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Dockets Nos. 50-317
and 50-318

Mr. A. E. Lundvall, Jr.
Vice President - Supply
Baltimore Gas & Electric Company
P. O. Box 1475
Baltimore, Maryland 21203

Dear Mr. Lundvall:

The Commission has issued the enclosed Amendments Nos. 38 and 21 to Facility Operating Licenses Nos. DPR-53 and DPR-69 for the Calvert Cliffs Nuclear Power Plant, Units Nos. 1 & 2 (CCNPP-1/2). The amendments consist of changes to the Appendix A and B Technical Specifications (TS) in response to your applications dated November 13, 1978 and January 31, 1979.

The amendments change the Appendix A TS of both CCNPP units to:

1. limit the maximum boron concentration in the safety injection and refueling water tanks;

2. allow reduced shutdown cooling flow when the reactor coolant system is partially drained;

3. modify the requirements for air flow distribution checks across the HEPA and charcoal filters;

4. correct the safety related hydraulic snubber list (Unit 1 only);

5. modify the operability and surveillance requirements for the refueling machine;

6. update the organizational control of the security force; and

7. revise the hydraulic snubber list to permit modifications of the support system for the auxiliary feedwater discharge piping (Unit 1 only).

UP 1

6D

Proposed change No. 7 of your November 13, 1978 application to allow two low pressure safety injection containment penetration valves to be open under special conditions will be evaluated at a later date. Proposed change No. 11 on steam generator feedwater flow stability will be evaluated following your response to our request for additional information dated February 9, 1979.

A copy of the related Safety Evaluation for these Appendix A TS changes is enclosed.

The amendments also make administrative type changes to the common Appendix B TS for both CCNPP units. These changes are in response to proposed Items 4 and 8 of your November 13, 1978 letter.

Proposed change No. 4 is to correct an inconsistency in reporting requirements between Appendix B TS Sections 2.3.A.7 and 5.6.2.c(1) by increasing the reporting level (TS 5.6.2.c(1)) for radioactive liquid effluents from 1.25 curies to 2.5 curies per unit in a quarter. The bases for TS 2.3.A indicate that the design objective for the release of radioactive liquid effluents from CCNPP is five curies per unit per year excluding tritium and noble gases. The purpose of reporting requirements, such as TS 2.3.A.7 and TS 5.6.2.c(1), is to alert the NRC that the plant is releasing quantities of liquid effluents which, extrapolated to a yearly rate, exceed the design objective. In general, such reporting requirements are set at an effluent level which, extrapolated to a yearly rate, would be twice the annual design objective. This is the basis for the reporting level of 2.5 curies per unit in a quarter spelled out in TS 2.3.A.7. The reporting requirement in TS 5.6.2.c(1) is intended and should be changed to be the same value as TS 2.3.A.7.

Proposed change No. 8 is to correct another reporting requirement inconsistency between Appendix B TS Sections 2.2.2 and 5.6.1.a. The former TS requires a Semi-Annual Environmental Operating Report and the latter TS an Annual Report. After a few years of plant operation, we find that the Environmental Operating Report submitted on an annual basis is adequate to detect any significant adverse environmental impact on a timely basis.

Both of these administrative changes make the Appendix B TS consistent with our requirements and are, therefore, acceptable.

We have evaluated the potential for environmental impact of plant operation in accordance with the enclosed changes to the Appendix B TS. These changes apply only to administrative details; therefore, we have determined that they 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 these changes 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, negative declaration or environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Since the changes to the Appendix B TS apply only to administrative details, they do not involve significant new safety information of a type not considered by a previous Commission safety review of the facility. They do not involve a significant increase in the probability or consequences of an accident, do not involve a significant decrease in a safety margin, and therefore do not involve a significant hazards consideration. We have also concluded that there is reasonable assurance that the health and safety of the public will not be endangered by this action.

Some portions of your proposed TS have been modified to meet our requirements. These modifications have been discussed with and agreed to by your staff.

A copy of the Notice of Issuance is also enclosed.

Sincerely,

Original signed by

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

Enclosures:

1. Amendment No. to DPR-53
2. Amendment No. to DPR-69
3. Safety Evaluation
4. Notice

cc w/enclosures: See next page

ORB#4:DOR
PKreutzer
4/20/79

STSG:DOR
DBrinkman
4/23/79

OFFICE	ORB#4:DOR	C-ORB#4:DOR	AD-E&P:DOR	C-RSB:DOR	C-EB:DOR	OELD
SURNAME	MConner/ED	RReid	BGrimes	PCheck	VNoonan	
DATE	4/20/79	4/20/79	4/24/79	4/23/79	4/23/79	4/24/79

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U. S. Environmental Protection Agency
Region III Office
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Philadelphia, Pennsylvania 19106

cc w/4 cys enclosures and 1 cy
of BG&E filings dtd: 11/13/78 &
1/31/79
Administrator, Power Plant Siting Program
Energy and Coastal Zone Administration
Department of Natural Resources
Tawes State Office Building
Annapolis, Maryland 21401

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

BALTIMORE GAS & ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 38
License No. DPR-53

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

   A. The applications for amendment by Baltimore Gas and Electric Company (the licensee) dated November 13, 1978 and January 31, 1979, comply 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 Operating 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. 38, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 24, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 38

FACILITY OPERATING LICENSE NO. DPR-53

DOCKET NO. 50-317

Replace the following pages of the 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.

APPENDIX A

Pages

3/4 1-16
3/4 5-1
3/4 5-7
3/4 6-15
3/4 6-16
3/4 6-30
3/4 6-31
3/4 7-23
3/4 7-24
3/4 7-31
3/4 7-36
3/4 7-42
3/4 7-50
3/4 7-57
3/4 7-58
3/4 9-6
3/4 9-8
3/4 9-15
6-2
6-3

