.11.4.

APPLICABILITY: At all times.

ACTION:

a. With one pump and/or one water supply inoperable, restore the inoperable equipment to OPERABLE status within 7 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

b. With the fire suppression water system otherwise inoperable:

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

2. Submit a Special Report in accordance with Specification 6.9.2;

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

LIMITING CONDITION FOR OPERATION (Continued)

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.

SURVEILLANCE REQUIREMENTS

4.7.11.1.1 The fire suppression water system shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying the contained water supply volume.

b. At least once per 31 days on a STAGGERED TEST BASIS by starting each pump and operating it for at least 15 minutes on recirculation flow.

c. At least once per 31 days 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.

d. At least once per 6 months by performance of a system flush of the filled portions of the system.

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

f. 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 automatic valve in the flow path actuates to its correct position,

2. Verifying that each pump develops at least 2500 gpm at a discharge pressure of 125 psig,

3. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and

SURVEILLANCE REQUIREMENTS (Continued)

4. Verifying that each high pressure pump starts (sequentially) to maintain the fire suppression water system pressure ≥ 80 psig.

g. 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.

4.7.11.1.2 The fire pump diesel engine shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying;

1. The diesel fuel oil day storage tank contains at least 174 gallons of fuel, and

2. The diesel starts from ambient conditions and operates for at least 20 minutes.

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

c. At least once per 18 months by:

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

2. Verifying the diesel starts from ambient conditions on the auto-start signal and operates for ≥ 20 minutes while loaded with the fire pump.

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

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

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

2. The overall battery voltage is ≥ 24 volts.

SURVEILLANCE REQUIREMENTS (Continued)

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 deterioriation, and

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

SPRAY AND/OR SPRINKLER SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.11.2 The following spray and/or sprinkler systems shall be OPERABLE:

a. Auxiliary building baling and drumming area automatic sprinklers.

b. Emergency diesel generator No. 11 preaction sprinklers.

c. Emergency diesel generator No. 12 preaction sprinklers.

APPLICABILITY: Whenever equipment in the spray/sprinkler protected areas is required to be OPERABLE.

ACTION:

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 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 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.

b. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.11.2 Each of the above required spray and/or sprinkler systems shall be demonstrated OPERABLE:

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

b. At least once per 18 months:

1. By performing a system functional test which includes simulated automatic actuation of the system, and:

SURVEILLANCE REQUIREMENTS (Continued)

a) Verifying that the automatic valves in the flow path actuate to their correct positions on a simulated test signal, and

b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.

2. By inspection of the spray headers to verify their integrity.

HALON SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11.3 The cable spreading room Halon system shall be OPERABLE with the storage tanks having at least 95% of full charge weight and 90% of full charge pressure.

APPLICABILITY: Whenever equipment in the Halon protected areas is required to be OPERABLE.

ACTION:

a. With the above required Halon system inoperable, establish a continuous fire watch with backup fire suppression equipment for the unprotected area within 1 hour; restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 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.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.11.3 The above required Halon system shall be demonstrated OPERABLE:

a. At least once per 6 months by verifying Halon storage tank liquid level and pressure.

b. At least once per 18 months by:

1. Verifying the system, including associated ventilation dampers, actuates manually and automatically, upon receipt of a simulated test signal, and

2. Performance of an air or nitrogen flow test through headers and nozzles to assure no blockage.

FIRE HOSE STATIONS

LIMITING CONDITIONS FOR OPERATION

3.7.11.4 The fire hose stations shown in Table 3.7-5 shall be OPERABLE.

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

ACTION:

a. With one or more of the fire hose stations shown in Table 3.7-5 inoperable, route an additional equivalent capacity fire hose to the unprotected area(s) from an OPERABLE hose station within 1 hour.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.11.4 Each of the fire hose stations shown in Table 3.7-5 shall be demonstrated OPERABLE:

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

b. At least once per 18 months by:

   1. Removing the hose for inspection and re-racking, and

   2. Replacement of all degraded gaskets in couplings.

c. At least once per 3 years by:

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

   2. Conducting a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station or replacement with a new hose.

TABLE 3.7-5

FIRE HOSE STATIONS

LOCATION	ELEVATION	NUMBER OF HOSE STATIONS
1. Containment	10'	2
	45'	2
	69'	2
2. Auxiliary Building	-15'	1
	-10'	1
	5'	6
	27'	4
	45'	5
	69'	4
3. Turbine Building (Outside Auxiliary Feed Pump Room)	12	1

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, establish a continuous fire watch on at least one side of the affected penetration within 1 hour.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

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.

3/4.3.3.6 POST-ACCIDENT INSTRUMENTATION

The OPERABILITY of the post-accident instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident", December 1975.

3/4.3.3.7 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.

environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the accident analyses.

3/4.7.8 HYDRAULIC SNUBBERS

The hydraulic snubbers are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. The only snubbers excluded from this inspection program are those installed on nonsafety related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety related system.

The inspection frequency applicable to snubbers containing seals fabricated from materials which have been demonstrated compatible with their operating environment is based upon maintaining a constant level of snubber protection. Therefore, the required inspection interval varies inversely with the observed snubber failures. The number of inoperable snubbers found during an inspection of these snubbers determines the time interval for the next required inspection of these snubbers. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

To provide further assurance of snubber reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at 18 month intervals. These tests will include stroking of the snubbers to verify proper piston movement, lock-up and bleed. Observed failures of these sample snubbers will require functional testing of additional units. To minimize personnel exposures, snubbers installed in high radiation zones or in especially difficult to remove locations may be exempted from these functional testing requirements provided the OPERABILITY of these snubbers was demonstrated during functional testing at either the completion of their fabrication or at a subsequent date.

3/4.7.9 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.

3/4.7.10 WATERTIGHT DOORS

This specification is provided to ensure the protection of safety related equipment from the effects of water or steam escaping from ruptured pipes or components in adjoining rooms.

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, Halon 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, 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 Chief Engineer shall be responsible for overall facility 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 facility management and technical support shall be as shown on Figure 6.2-1.

FACILITY STAFF

6.2.2 The Facility organization shall be as shown on Figure 6.2-2 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, 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 be directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.

f. A site Fire Brigade of at least 5 members shall be maintained onsite at all times. The Fire Brigade shall not include the minimum shift crew necessary for safe shutdown of both units (4 members) or any personnel required for other essential functions during a fire emergency.