APPENDIX B

Pages

2.2-3
5.6-3

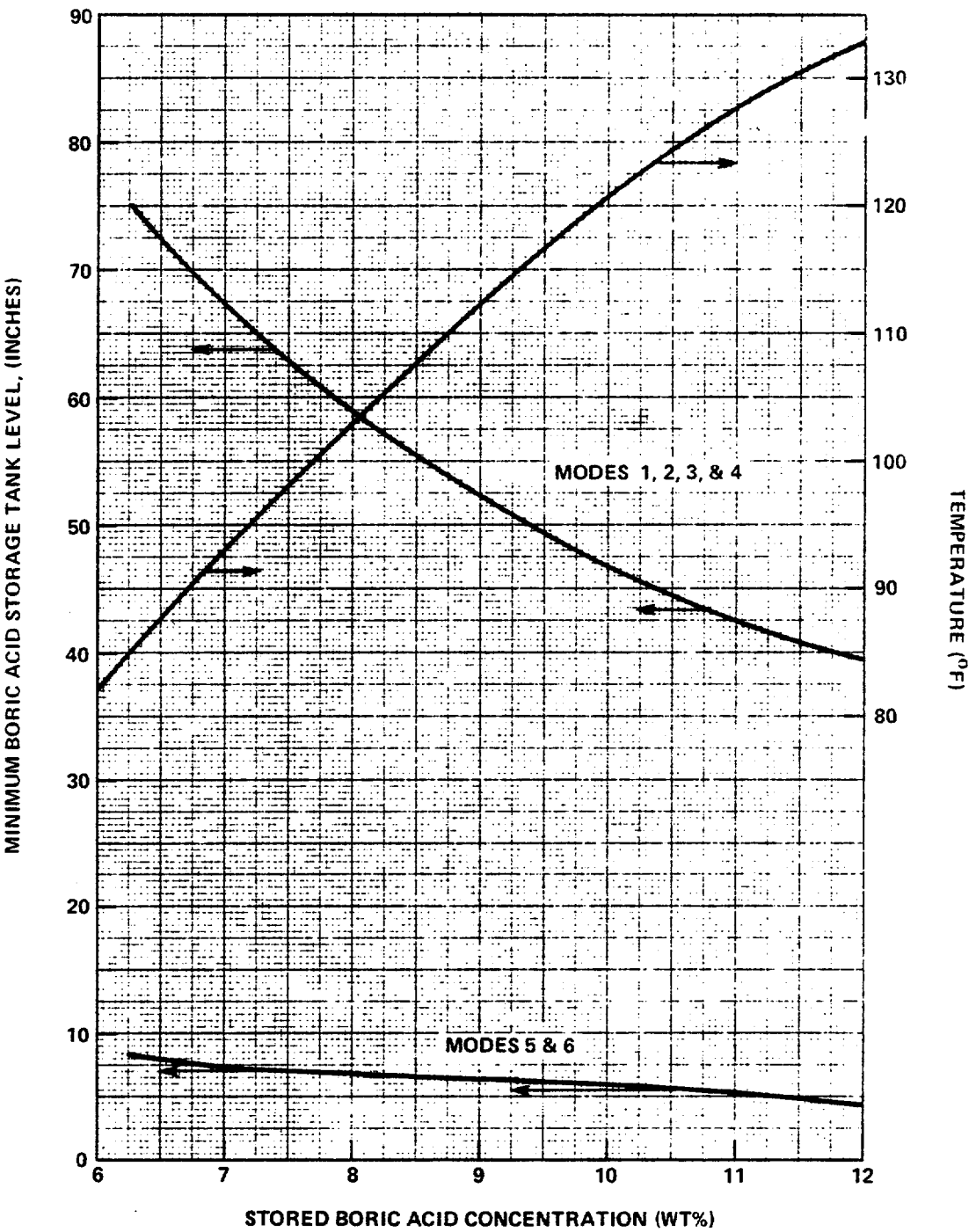

FIGURE 3.1-1

Minimum Boric Acid Storage Tank Volume and Temperature as a Function of Stored Boric Acid Concentration

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.8 At least two of the following three borated water sources shall be OPERABLE:

a. Two boric acid storage tank(s) and one associated heat tracing circuit per tank with the contents of the tanks in accordance with Figure 3.1-1 and the boron concentration limited to $\leq$ 8%, and

b. The refueling water tank with:

1. A minimum contained borated water volume of 400,000 gallons,
2. A boron concentration of between 1720 and 2200 ppm,
3. A minimum solution temperature of 40°F, and
4. A maximum solution temperature of 100°F in MODE 1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one borated water source OPERABLE, restore at least two borated water sources to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to at least 1% $\Delta k/k$ at 200°F; restore at least two borated water sources to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.8 At least two borated water sources shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying the boron concentration in each water source,
2. Verifying the contained borated water volume in each water source, and
3. Verifying the boric acid storage tank solution temperature.

b. At least once per 24 hours by verifying the RWT temperature when the outside air temperature is < 40°F.

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

SAFETY INJECTION TANKS

LIMITING CONDITION FOR OPERATION

3.5.1 Each reactor coolant system safety injection tank shall be OPERABLE with:

a. The isolation valve open,

b. A contained borated water volume of between 1113 and 1179 cubic feet of borated water (equivalent to tank levels of between 187 and 199 inches, respectively),

c. A boron concentration of between 1720 and 2200 ppm, and

d. A nitrogen cover-pressure of between 200 and 250 psig.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

a. With one safety injection tank inoperable, except as a result of a closed isolation valve, restore the inoperable tank to OPERABLE status within one hour or be in HOT SHUTDOWN within the next 12 hours.

b. With one safety injection tank inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.5.1 Each safety injection tank shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

1. Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and

2. Verifying that each safety injection tank isolation valve is open.

*With pressurizer pressure $\geq$ 1750 psia.

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 31 days and within 6 hours after each solution volume increase of $\geq$ 1% of tank volume by verifying the boron concentration of the safety injection tank solution.

c. At least once per 31 days when the RCS pressure is above 2000 psig, by verifying that power to the isolation valve operator is removed by maintaining the feeder breaker open under administrative control.

d. Within 4 hours prior to increasing the RCS pressure above 1750 psia by verifying, via local indication at the valve, that the tank isolation valve is open.

e. At least once per 18 months by verifying that each safety injection tank isolation valve opens automatically under each of the following conditions:

   1. When the RCS pressure exceeds 300 psia, and

   2. Upon receipt of a safety injection test signal.

EMERGENCY CORE COOLING SYSTEMS

REFUELING WATER TANK

LIMITING CONDITION FOR OPERATION

3.5.4 The refueling water tank shall be OPERABLE with:

a. A minimum contained borated water volume of 400,000 gallons,

b. A boron concentration of between 1720 and 2200 ppm,

c. A minimum water temperature of 40°F, and

d. A maximum solution temperature of 100°F in MODE 1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the refueling water tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.4 The RWT shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying the contained borated water volume in the tank, and

2. Verifying the boron concentration of the water.

b. At least once per 24 hours by verifying the RWT temperature when the outside air temperature is < 40°F.

SURVEILLANCE REQUIREMENTS (Continued)

a. Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the filter train shall be demonstrated OPERABLE by also:

a) Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 20,000 cfm $\pm$ 10%, and

b) Verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate 20,000 cfm $\pm$ 10%.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the filter train at a flow rate of 20,000 cfm $\pm$ 10%.

2. Verifying that the filter train starts on a Containment Isolation test signal.

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 20,000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 20,000 cfm ± 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribtuion is uniform within ± 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 2000 cfm ± 10%.

3. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers demonstrates a removal efficiency of ≥ 90% for radioactive methyl iodide when the sample is tested in accordance with ANSI N510-1975 (130°C, 95% R.H.). The carbon samples not obtained from test canisters shall be prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

   b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

4. Verifying a system flow rate of 2000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal adsorber operation by either:

1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister demonstrates a removal efficiency of ≥ 90% for radioactive methyl iodide when the sample is tested in accordance with ANSI N510-1975 (130°C, 95% R.H.); or

2. Verifying within 31 days after removal that a laboratory analysis of at least two carbon samples demonstrate a removal efficiency of ≥ 90% for radioactive methyl iodide when the samples are tested in accordance with ANSI N510-1975 (130°C, 95% R.H.) and the samples are prepared by either:

SURVEILLANCE REQUIREMENTS (Continued)

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also:

a) Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 2000 cfm $\pm$ 10%, and

b) Verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 2000 cfm $\pm$ 10%.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the filter train at a flow rate of 2000 cfm $\pm$ 10%.