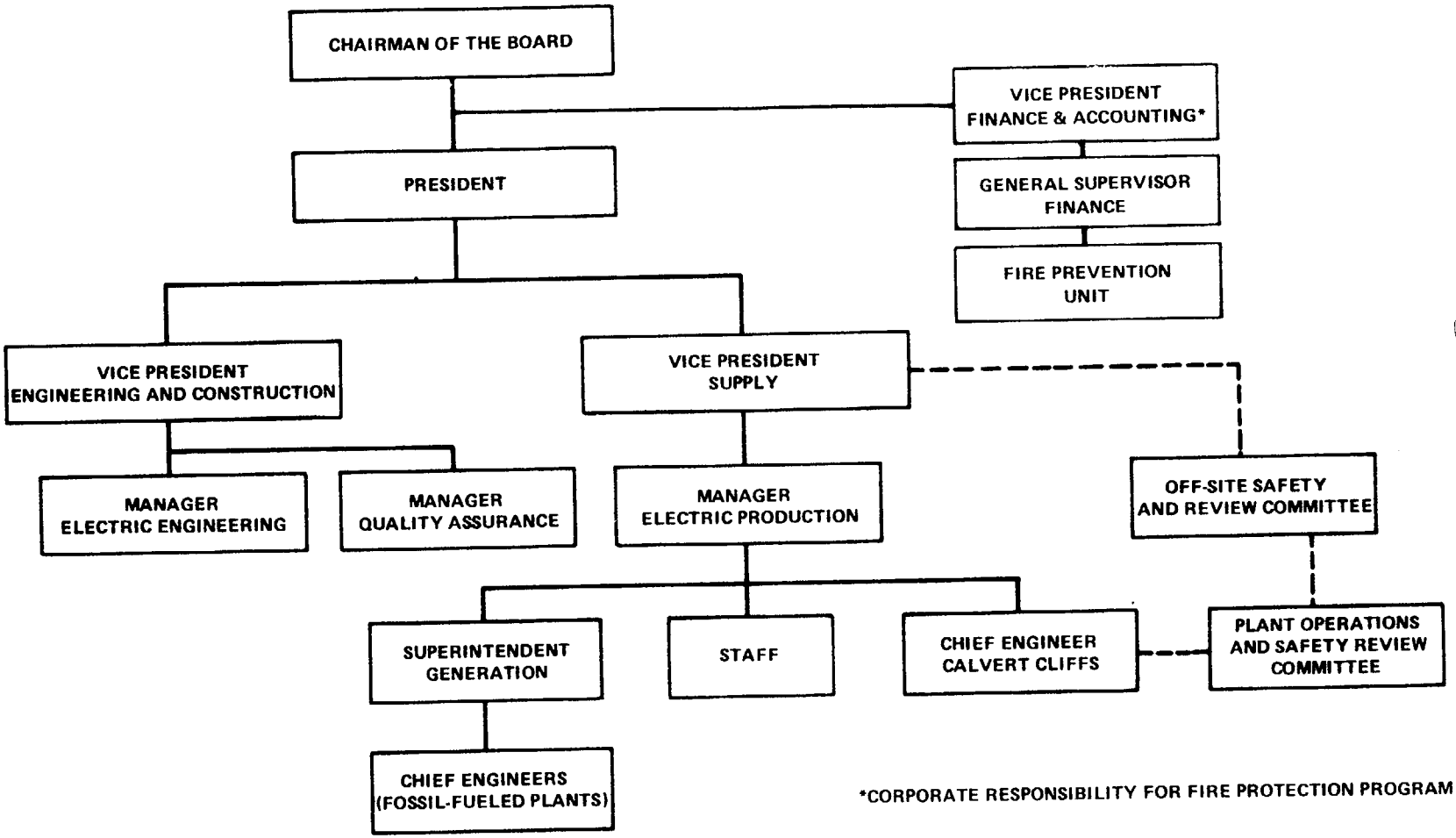
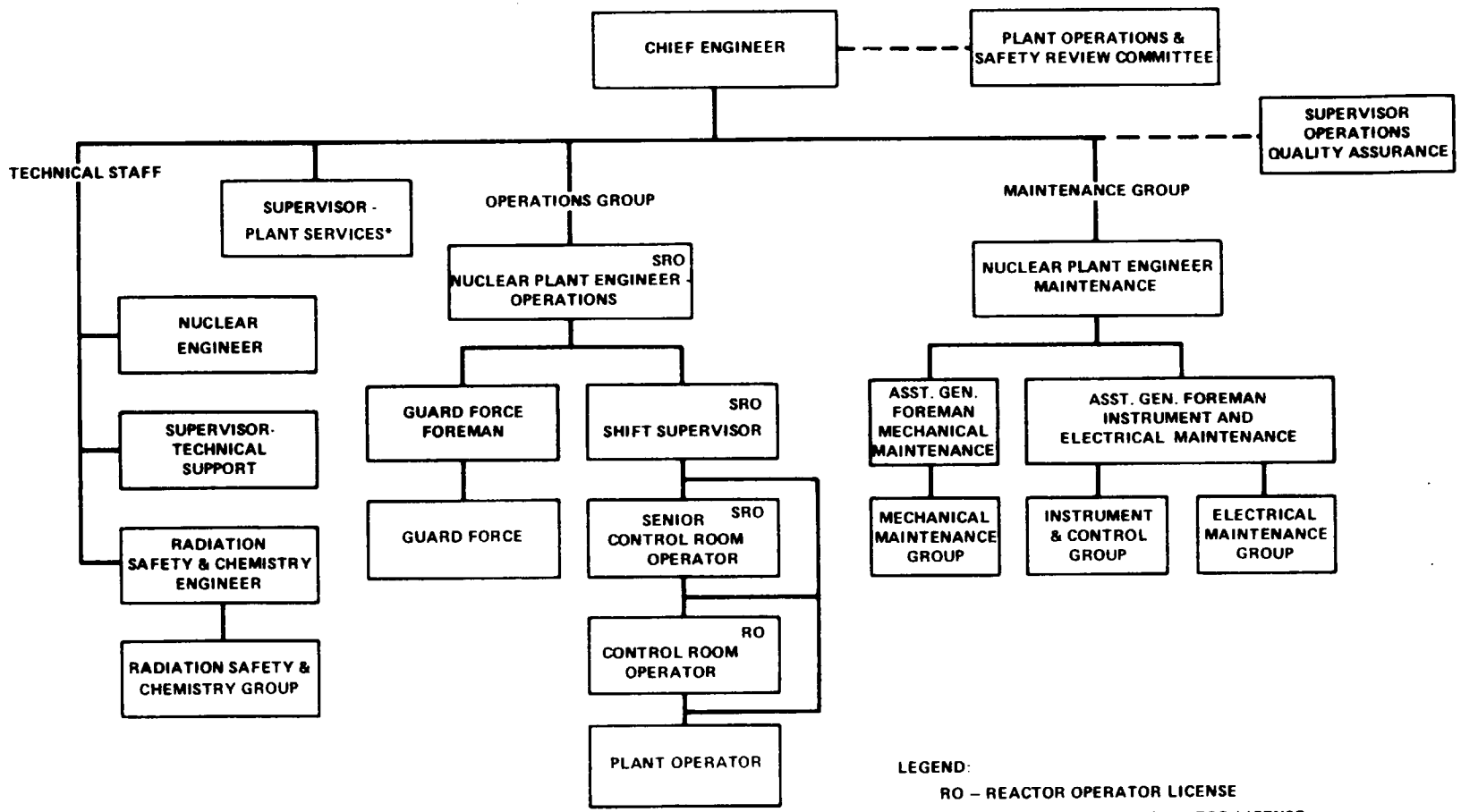


FIGURE 6.2-1

Management Organization Chart
Calvert Cliffs Nuclear Power Plant
Baltimore Gas & Electric Company



LEGEND:

RO – REACTOR OPERATOR LICENSE

SRO – SENIOR REACTOR OPERATOR LICENSE

*ONSITE RESPONSIBILITY FOR FIRE PROTECTION PROGRAM

FIGURE 6.2-2

Organization Chart (Two Unit Operation)
Calvert Cliffs Nuclear Power Plant
Baltimore Gas & Electric Company

TABLE 6.2-1

MINIMUM SHIFT CREW COMPOSITION#

Condition of Unit 1 - No Fuel in Unit 2

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3 & 4	5 & 6
SOL	1	1*
OL	2	1
Non-Licensed	2	1

Condition of Unit 1 - Unit 2 in MODES 1, 2, 3 or 4

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3 & 4	5 & 6
SOL**	2	2*
OL**	3	2
Non-Licensed	3	3

Condition of Unit 1 - Unit 2 in Modes 5 or 6

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3 & 4	5 & 6
SOL**	2	1*
OL**	2	2
Non-Licensed	3	3

TABLE 6.2-1 (Continued)

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

**Assumes each individual is licensed on each unit.

#Shift crew composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements of Table 6.2.1.

6.3 FACILITY STAFF QUALIFICATIONS

6.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the Radiation Safety and Chemistry Engineer who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Chief Engineer 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 Chief Engineer and shall meet or exceed the requirements of Section 27 of the NFPA Code-1976.

6.5 REVIEW AND AUDIT

6.5.1 PLANT OPERATIONS AND SAFETY REVIEW COMMITTEE (POSRC)

FUNCTION

6.5.1.1 The POSRC shall function to advise the Chief Engineer on all matters related to nuclear safety.

COMPOSITION

6.5.1.2 The POSRC shall be composed of the:

Chairman:	Chief Engineer
Member:	Nuclear Plant Engineer - Operations
Member:	Nuclear Plant Engineer - Maintenance
Member:	Nuclear Engineer
Member:	Radiation Safety and Chemistry Engineer
Member:	Supervisor - Technical Support
Member:	Performance Engineer

ALTERNATES

6.5.1.3 All alternate members shall be appointed in writing by the POSRC Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in POSRC activities at any one time.

MEETING FREQUENCY

6.5.1.4 The POSRC shall meet at least once per calendar month and as convened by the POSRC Chairman or his designated alternate.

QUORUM

6.5.1.5 A quorum of the POSRC shall consist of the Chairman or his designated alternate and four members including alternates.

RESPONSIBILITIES

6.5.1.6 The POSRC shall be responsible for:

a. Review of 1) all procedures required by Specification 6.8 and changes thereto, 2) any other proposed procedures or changes thereto as determined by the Chief Engineer to affect nuclear safety.

b. Review of all proposed tests and experiments that affect nuclear safety.

c. Review of all proposed changes to Appendix "A" Technical Specifications.

d. Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety.

e. Investigation of all violations of the Technical Specifications including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence to the Manager - Electric Production Department and to the Chairman of the Off Site Safety Review Committee.

f. Review all written reports requiring 24 hour notification to the Commission.

g. Review of facility operations to detect potential safety hazards.

h. Performance of special reviews, investigations or analyses and reports thereon as requested by the Chairman of the Off Site Safety Review Committee.

i. Review of the Plant Security Plan and implementing procedures and shall submit recommended changes to the Chairman of the Off Site Safety Review Committee.

j. Review of the Emergency Plan and implementing procedures and shall submit recommended changes to the Chairman of the Off Site Safety Review Committee.

AUTHORITY

6.5.1.7 The Plant Operations and Safety Review Committee shall:

a. Recommend to the Chief Engineer written approval or disapproval of items considered under 6.5.1.6(a) through (d) above.

b. Render determinations in writing with regard to whether or not each item considered under 6.5.1.6(a) through (e) above constitutes an unreviewed safety question.

c. Provide written notification within 24 hours to the Manager - Electric Production Department and the Off Site Safety Review Committee of disagreement between the POSRC and the Chief Engineer; however, the Chief Engineer shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

RECORDS

6.5.1.8 The POSRC shall maintain written minutes of each meeting and copies shall be provided to the Manager - Electric Production Department and Chairman of the Off Site Safety Review Committee.

6.5.2 OFF SITE SAFETY REVIEW COMMITTEE (OSSRC)

FUNCTION

6.5.2.1 The Off Site Safety Review Committee shall function to provide independent review and audit of designated activities in the areas of:

a. nuclear power plant operations

b. nuclear engineering

c. chemistry and radiochemistry

d. metallurgy

e. instrumentation and control

f. radiological safety

g. mechanical and electrical engineering

h. quality assurance practices

AUDITS

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

a. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months.

b. The performance, training and qualifications of the entire facility staff at least once per 12 months.

c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety at least once per 6 months.

d. The performance of activities required by the Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per 24 months.

e. The Facility Emergency Plan and implementing procedures at least once per 24 months.

f. The Facility Security Plan and implementing procedures at least once per 24 months.

g. Any other area of facility operation considered appropriate by the OSSRC or the Vice President-Supply.