2. Verifying that the filter train starts on a Containment Isolation Test Signal.

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 2000 cfm $\pm$ 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 2000 cfm $\pm$ 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within $\pm$ 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

2. Verifying within 31 days after removal that a laboratory analysis of at least two carbon samples demonstrate a removal efficiency of $\geq$ 90% for radioactive methyl iodide when the samples are tested in accordance with ANSI N510-1975 (130°C, 95% R.H.) and the samples are prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

   b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

   Susequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also:

   a) Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 3000 cfm $\pm$ 10%, and

   b) Verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 3000 cfm $\pm$ 10%.

d. At least once per 18 months by verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 4 inches Water Gauge while operating the filter train at a flow rate of 3000 cfm $\pm$ 10%.

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 3000 cfm $\pm$ 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 3000 cfm $\pm$ 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within $\pm$ 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-36-1	SUCTION #11 AUX. FEED PUMP 12'	A	No	No
1-36-1A	SUCTION #11 AUX. FEED PUMP 12'	A	No	No
1-38-1	PRESSURIZER SAMPLE LINES 13'	I	Yes	No
1-38-2	PRESSURIZER SAMPLE LINES 13'	I	Yes	No
1-38-4	PRESSURIZER SAMPLE LINES 38'	I	Yes	No
1-38-5	PRESSURIZER SAMPLE LINES 24'	I	Yes	No
1-38-6	PRESSURIZER SAMPLE LINES 37'	I	Yes	No
1-24-1	DIESEL GENERATOR #12 EXHAUST 92'	A	No	No
1-24-2	DIESEL GENERATOR #11 EXHAUST 92'	A	No	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-24-3	EMERGENCY DIESEL #12 EXHAUST 61'	A	No	No
1-24-3A	EMERGENCY DIESEL #12 EXHAUST 61'	A	No	No
1-24-4	EMERGENCY DIESEL #11 EXHAUST 61'	A	No	No
1-24-4A	EMERGENCY DIESEL #11 EXHAUST 61'	A	No	No
1-24-5	DIESEL GENERATOR #21 EXHAUST 92'	A	No	No
1-24-6	DIESEL GENERATOR #21 EXHAUST 62'	A	No	No
1-24-6A	DIESEL GENERATOR #21 EXHAUST 62'	A	No	No
1-41-1	SUCTION #13 CHARGING PUMP -10'	A	No	No
1-41-2	AUX. SPRAY 65'	I	Yes	No
1-41-3	AUX. SPRAY 65'	I	Yes	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-52-1	SUCTION HEADER HPSI #13 CONTAINMENT SPRAY #12 -15'	A	No	No
1-52-2	SUCTION TO HPSI PUMP #13 -15'	A	No	No
1-52-2A	SUCTION TO HPSI PUMP #13 -15'	A	No	No
1-52-3	SI PUMP SUCTION FROM RWT -15'	A	No	No
1-52-5	S/D COOLING TO SUCTION HPSI #13 -15'	A	No	No
1-52-6	S/D COOLING TO LPSI SUCTION -15'	A	No	No
1-52-7	S/D COOLING TO SUCTION HPSI #13 -15'	A	No	No
1-52-8	S/D COOLING TO LPSI SUCTION -15'	A	No	No
1-52-9	S/D COOLING TO LPSI #11 SUCTION -15'	A	No	No
1-52-10	S/D COOLING HEADER TO LPSI PUMP -15'	A	No	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-52-11	S/D COOLING TO LPSI SUCTION -15'	A	No	No
1-52-12	SUCTION TO HPSI PUMP #12 -15'	A	No	No
1-52-13	LPSI PUMP #12 DISCHARGE -15'	A	No	No
1-52-14	LPSI HEADER -15'	A	No	No
1-52-15	LPSI PUMP #12 DISCHARGE -15'	A	No	No
1-52-16	12A SI HEADER 25'	I	Yes	No
1-52-17	AUX. HPSI HEADER TO LOOP 11A 5'	A	No	No
1-52-18	LETDOWN LINE - PENETRATION 34'	I	Yes	No
1-52-21	LPSI HEADER 5'	A	No	No
1-52-22	LPSI HEADER 5'	A	No	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-52-57	SI TANK 12B DISCHARGE 55'	I	Yes	No
1-52-58	SI TANK 12B DISCHARGE 45'	I	Yes	No
1-52-58A	SI TANK 12B DISCHARGE 45'	I	Yes	No
1-52-59	LPSI TO LOOP 12B 48'	I	Yes	No
1-52-59A	LPSI TO LOOP 12B 48'	I	Yes	No
1-52-60	LPSI TO LOOP 12B (PENETRATION) 42'	I	Yes	No
1-52-61	LPSI TO LOOP 12B (PENETRATION) 42'	I	Yes	No
1-52-62	SI TO LOOP 12B 48'	I	Yes	No
1-52-63	SI LOOP 11B CHECK VALVE LEAKAGE 48'	I	Yes	No
1-52-64	SI LOOP 11B CHECK VALVE LEAKAGE 47'	I	Yes	No
1-52-65	SI LOOP 11B CHECK VALVE LEAKAGE 49'	I	Yes	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-52-66	SI LOOP 11A CHECK VALVE LEAKAGE 47'	I	Yes	No
1-52-67	SI LOOP 11A CHECK VALVE LEAKAGE 49'	I	Yes	No
1-52-68	SI LOOP 11A CHECK VALVE LEAKAGE 49'	I	Yes	No
1-52-69	SI LOOP 11A CHECK VALVE LEAKAGE 48'	I	Yes	No
1-52-70	SI LOOP 11A CHECK VALVE LEAKAGE 47'	I	Yes	No
1-52-71	SI LOOP 11A CHECK VALVE LEAKAGE 47'	I	Yes	No
1-52-72	SI LOOP 11A CHECK VALVE LEAKAGE 47'	I	Yes	No
1-52-73	SI LOOP 11B CHECK VALVE LEAKAGE 48'	I	Yes	No
1-52-74	HPSI HEADER TO LOOP 11B 5'	A	No	No
1-52-75	SI TO LOOP 11A 48'	I	Yes	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-60-25	SPRAY TO CONTAINMENT CHARCOAL FILTER #11 63'	I	Yes	No
1-60-26	SPRAY TO CONTAINMENT CHARCOAL FILTER #11 66'	I	Yes	No
1-60-27	SPRAY TO CONTAINMENT CHARCOAL FILTER #11 66'	I	Yes	No
1-60-28	SPRAY TO CONTAINMENT CHARCOAL FILTER #11 66'	I	Yes	No
1-61-1	CONTAINMENT SPRAY PUMP #12 DISCHARGE -15'	A	No	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-61-14	CONTAINMENT SPRAY D/STRM S/D H/X 25'	I	Yes	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-64-98	RCP 11A and 11B MOTORS 56'	I	Yes	No
1-64-99	RCP 11A and 11B MOTORS 56'	I	Yes	No
1-64-100	RCP 12A and 12B MOTORS 56'	I	Yes	No
1-64-101	RCP 12A and 12B MOTORS 56'	I	Yes	No
1-64-102	RCP 12A and 12B MOTORS 56'	I	Yes	No
1-64-103	RCP 12A and 12B MOTORS 56'	I	Yes	No
1-67-1	#11 SPENT FUEL POOL COOL. PUMP SUCTION - RWT 27'	A	No	No
1-67-2	INLET - SPENT FUEL POOL COOLER #12 27'	A	No	No
1-67-2A	INLET - SPENT FUEL POOL COOLER #12 27'	A	No	No
1-67-3	WATER TO REFUELING POOL #11 38'	I	Yes	No
1-67-4	WATER TO REFUELING POOL #11 40'	I	Yes	No

TABLE 3.7-4

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1-69-1	AUX. STEAM SUPPLY TO WASTE EVAPORATORS 33'	A	No	No
1-71-1	DESUPERHEATED STEAM TO WASTE EVAPORATORS 83'	A	No	No
1-71-2	MISC. WASTE EVAP. STEAM SUPPLY 69'	A	No	No
1-71-2A	MISC. WASTE EVAP. STEAM SUPPLY 69'	A	No	No
1-71-3	LETDOWN H/X RELIEF TO RC WASTE RECEIVER TANK #12 40'	A	No	Yes
1-71-4	DRAINS TO RC DRAIN TANK #11 24'	I	Yes	No
1-83-1	MAIN STEAM FROM S.G. #11 27'	A	No	Yes
1-83-2	MAIN STEAM FROM S.G. #11 27'	A	No	Yes
1-83-3	MAIN STEAM FROM S.G. #12 27'	A	No	Yes
1-83-4	MAIN STEAM FROM S.G. #12 27'	A	No	No

REFUELING OPERATIONS

COMMUNICATIONS

LIMITING CONDITION FOR OPERATION

3.9.5 Direct communications shall be maintained between the control room and personnel at the refueling station.

APPLICABILITY: During CORE ALTERATIONS.

ACTION:

When direct communications between the control room and personnel at the refueling station cannot be maintained, suspend all CORE ALTERATIONS. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.5 Direct communications between the control room and personnel at the refueling station shall be demonstrated within one hour prior to the start of and at least once per 12 hours during CORE ALTERATIONS.

REFUELING OPERATIONS

REFUELING MACHINE OPERABILITY

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of CEAs and/or fuel assemblies:

a. The main hoist shall be used for the movement of fuel assemblies and shall be OPERABLE with:

1. A minimum capacity of 1550 pounds, and

2. An overload cutoff limit of $\leq$ 3000 pounds.

b. The auxiliary hoist shall be used for the movement of CEAs which are being removed from or inserted into fuel assemblies in the core and shall be OPERABLE with:

1. A minimum capacity of 1000 pounds, and

2. A load indicator which shall be used to prevent lifting loads in excess of 1000 pounds.

APPLICABILITY: During movement of CEAs or fuel assemblies within the reactor pressure vessel.

ACTION:

With the requirements for refueling machine OPERABILITY not satisfied, suspend its use from operations involving the movement of CEAs and fuel assemblies within the reactor pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.6.1 The main hoist of the refueling machine shall be demonstrated OPERABLE within 72 hours prior to the start of movement of fuel assemblies within the reactor pressure vessel by performing a load test of at least 1550 pounds with the refueling pool dry or at least 1420 pounds with the refueling pool flooded and demonstrating an automatic load cut off when the crane load exceeds 3000 pounds.

4.9.6.2 The auxiliary hoist and associated load indicator of the refueling machine shall be demonstrated OPERABLE within 72 hours prior to the start of movement of CEAs within the reactor pressure vessel by performing a load test of at least 1000 pounds.

REFUELING OPERATIONS

CRANE TRAVEL - SPENT FUEL STORAGE POOL BUILDING

LIMITING CONDITION FOR OPERATION

3.9.7 Loads in excess of 1600 pounds shall be prohibited from travel over fuel assemblies in the storage pool.

APPLICABILITY: With fuel assemblies in the storage pool.

ACTION:

With the requirements of the above specification not satisfied, place the crane load in a safe condition. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.7 The weight of each load, other than a fuel assembly and CEA, shall be verified to be $\leq$ 1600 pounds prior to moving it over fuel assemblies.

REFUELING OPERATIONS

COOLANT CIRCULATION

LIMITING CONDITION FOR OPERATION

3.9.8 At least one shutdown cooling loop shall be in operation.

APPLICABILITY: MODE 6.

ACTION:

a. With less than one shutdown cooling loop in operation, except as provided in b. below, suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours. The shutdown cooling pumps may be de-energized during the time intervals required for local leak rate testing of containment penetration number 41 pursuant to the requirements of Specification 4.6.1.2.d, provided 1) no operations are permitted which could cause dilution of the reactor coolant system boron concentration, 2) all CORE ALTERATIONS are suspended, and 3) all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere are maintained closed.

b. The shutdown cooling loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.8 A shutdown cooling loop shall be determined to be in operation and circulating reactor coolant at a flow rate of $\geq$ 3000 gpm* at least once per 24 hours.

*$\geq$ 1500 gpm when the Reactor Coolant System is drained to a level below the midplane of the hot leg.

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 4 inches Water Gauge while operating the ventilation system at a flow rate of 32,000 cfm ± 10%.

2. Verifying that each exhaust fan maintains the spent fuel storage pool area at a negative pressure of ≥ 1/8 inches Water Gauge relative to the outside atmosphere during system operation.

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 32,000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 32,000 cfm ± 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within ± 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

REFUELING OPERATIONS

SPENT FUEL CASK HANDLING CRANE

LIMITING CONDITION FOR OPERATION

3.9.13 Crane travel of the spent fuel shipping cask crane shall be restricted to prohibit a spent fuel shipping cask from travel over any area within one shipping cask length of any fuel assembly.

APPLICABILITY: With fuel assemblies in the storage pool.

ACTION:

With the requirements of the above specification not satisfied, place the crane load in a safe condition. The proviisons of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.13 Crane interlocks and physical stops which restrict a spent fuel shipping cask from passing over any area within one shipping cask length of any fuel assembly shall be demonstrated OPERABLE within 7 days prior to crane use and at least once per 7 days thereafter during crane operation.

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.