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

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

j. An inspection and audit of the fire protection and loss prevention program shall be performed by a qualified outside fire consultant at least once per 36 months.

AUTHORITY

6.5.2.9 The OSSRC shall report to and advise the Vice President-Supply on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

RECORDS

6.5.2.10 Records of OSSRC activities shall be prepared, approved and distributed as indicated below:

a. Minutes of each OSSRC meeting shall be prepared, approved and forwarded to the Vice President-Supply within 14 days following each meeting.

b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Vice President-Supply within 14 days following completion of the review.

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

6.6 REPORTABLE OCCURRENCE ACTION

6.6.1 The following actions shall be taken for REPORTABLE OCCURRENCES:

a. The Commission shall be notified and/or a report submitted pursuant to the requirements of Specification 6.9.

b. Each REPORTABLE OCCURRENCE requiring 24 hour notification to the Commission shall be reviewed by the POSRC and submitted to the OSSRC and the Manager - Electric Production Department.

6.7 SAFETY LIMIT VIOLATION

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

a. The facility shall be placed in at least HOT STANDBY within one hour.

b. The Safety Limit violation shall be reported to the Commission, the Manager - Electric Production Department and to the OSSRC within 24 hours.

c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the POSRC. This report shall describe (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence.

d. The Safety Limit Violation Report shall be submitted to the Commission, the OSSRC and the Manager - Electric Production Department within 14 days of the violation.

6.8 PROCEDURES

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

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

b. Refueling operations.

c. Surveillance and test activities of safety related equipment.

d. Security Plan implementation.

e. Emergency Plan implementation.

f. Fire Protection Program implementation.

6.8.2 Each procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the POSRC and approved by the Chief Engineer prior to implementation and reviewed periodically as set forth in administrative procedures.

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

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

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

c. The change is documented, reviewed by the POSRC and approved by the Chief Engineer within 14 days of implementation.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS AND REPORTABLE OCCURRENCES

6.9.1 Informantion to be reported to the Commission, in addition to the reports required by Title 10, Code of Federal Regulations, shall be in accordance with the Regulatory Position in Revision 4 of Regulatory Guide 1.16, "Reporting of Operating Information - Appendix "A" Technical Specifications."

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Director of the Office of Inspection and Enforcement Regional Office within the time period specified for each report. These reports shall be submitted covering the activites identified below pursuant to the requirements of the applicable reference specification:

a. ECCS Actuation, Specifications 3.5.2 and 3.5.3.

b. Inoperable Seismic Monitoring Instrumentation, Specification 3.3.3.3.

c. Inoperable Meteorological Monitoring Instrumentation, Specification 3.3.3.4.

d. Seismic event analysis, Specification 4.3.3.3.2.

e. Core Barrel Movement, Specification 3.4.11.

f. Fire Detection Instrumentation, Specification 3.3.3.7.

g. Fire Suppression Systems, Specifications 3.7.11.1, 3.7.11.2 and 3.7.11.3.

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

BALTIMORE GAS & ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 11
License No. DPR-69

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

   A. The application for amendment by Baltimore Gas & Electric Company (the licensee) dated August 5, 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-69 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 11, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 30 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Don K. Davis, Acting Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 2, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 11

FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NO. 50-318

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

Pages

IV
VII
VIII
XII
XIII
XV
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3/4 3-44 (added)
3/4 7-58 (added)
3/4 7-59 (added)
3/4 7-60 (added)
3/4 7-61 (added)
3/4 7-62 (added)
3/4 7-63 (added)
3/4 7-64 (added)
3/4 7-65 (added)
3/4 7-66 (added)
3/4 7-67 (added)
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FIRE DETECTION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.7 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-11 shall be OPERABLE.

APPLICABILITY: Whenever equipment in that fire detection zone is required to be OPERABLE.

ACTION:

With one or more of the fire detection instrument(s) shown in Table 3.3-11 inoperable:

a. Within 1 hour establish a fire watch patrol to inspect the zone(s) 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 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 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.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7.1 Each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST.

4.3.3.7.2 The NFPA Code 72D Class B supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months.

4.3.3.7.3 The non-supervised circuits between the local panels in Specification 4.3.3.7.2 and the control room shall be demonstrated OPERABLE at least once per 31 days.

TABLE 3.3-11

FIRE DETECTION INSTRUMENTS

INSTRUMENT LOCATION	INSTRUMENT NUMBER(S)	MINIMUM INSTRUMENTS OPERABLE HEAT	MINIMUM INSTRUMENTS OPERABLE SMOKE
1. U-2 Cable Spread. Rm.	0-AE-302A, B, C, D, E, F		6
2. U-2 East Elec. Pene. Rm.	0-AE-409A, B, C		3
3. U-2 West Elec. Pene. Rm.	0-AE-414A, B, C		3
4. U-2 Swgr. Rm. 27'	0-AE-311A, B, C, D, E, F		6
5. U-2 Swgr. Rm. 45'	0-AE-407A, B, C, D, E, F, G, H		8
6. U-2 Elec. Equip. Rm.	0-AE-532A, B, C		3
7. Cable Tunnel 2	0-AE-31A, B, C, D		4
8. Cable Chase 2A	0-AE-32A		1
9. Cable Chase 2B	0-AE-21A		1
10. Cable Chase 2C	0-AE-33A		1
11. Control Room	0-AE-405A, B, C, D, E, F		6
12. Control Room Vent, Duct A	0-AE-5347 8, 9		3
13. Control Room Vent, Duct B	0-AE-5349		1
14. U-2 Cable Spread. Rm. Halon System	0-TS-2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111	11	
15. 21 Diesel Generator	0-TS-25A, B	2	
16. 12 Diesel Generator	0-TS-24A, B	2	
17. U-2 Swgr. Rm. Vent Duct 27'	2-TS-5443	1	
18. U-2 Swgr. Rm. Vent Duct 45'	2-TS-5441	1	

3/4.7.10 WATERTIGHT DOORS

LIMITING CONDITION FOR OPERATION

3.7.10 The following watertight doors shall be closed except when the door is being used for normal entry and exit:

a. ECCS Pump Room Doors (4).

b. Service Water Pump Room to Heater Bay Doors (2).

c. Auxiliary Feed Pump Room to Heater Bay Doors (2).

d. Emergency Escape Hatch, Service Water Pump Room from Penetration Room.

e. Main Steam Piping Area from Piping Penetration Room Door.

f. Passage to Main Steam Piping Area Door.

g. Warehouse to Intake Structure Door, Elevation 12'.

h. Outside to Intake Structure Door.

i. Warehouse to Intake Structure Door Elevation 29'.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more of the above doors open, restore the door to its closed position within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.10 The above watertight doors shall be determined closed at least once per 12 hours.