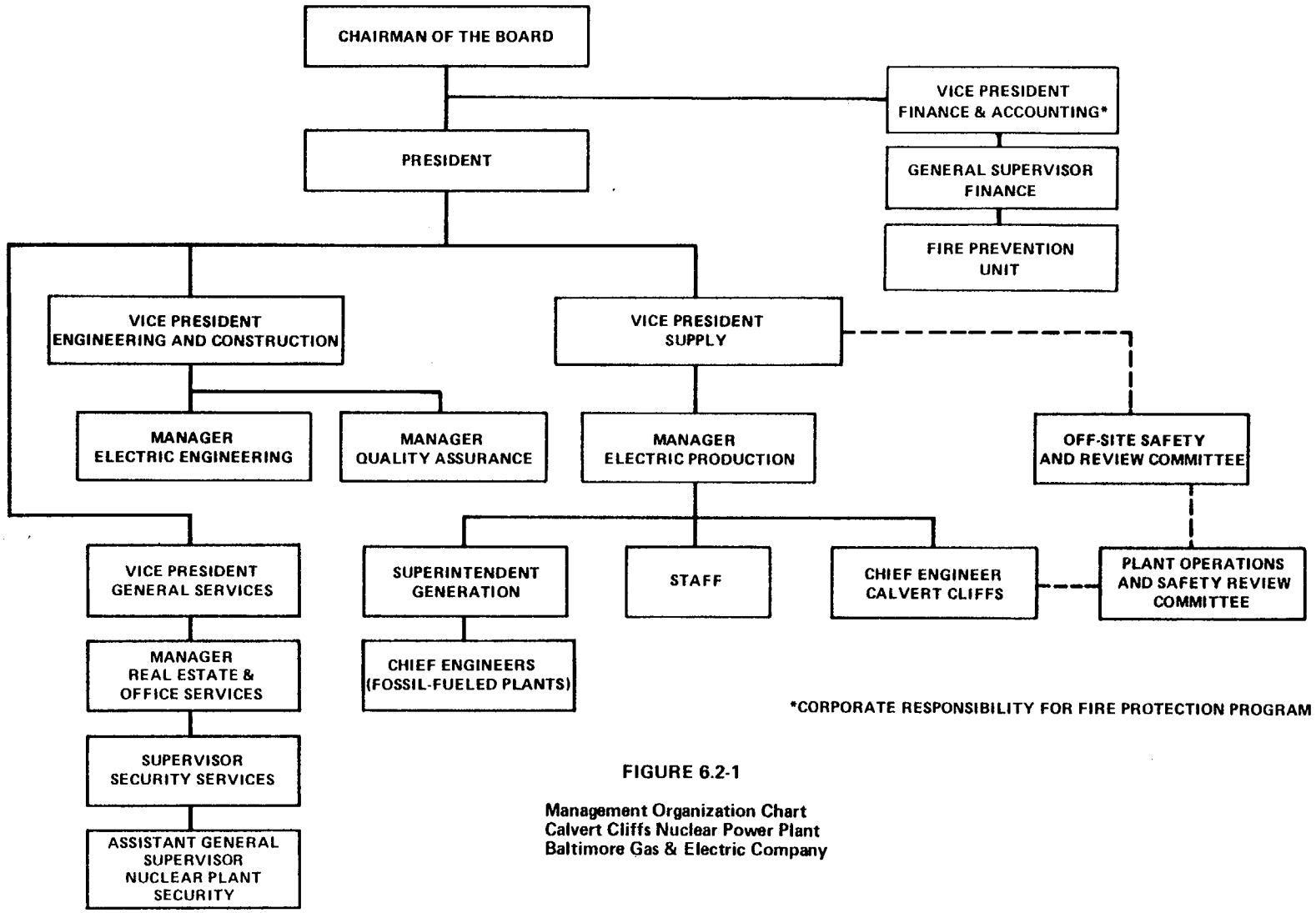

FIGURE 6.2-1

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

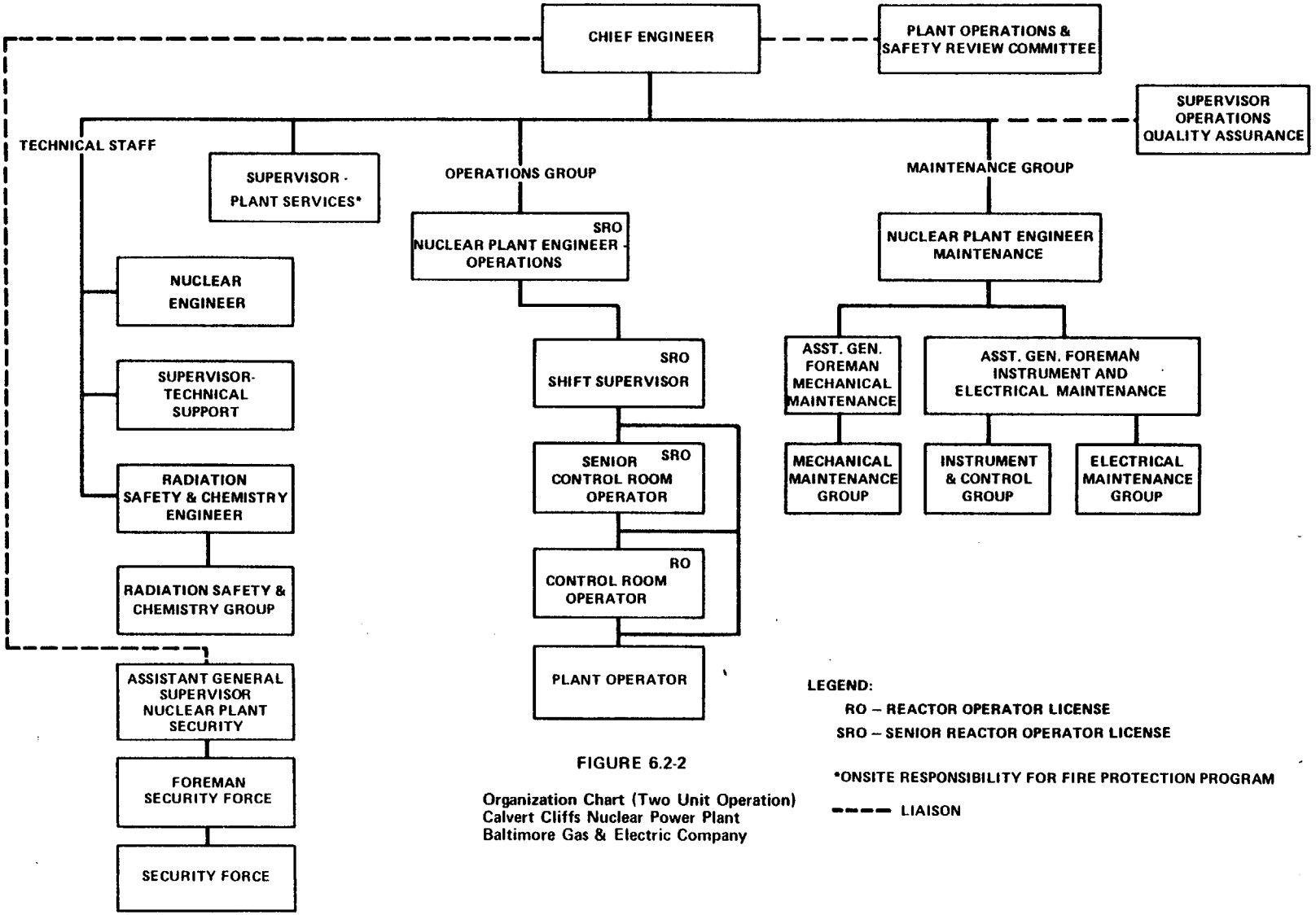

FIGURE 6.2-2

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

2.2.2 Treatment Chemicals

Objective

To identify and quantify significant treatment chemicals used in the plant.

Specification

This specification applies to treatment chemicals added or used in significant quantities in the plant.

The total amounts of the below listed chemicals added or used in the plant shall be reported in the Annual Environmental Operating Report.

1. Phosphates
2. Boric Acid
3. Hydrazine
4. Sodium Hypochlorite

Monitoring Requirement

A record shall be kept of the chemical store receipts and use of sodium phosphate, boric acid, hydrazine and hypochlorite.

Basis

Sodium phosphate may be used in steam generators at concentrations that range from 30 to 60 ppm. The steam generator blowdown rate is expected to be on the average 2 GPM, and the phosphate concentration in the blowdown is not expected to exceed 60 ppm. The blowdown shall be mixed with the circulating water flowing at a rate no less than 15,500 GPM per conduit. The calculated change in the concentration of phosphate in the final discharge will not exceed 0.009 ppm and will be within the natural variation of the phosphate concentrations observed during 1969 through 1971 in the plant intake and discharge areas.

In order to control reactivity within the reactor coolant during reactor operation, boric acid is used as a chemical shim in the reactor coolant at a concentration of about 800 ppm. The reactor coolant is periodically processed for radioactive decontamination which is accomplished by several treatment processes including evaporation. The evaporators used for this purpose are expected to yield a distillate with boron concentration not to exceed 10 ppm.

(with a copy to the Director, Office of Nuclear Reactor Regulation). The written report shall (a) describe, analyze and evaluate the occurence, (b) describe the cause of the occurrence, and (c) indicate the corrective action (including any significant change in procedures) taken to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

The significance of an unusual or apparently important event with regard to environmental impact may not be obvious or fully appreciated at the time of occurrence. In such cases the NRC shall be informed of changes in the licensee's assessment of the significance of the event and a corrected report shall be submitted as expeditiously as possible.

5.6.2.b Nonroutine Radiological Environmental Operating Reports

If a confirmed measured level of radioactivity at any offsite location in any environmental medium exceeds ten times the "background" value, a written report shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 14 days after confirmation. The report shall include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the results.

5.6.2.c Nonroutine Radioactive Effluent Reports

(1) When the release rate of radioactive liquid effluents, excluding tritium and noble gases, exceeds 2.50 curies per unit during any calendar quarter, the licensee shall notify the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation), within 30 days, identifying the causes and describing the proposed program of action to reduce such release rates.

(2) When the annual projected release rate of radioactive materials in gaseous wastes, averaged over a calendar quarter, exceeds twice the annual objectives, the licensee shall notify the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 30 days, identifying the causes and describing the proposed program of action to reduce such release rates.

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

BALTIMORE GAS & ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 21
License No. DPR-69

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

   A. The applications for amendment by Baltimore Gas and Electric Company (the licensee) dated November 13, 1978 and January 31, 1979, comply 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 Operating 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. 21, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 24, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 21

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.

APPENDIX A

Pages

3/4 1-16
3/4 5-1
3/4 5-7
3/4 6-15
3/4 6-16
3/4 6-30
3/4 6-31
3/4 7-23
3/4 7-24
3/4 9-6
3/4 9-8
3/4 9-15
6-2
6-3

APPENDIX B

Pages

2.2-3
5.6-3

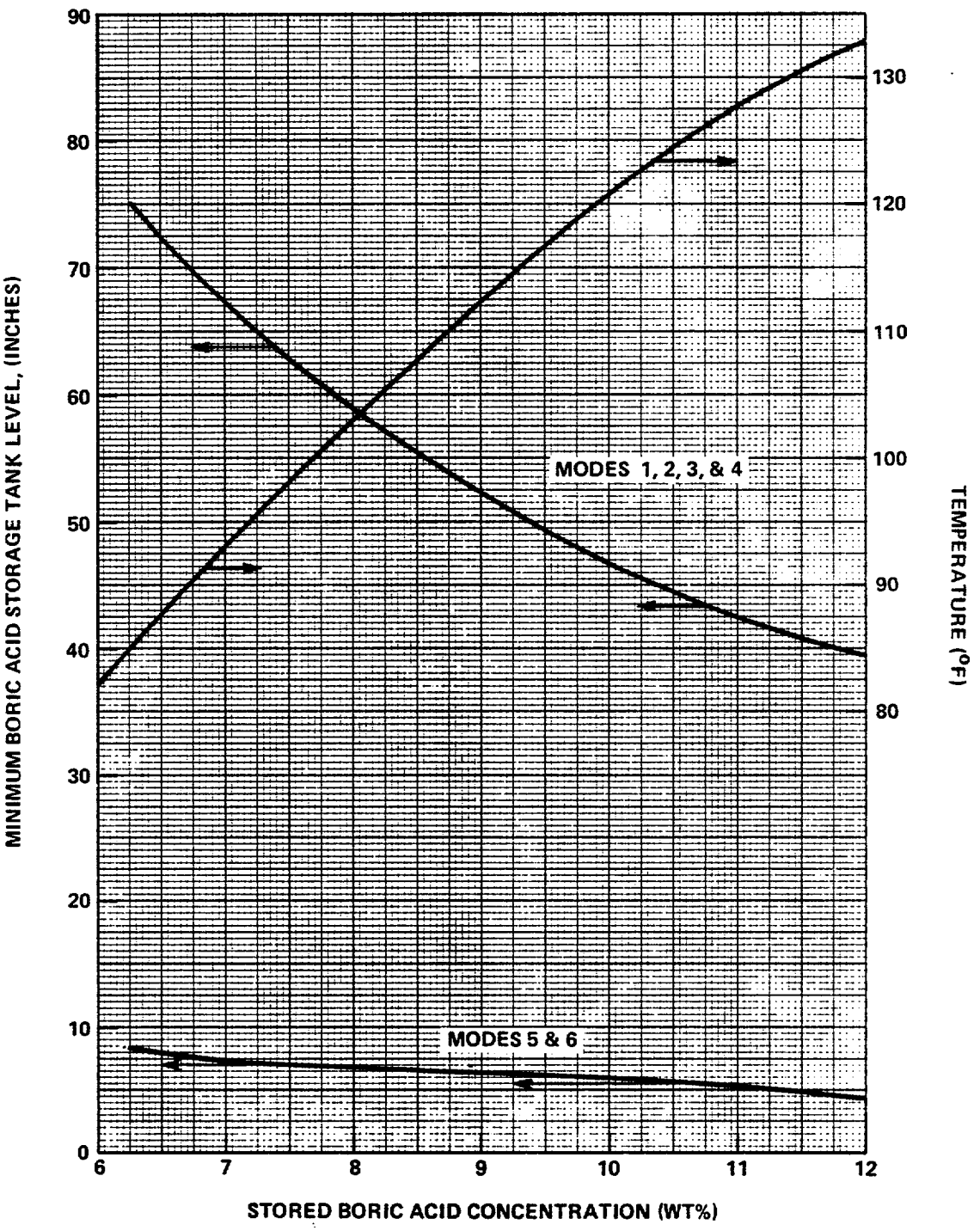

FIGURE 3.1-1

Minimum Boric Acid Storage Tank Volume and Temperature as a Function of Stored Boric Acid Concentration