3/4.7.11 FIRE SUPPRESSION SYSTEMS

FIRE SUPRESSION WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11.1 The fire suppression water system shall be OPERABLE with;

a. Two high pressure pumps, each with a capacity of 2500 gpm, with their discharge aligned to the fire suppression header,

b. Two water supplies, each with a minimum contained volume of 300,000 gallons, and

c. An OPERABLE flow path capable of taking suction from the Pre-treated Water Storage Tanks Numbers 11 and 12 and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves and the first valve ahead of the water flow alarm device on each sprinkler, hose standpipe or spray system riser required to be OPERABLE per Specifications 3.7.11.2 and 3.7.11.4.

APPLICABILITY: At all times.

ACTION:

a. With one pump and/or one water supply inoperable, restore the inoperable equipment to OPERABLE status within 7 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

b. With the fire suppression water system otherwise inoperable:

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

2. Submit a Special Report in accordance with Specification 6.9.2;

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

LIMITING CONDITION FOR OPERATION (Continued)

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.

SURVEILLANCE REQUIREMENTS

4.7.11.1.1 The fire suppression water system shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying the contained water supply volume.

b. At least once per 31 days on a STAGGERED TEST BASIS by starting each pump and operating it for at least 15 minutes on recirculation flow.

c. At least once per 31 days 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.

d. At least once per 6 months by performance of a system flush of the filled portions of the system.

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

f. 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 automatic valve in the flow path actuates to its correct position,

2. Verifying that each pump develops at least 2500 gpm at a discharge pressure of 125 psig,

3. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and

SURVEILLANCE REQUIREMENTS (Continued)

4. Verifying that each high pressure pump starts (sequentially) to maintain the fire suppression water system pressure ≥ 80 psig.

g. 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.

4.7.11.1.2 The fire pump diesel engine shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying;

1. The diesel fuel oil day storage tank contains at least 174 gallons of fuel, and

2. The diesel starts from ambient conditions and operates for at least 20 minutes.

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

c. At least once per 18 months by:

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

2. Verifying the diesel starts from ambient conditions on the auto-start signal and operates for ≥ 20 minutes while loaded with the fire pump.

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

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

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

2. The overall battery voltage is ≥ 24 volts.

SURVEILLANCE REQUIREMENTS (Continued)

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 deterioriation, and

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

SPRAY AND/OR SPRINKLER SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.11.2 The following spray and/or sprinkler systems shall be OPERABLE:

a. Auxiliary building baling and drumming area automatic sprinklers.

b. Emergency diesel generator No. 21 preaction sprinklers.

c. Emergency diesel generator No. 12 preaction sprinklers.

APPLICABILITY: Whenever equipment in the spray/sprinkler protected areas is required to be OPERABLE.

ACTION:

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 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 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.

b. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.11.2 Each of the above required spray and/or sprinkler systems shall be demonstrated OPERABLE:

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

b. At least once per 18 months:

1. By performing a system functional test which includes simulated automatic actuation of the system, and:

SURVEILLANCE REQUIREMENTS (Continued)

a) Verifying that the automatic valves in the flow path actuate to their correct positions on a simulated test signal, and

b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.

2. By inspection of the spray headers to verify their integrity.

HALON SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11.3 The cable spreading room Halon system shall be OPERABLE with the storage tanks having at least 95% of full charge weight and 90% of full charge pressure.

APPLICABILITY: Whenever equipment in the Halon protected areas is required to be OPERABLE.

ACTION:

a. With the above required Halon system inoperable, establish a continuous fire watch with backup fire suppression equipment for the unprotected area within 1 hour; restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 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.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.11.3 The above required Halon system shall be demonstrated OPERABLE:

a. At least once per 6 months by verifying Halon storage tank liquid level and pressure.

b. At least once per 18 months by:

1. Verifying the system, including associated ventilation dampers, actuates manually and automatically, upon receipt of a simulated test signal, and

2. Performance of an air or nitrogen flow test through headers and nozzles to assure no blockage.

FIRE HOSE STATIONS

LIMITING CONDITIONS FOR OPERATION

3.7.11.4 The fire hose stations shown in Table 3.7-5 shall be OPERABLE.

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

ACTION:

a. With one or more of the fire hose stations shown in Table 3.7-5 inoperable, route an additional equivalent capacity fire hose to the unprotected area(s) from an OPERABLE hose station within 1 hour.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.11.4 Each of the fire hose stations shown in Table 3.7-5 shall be demonstrated OPERABLE:

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

b. At least once per 18 months by:

   1. Removing the hose for inspection and re-racking, and

   2. Replacement of all degraded gaskets in couplings.

c. At least once per 3 years by:

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

   2. Conducting a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station or replacement with a new hose.

TABLE 3.7-5

FIRE HOSE STATIONS

LOCATION	ELEVATION	NUMBER OF HOSE STATIONS
1. Containment	10'	2
	45'	2
	69'	2
2. Auxiliary Building	-15'	1
	-10'	1
	5'	6
	27'	4
	45'	5
	69'	4
3. Turbine Building (Outside Auxiliary Feed Pump Room)	12	1

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, establish a continuous fire watch on at least one side of the affected penetration within 1 hour.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

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.

3/4.3.3.6 POST-ACCIDENT INSTRUMENTATION

The OPERABILITY of the post-accident instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident", December 1975.

3/4.3.3.7 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.

environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the accident analyses.

3/4.7.8 HYDRAULIC SNUBBERS

The hydraulic snubbers are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. The only snubbers excluded from this inspection program are those installed on nonsafety related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety related system.

The inspection frequency applicable to snubbers containing seals fabricated from materials which have been demonstrated compatible with their operating environment is based upon maintaining a constant level of snubber protection. Therefore, the required inspection interval varies inversely with the observed snubber failures. The number of inoperable snubbers found during an inspection of these snubbers determines the time interval for the next required inspection of these snubbers. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

To provide further assurance of snubber reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at 18 month intervals. These tests will include stroking of the snubbers to verify proper piston movement, lock-up and bleed. Observed failures of these sample snubbers will require functional testing of additional units. To minimize personnel exposures, snubbers installed in high radiation zones or in especially difficult to remove locations may be exempted from these functional testing requirements provided the OPERABILITY of these snubbers was demonstrated during functional testing at either the completion of their fabrication or at a subsequent date.

3/4.7.9 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.

3/4.7.10 WATERTIGHT DOORS

This specification is provided to ensure the protection of safety related equipment from the effects of water or steam escaping from ruptured pipes or components in adjoining rooms.

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, Halon 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, 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 Chief Engineer shall be responsible for overall facility 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 facility management and technical support shall be as shown on Figure 6.2-1.

FACILITY STAFF

6.2.2 The Facility organization shall be as shown on Figure 6.2-2 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, 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 be directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.

f. A site Fire Brigade of at least 5 members shall be maintained onsite at all times. The Fire Brigade shall not include the minimum shift crew necessary for safe shutdown of both units (4 members) or any personnel required for other essential functions during a fire emergency.

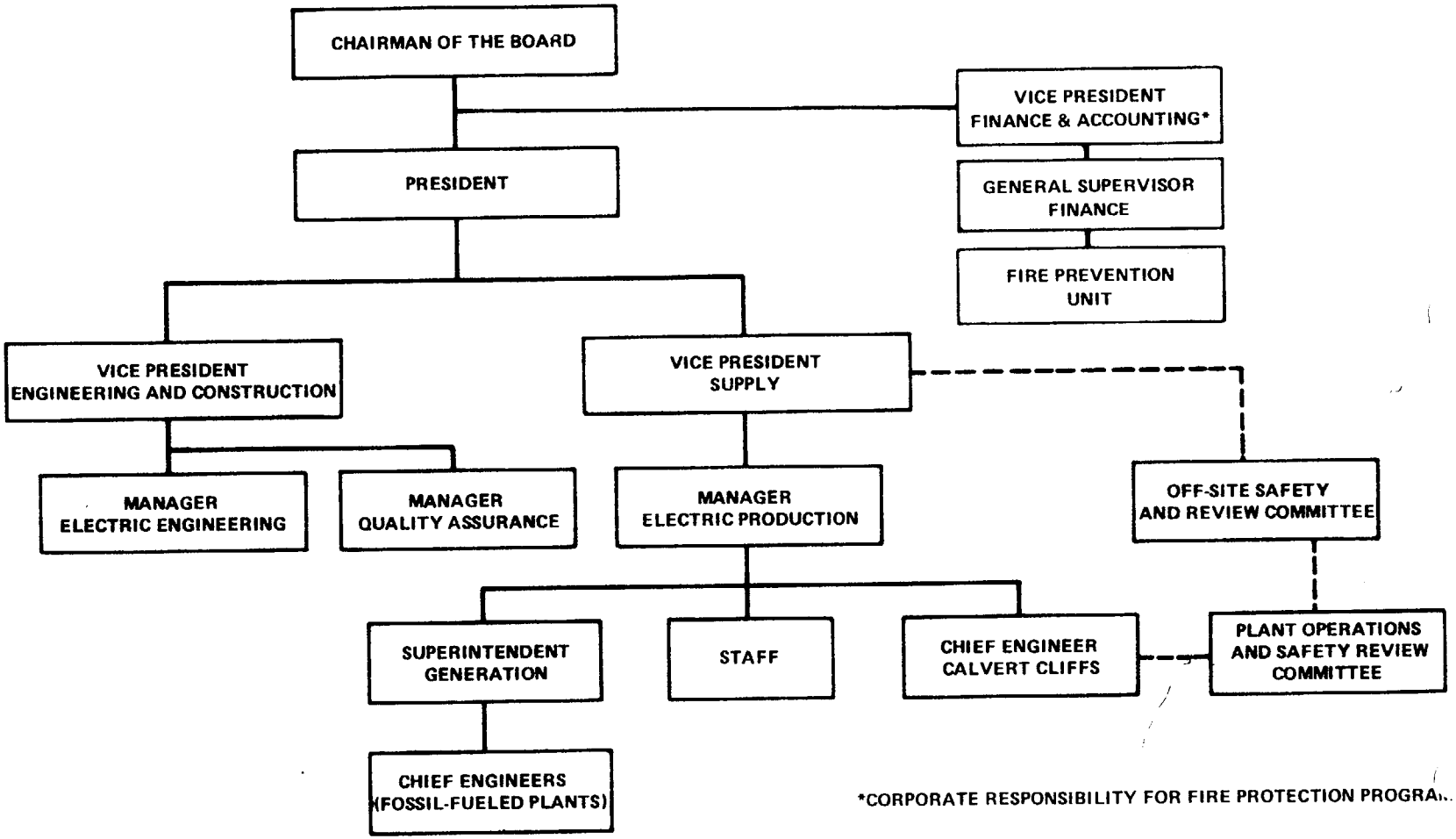
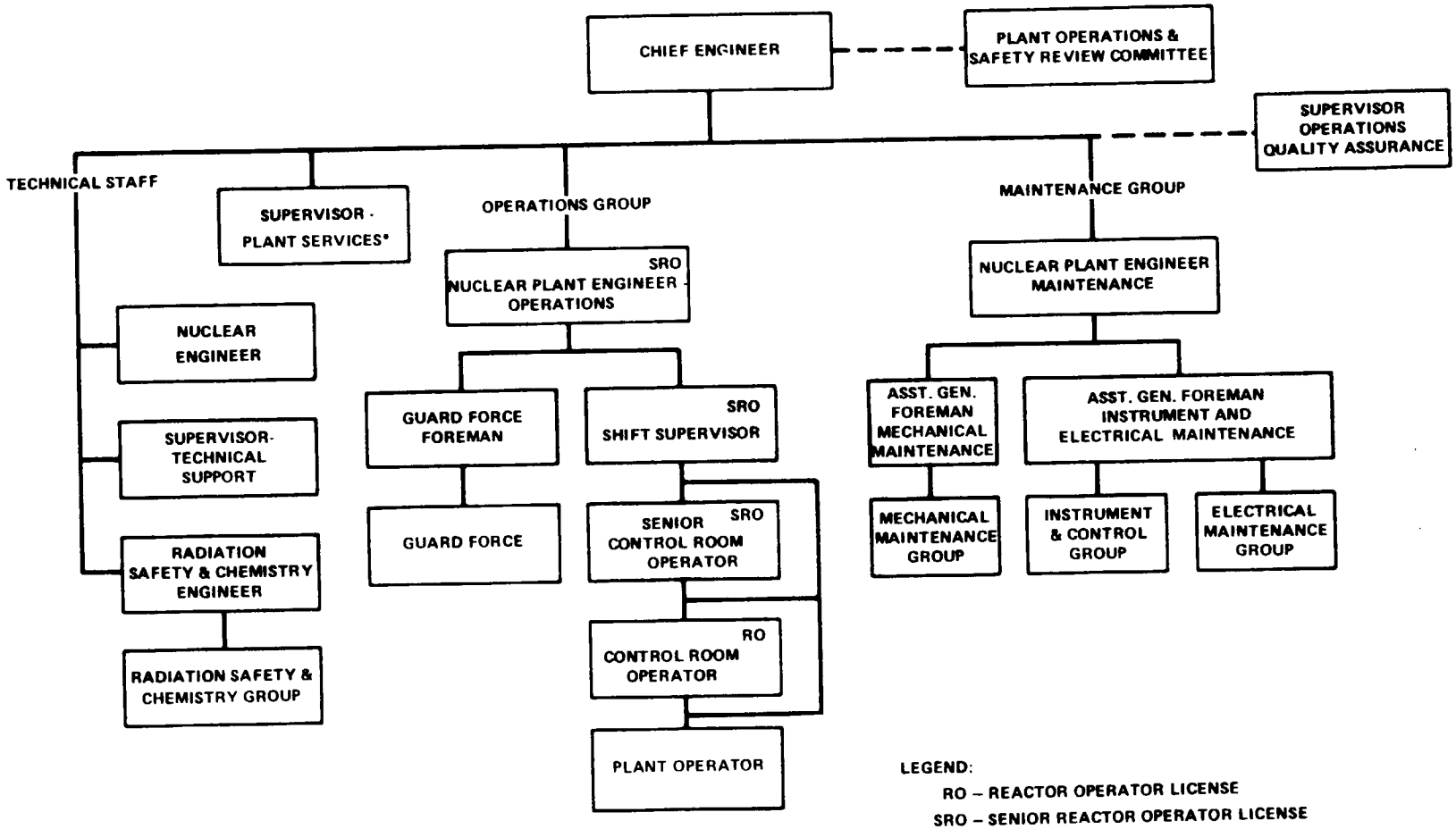