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.8 At least two of the following three borated water sources shall be OPERABLE:

a. Two boric acid storage tank(s) and one associated heat tracing circuit per tank with the contents of the tanks in accordance with Figure 3.1-1 and the boron concentration limited to $\leq$ 8%, and

b. The refueling water tank with:

1. A minimum contained borated water volume of 400,000 gallons,
2. A boron concentration of between 1720 and 2200 ppm,
3. A minimum solution temperature of 40°F, and
4. A maximum solution temperature of 100°F in MODE 1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one borated water source OPERABLE, restore at least two borated water sources to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to at least 1% $\Delta k/k$ at 200°F; restore at least two borated water sources to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.8 At least two borated water sources shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying the boron concentration in each water source,
2. Verifying the contained borated water volume in each water source, and
3. Verifying the boric acid storage tank solution temperature.

b. At least once per 24 hours by verifying the RWT temperature when the outside air temperature is < 40°F.

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

SAFETY INJECTION TANKS

LIMITING CONDITION FOR OPERATION

3.5.1 Each reactor coolant system safety injection tank shall be OPERABLE with:

a. The isolation valve open,

b. A contained borated water volume of between 1113 and 1179 cubic feet of borated water (equivalent to tank levels of between 187 and 199 inches, respectively),

c. A boron concentration of between 1720 and 2200 ppm, and

d. A nitrogen cover-pressure of between 200 and 250 psig.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

a. With one safety injection tank inoperable, except as a result of a closed isolation valve, restore the inoperable tank to OPERABLE status within one hour or be in HOT SHUTDOWN within the next 12 hours.

b. With one safety injection tank inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.5.1 Each safety injection tank shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

1. Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and

2. Verifying that each safety injection tank isolation valve is open.

*With pressurizer pressure $\geq$ 1750 psia.

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 31 days and within 6 hours after each solution volume increase of $\geq$ 1% of tank volume by verifying the boron concentration of the safety injection tank solution.

c. At least once per 31 days when the RCS pressure is above 2000 psig, by verifying that power to the isolation valve operator is removed by maintaining the feeder breaker open under administrative control.

d. Within 4 hours prior to increasing the RCS pressure above 1750 psia by verifying, via local indication at the valve, that the tank isolation valve is open.

e. At least once per 18 months by verifying that each safety injection tank isolation valve opens automatically under each of the following conditions:

1. When the RCS pressure exceeds 300 psia, and

2. Upon receipt of a safety injection test signal.

EMERGENCY CORE COOLING SYSTEMS

REFUELING WATER TANK

LIMITING CONDITION FOR OPERATION

3.5.4 The refueling water tank shall be OPERABLE with:

a. A minimum contained borated water volume of 400,000 gallons,

b. A boron concentration of between 1720 and 2200 ppm,

c. A minimum water temperature of 40°F, and

d. A maximum water temperature of 100°F in MODE 1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the refueling water tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.4 The RWT shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying the contained borated water volume in the tank, and

2. Verifying the boron concentration of the water.

b. At least once per 24 hours by verifying the RWT temperature when the outside air temperature is < 40°F.

SURVEILLANCE REQUIREMENTS (Continued)

a. Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the filter train shall be demonstrated OPERABLE by also:

a) Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 20,000 cfm $\pm$ 10%, and

b) Verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate 20,000 cfm $\pm$ 10%.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the filter train at a flow rate of 20,000 cfm $\pm$ 10%.

2. Verifying that the filter train starts on a Containment Isolation test signal.

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 20,000 cfm $\pm$ 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 20,000 cfm $\pm$ 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within $\pm$ 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 2000 cfm ± 10%.

3. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers demonstrates a removal efficiency of ≥ 90% for radioactive methyl iodide when the sample is tested in accordance with ANSI N510-1975 (130°C, 95% R.H.). The carbon samples not obtained from test canisters shall be prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

   b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

4. Verifying a system flow rate of 2000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal adsorber operation by either:

1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister demonstrates a removal efficiency of ≥ 90% for radioactive methyl iodide when the sample is tested in accordance with ANSI N510-1975 (130°C, 95% R.H.); or

2. Verifying within 31 days after removal that a laboratory analysis of at least two carbon samples demonstrate a removal efficiency of ≥ 90% for radioactive methyl iodide when the samples are tested in accordance with ANSI N510-1975 (130°C, 95% R.H.) and the samples are prepared by either:

SURVEILLANCE REQUIREMENTS (Continued)

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also:

a) Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 2000 cfm $\pm$ 10%, and

b) Verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 2000 cfm $\pm$ 10%.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the filter train at a flow rate of 2000 cfm $\pm$ 10%.

2. Verifying that the filter train starts on a Containment Isolation Test Signal.

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 2000 cfm $\pm$ 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 2000 cfm $\pm$ 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within $\pm$ 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying within 31 days after removal that a laboratory analysis of at least two carbon samples demonstrate a removal efficiency of $\geq$ 90% for radioactive methyl iodide when the samples are tested in accordance with ANSI N510-1975 (130°C, 95% R.H.) and the samples are prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

   b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

   Susequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also:

   a) Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 3000 cfm $\pm$ 10%, and

   b) Verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 3000 cfm $\pm$ 10%.

d. At least once per 18 months by verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 4 inches Water Gauge while operating the filter train at a flow rate of 3000 cfm $\pm$ 10%.

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 3000 cfm $\pm$ 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the filter train at a flow rate of 3000 cfm $\pm$ 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within $\pm$ 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

REFUELING OPERATIONS

COMMUNICATIONS

LIMITING CONDITION FOR OPERATION

3.9.5 Direct communications shall be maintained between the control room and personnel at the refueling station.

APPLICABILITY: During CORE ALTERATIONS.

ACTION:

When direct communications between the control room and personnel at the refueling station cannot be maintained, suspend all CORE ALTERATIONS. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.5 Direct communications between the control room and personnel at the refueling station shall be demonstrated within one hour prior to the start of and at least once per 12 hours during CORE ALTERATIONS.

REFUELING OPERATIONS

REFUELING MACHINE OPERABILITY

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of CEAs and/or fuel assemblies:

a. The main hoist shall be used for the movement of fuel assemblies and shall be OPERABLE with:

1. A minimum capacity of 1550 pounds, and

2. An overload cutoff limit of $\leq$ 3000 pounds.

b. The auxiliary hoist shall be used for the movement of CEAs which are being removed from or inserted into fuel assemblies in the core and shall be OPERABLE with:

1. A minimum capacity of 1000 pounds, and

2. A load indicator which shall be used to prevent lifting loads in excess of 1000 pounds.

APPLICABILITY: During movement of CEAs or fuel assemblies within the reactor pressure vessel.