FIGURE 6.2-1

Management Organization Chart
Calvert Cliffs Nuclear Power Plant
Baltimore Gas & Electric Company



LEGEND:

RO – REACTOR OPERATOR LICENSE

SRO – SENIOR REACTOR OPERATOR LICENSE

*ONSITE RESPONSIBILITY FOR FIRE PROTECTION PROGRAM

FIGURE 6.2-2

Organization Chart (Two Unit Operation)
Calvert Cliffs Nuclear Power Plant
Baltimore Gas & Electric Company

TABLE 6.2-1

MINIMUM SHIFT CREW COMPOSITION#

Condition of Unit 2 - No Fuel in Unit 1

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3 & 4	5 & 6
SOL	1	1*
OL	2	1
Non-Licensed	2	1

Condition of Unit 2 - Unit 1 in MODES 1, 2, 3 or 4

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3 & 4	5 & 6
SOL**	2	2*
OL**	3	2
Non-Licensed	3	3

Condition of Unit 2 - Unit 1 in Modes 5 or 6

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3 & 4	5 & 6
SOL**	2	1*
OL**	2	2
Non-Licensed	3	3

TABLE 6.2-1 (Continued)

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

**Assumes each individual is licensed on each unit.

#Shift crew composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements of Table 6.2.1.

6.3 FACILITY STAFF QUALIFICATIONS

6.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the Radiation Safety and Chemistry Engineer who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Chief Engineer 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 Chief Engineer and shall meet or exceed the requirements of Section 27 of the NFPA Code-1976.

6.5 REVIEW AND AUDIT

6.5.1 PLANT OPERATIONS AND SAFETY REVIEW COMMITTEE (POSRC)

FUNCTION

6.5.1.1 The POSRC shall function to advise the Chief Engineer on all matters related to nuclear safety.

COMPOSITION

6.5.1.2 The POSRC shall be composed of the:

Chairman:	Chief Engineer
Member:	Nuclear Plant Engineer - Operations
Member:	Nuclear Plant Engineer - Maintenance
Member:	Nuclear Engineer
Member:	Radiation Safety and Chemistry Engineer
Member:	Supervisor - Technical Support
Member:	Performance Engineer

ALTERNATES

6.5.1.3 All alternate members shall be appointed in writing by the POSRC Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in POSRC activities at any one time.

MEETING FREQUENCY

6.5.1.4 The POSRC shall meet at least once per calendar month and as convened by the POSRC Chairman or his designated alternate.

QUORUM

6.5.1.5 A quorum of the POSRC shall consist of the Chairman or his designated alternate and four members including alternates.

RESPONSIBILITIES

6.5.1.6 The POSRC shall be responsible for:

a. Review of 1) all procedures required by Specification 6.8 and changes thereto, 2) any other proposed procedures or changes thereto as determined by the Chief Engineer to affect nuclear safety.

b. Review of all proposed tests and experiments that affect nuclear safety.

c. Review of all proposed changes to Appendix "A" Technical Specifications.

d. Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety.

e. Investigation of all violations of the Technical Specifications including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence to the Manager - Electric Production Department and to the Chairman of the Off Site Safety Review Committee.

f. Review all written reports requiring 24 hour notification to the Commission.

g. Review of facility operations to detect potential safety hazards.

h. Performance of special reviews, investigations or analyses and reports thereon as requested by the Chairman of the Off Site Safety Review Committee.

i. Review of the Plant Security Plan and implementing procedures and shall submit recommended changes to the Chairman of the Off Site Safety Review Committee.

j. Review of the Emergency Plan and implementing procedures and shall submit recommended changes to the Chairman of the Off Site Safety Review Committee.

AUTHORITY

6.5.1.7 The Plant Operations and Safety Review Committee shall:

a. Recommend to the Chief Engineer written approval or disapproval of items considered under 6.5.1.6(a) through (d) above.

b. Render determinations in writing with regard to whether or not each item considered under 6.5.1.6(a) through (e) above constitutes an unreviewed safety question.

c. Provide written notification within 24 hours to the Manager - Electric Production Department and the Off Site Safety Review Committee of disagreement between the POSRC and the Chief Engineer; however, the Chief Engineer shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

RECORDS

6.5.1.8 The POSRC shall maintain written minutes of each meeting and copies shall be provided to the Manager - Electric Production Department and Chairman of the Off Site Safety Review Committee.

6.5.2 OFF SITE SAFETY REVIEW COMMITTEE (OSSRC)

FUNCTION

6.5.2.1 The Off Site Safety Review Committee shall function to provide independent review and audit of designated activities in the areas of:

a. nuclear power plant operations

b. nuclear engineering

c. chemistry and radiochemistry

d. metallurgy

e. instrumentation and control

f. radiological safety

g. mechanical and electrical engineering

h. quality assurance practices

AUDITS

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

a. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months.

b. The performance, training and qualifications of the entire facility staff at least once per 12 months.

c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety at least once per 6 months.

d. The performance of activities required by the Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per 24 months.

e. The Facility Emergency Plan and implementing procedures at least once per 24 months.

f. The Facility Security Plan and implementing procedures at least once per 24 months.

g. Any other area of facility operation considered appropriate by the OSSRC or the Vice President-Supply.

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

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

j. An inspection and audit of the fire protection and loss prevention program shall be performed by a qualified outside fire consultant at least once per 36 months.

AUTHORITY

6.5.2.9 The OSSRC shall report to and advise the Vice President-Supply on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

RECORDS

6.5.2.10 Records of OSSRC activities shall be prepared, approved and distributed as indicated below:

a. Minutes of each OSSRC meeting shall be prepared, approved and forwarded to the Vice President-Supply within 14 days following each meeting.

b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Vice President-Supply within 14 days following completion of the review.

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

6.6 REPORTABLE OCCURRENCE ACTION

6.6.1 The following actions shall be taken for REPORTABLE OCCURRENCES:

a. The Commission shall be notified and/or a report submitted pursuant to the requirements of Specification 6.9.

b. Each REPORTABLE OCCURRENCE requiring 24 hour notification to the Commission shall be reviewed by the POSRC and submitted to the OSSRC and the Manager - Electric Production Department.

6.7 SAFETY LIMIT VIOLATION

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

a. The facility shall be placed in at least HOT STANDBY within one hour.

b. The Safety Limit violation shall be reported to the Commission, the Manager - Electric Production Department and to the OSSRC within 24 hours.

c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the POSRC. This report shall describe (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence.

d. The Safety Limit Violation Report shall be submitted to the Commission, the OSSRC and the Manager - Electric Production Department within 14 days of the violation.

6.8 PROCEDURES

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

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

b. Refueling operations.

c. Surveillance and test activities of safety related equipment.

d. Security Plan implementation.

e. Emergency Plan implementation.

f. Fire Protection Program implementation.

6.8.2 Each procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the POSRC and approved by the Chief Engineer prior to implementation and reviewed periodically as set forth in administrative procedures.

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

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

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

c. The change is documented, reviewed by the POSRC and approved by the Chief Engineer within 14 days of implementation.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS AND REPORTABLE OCCURRENCES

6.9.1 Informantion to be reported to the Commission, in addition to the reports required by Title 10, Code of Federal Regulations, shall be in accordance with the Regulatory Position in Revision 4 of Regulatory Guide 1.16, "Reporting of Operating Information - Appendix "A" Technical Specifications."

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Director of the Office of Inspection and Enforcement Regional Office within the time period specified for each report. These reports shall be submitted covering tne activites identified below pursuant to the requirements of the applicable reference specification:

a. ECCS Actuation, Specifications 3.5.2 and 3.5.3.

b. Inoperable Seismic Monitoring Instrumentation, Specification 3.3.3.3.

c. Inoperable Meteorological Monitoring Instrumentation, Specification 3.3.3.4.

d. Seismic event analysis, Specification 4.3.3.3.2.

e. Core Barrel Movement, Specification 3.4.11.

f. Fire Detection Instrumentation, Specification 3.3.3.7.

g. Fire Suppression Systems, Specifications 3.7.11.1, 3.7.11.2 and 3.7.11.3.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 26 TO LICENSE NO. DPR-53 AND

AMENDMENT NO. 11 TO LICENSE NO. DPR-69

BALTIMORE GAS AND ELECTRIC COMPANY

CALVERT CLIFFS NUCLEAR POWER PLANT UNITS NO. 1 AND NO. 2

DOCKET NOS. 50-317 AND 50-318

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.

Baltimore Gas & Electric Company submitted a description of the fire protection program for Calvert Cliffs Unit Nos. 1 and 2 by letter dated March 5, 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 10, 1976, we requested the licensee to submit Technical Specifications for presently-installed fire protection equipment at this facility. By letters of December 2 and 10, 1976, we issued sample Technical Specifications and reiterated that these specifications were for existing systems only.

Based on our review and consideration of 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 24, 1977. That letter also requested submittal of appropriately revised specifications.

The licensee responded by letter dated August 5, 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. We have discussed these modifications with the licensee, and he has agreed to all modifications. However, it will be necessary to provide a period of time to modify procedures to conform with the details of the modifications to the Technical Specifications and to provide time to complete the required personnel training where necessary, therefore the amendments would become effective 30 days after the date of issue.

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 these facilities and 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 facilities. 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 these amendments do 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 amendments involve 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 the planned amendments.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do 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 these planned amendments will not be inimical to the common defense and security or to the health and safety of the public.

Attachment: Staff Position - Minimum Fire Brigade Shift Size

Date: December 2, 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.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-317 AND 50-318

BALTIMORE GAS AND ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 26 and 11 to Facility Operating License Nos. DPR-53 and DPR-69 (respectively), issued to Baltimore Gas and Electric Company (the licensee), which revised the licenses and their appended Technical Specifications for operation of the Calvert Cliffs Nuclear Power Plant Unit Nos. 1 and 2 (the facilities) located in Calvert County, Maryland. The amendments will become effective 30 days after their date of issuance.

The amendments incorporate fire protection Technical Specifications on the existing fire protection equipment and add administrative controls related to fire protection at the facilities. This action is being taken pending completion of our overall fire protection review of the facilities.

The application for the 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 or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of the amendments.

For further details with respect to this action, see (1) the application for amendment dated August 5, 1977, (2) Amendment No. 26 to License No. DPR-53, and Amendment No. 11 to License No. DPR-69, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and at the Calvert County Library, Prince Frederick, Maryland 20678. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 2nd day of December, 1977.

FOR THE NUCLEAR REGULATORY COMMISSION

Don K. Davis, Acting Chief
Operating Reactors Branch #2
Division of Operating Reactors