ACTION:

With the requirements for refueling machine OPERABILITY not satisfied, suspend its use from operations involving the movement of CEAs and fuel assemblies within the reactor pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.6.1 The main hoist of the refueling machine shall be demonstrated OPERABLE within 72 hours prior to the start of movement of fuel assemblies within the reactor pressure vessel by performing a load test of at least 1550 pounds with the refueling pool dry or at least 1420 pounds with the refueling pool flooded and demonstrating an automatic load cut off when the crane load exceeds 3000 pounds.

4.9.6.2 The auxiliary hoist and associated load indicator of the refueling machine shall be demonstrated OPERABLE within 72 hours prior to the start of movement of CEAs within the reactor pressure vessel by performing a load test of at least 1000 pounds.

REFUELING OPERATIONS

CRANE TRAVEL - SPENT FUEL STORAGE POOL BUILDING

LIMITING CONDITION FOR OPERATION

3.9.7 Loads in excess of 1600 pounds shall be prohibited from travel over fuel assemblies in the storage pool.

APPLICABILITY: With fuel assemblies in the storage pool.

ACTION:

With the requirements of the above specification not satisfied, place the crane load in a safe condition. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.7 The weight of each load, other than a fuel assembly and CEA, shall be verified to be $\leq$ 1600 pounds prior to moving it over fuel assemblies.

REFUELING OPERATIONS

COOLANT CIRCULATION

LIMITING CONDITION FOR OPERATION

3.9.8 At least one shutdown cooling loop shall be in operation.

APPLICABILITY: MODE 6.

ACTION:

a. With less than one shutdown cooling loop in operation, except as provided in b. below, suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours. The shutdown cooling pumps may be de-energized during the time intervals required for local leak rate testing of containment penetration number 41 pursuant to the requirements of Specification 4.6.1.2.d, provided 1) no operations are permitted which could cause dilution of the reactor coolant system boron concentration, 2) all CORE ALTERATIONS are suspended, and 3) all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere are maintained closed.

b. The shutdown cooling loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.8 A shutdown cooling loop shall be determined to be in operation and circulating reactor coolant at a flow rate of $\geq$ 3000 gpm* at least once per 24 hours.

* > 1500 gpm when the Reactor Coolant System is drained to a level below the midplane of the hot leg.

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 4 inches Water Gauge while operating the ventilation system at a flow rate of 32,000 cfm ± 10%.

2. Verifying that each exhaust fan maintains the spent fuel storage pool area at a negative pressure of ≥ 1/8 inches Water Gauge relative to the outside atmosphere during system operation.

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 32,000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 32,000 cfm ± 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within ± 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

REFUELING OPERATIONS

SPENT FUEL CASK HANDLING CRANE

LIMITING CONDITION FOR OPERATION

3.9.13 Crane travel of the spent fuel shipping cask crane shall be restricted to prohibit a spent fuel shipping cask from travel over any area within one shipping cask length of any fuel assembly.

APPLICABILITY: With fuel assemblies in the storage pool.

ACTION:

With the requirements of the above specification not satisfied, place the crane load in a safe condition. The proviisons of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.13 Crane interlocks and physical stops which restrict a spent fuel shipping cask from passing over any area within one shipping cask length of any fuel assembly shall be demonstrated OPERABLE within 7 days prior to crane use and at least once per 7 days thereafter during crane operation.

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.

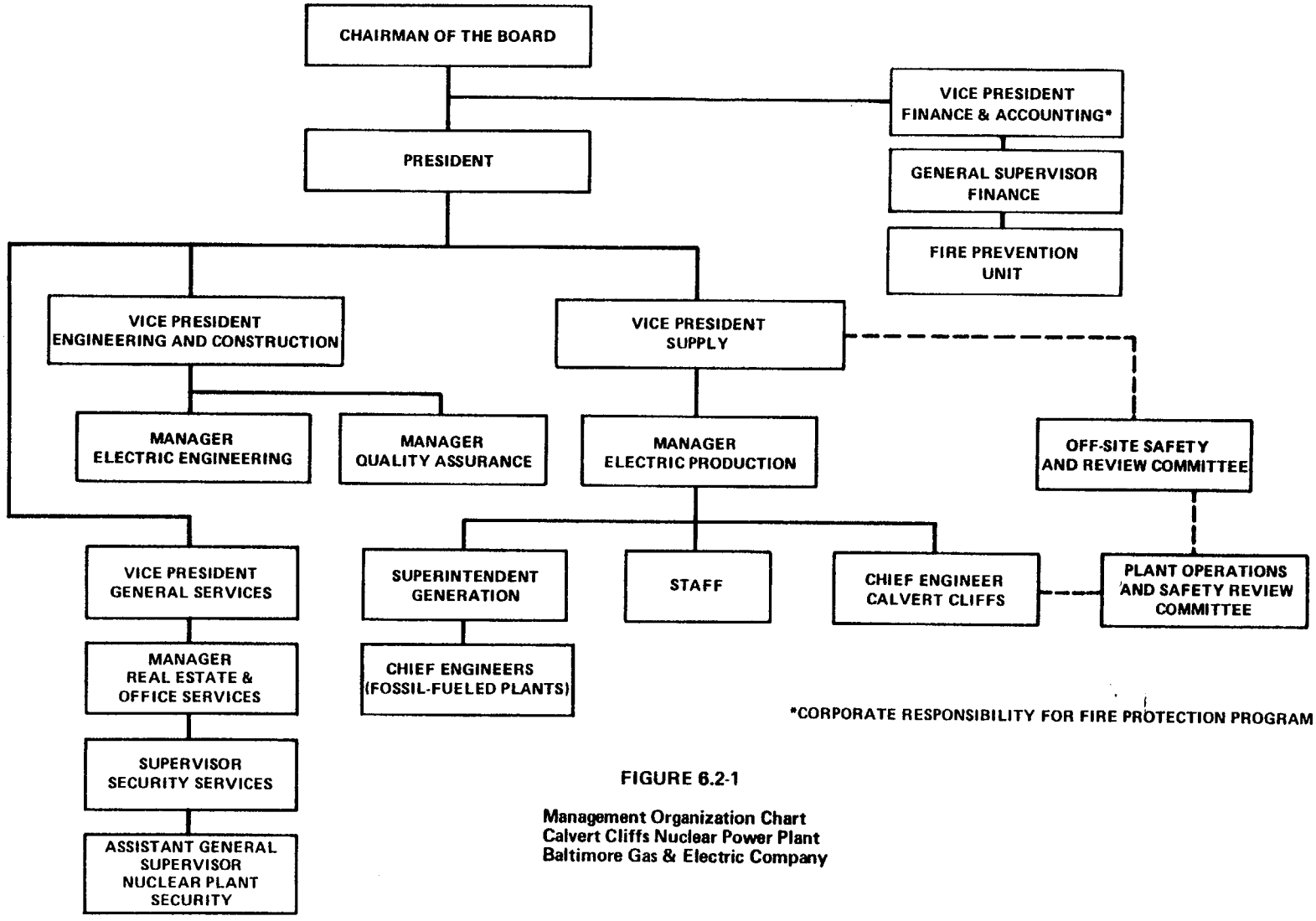

FIGURE 6.2-1

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

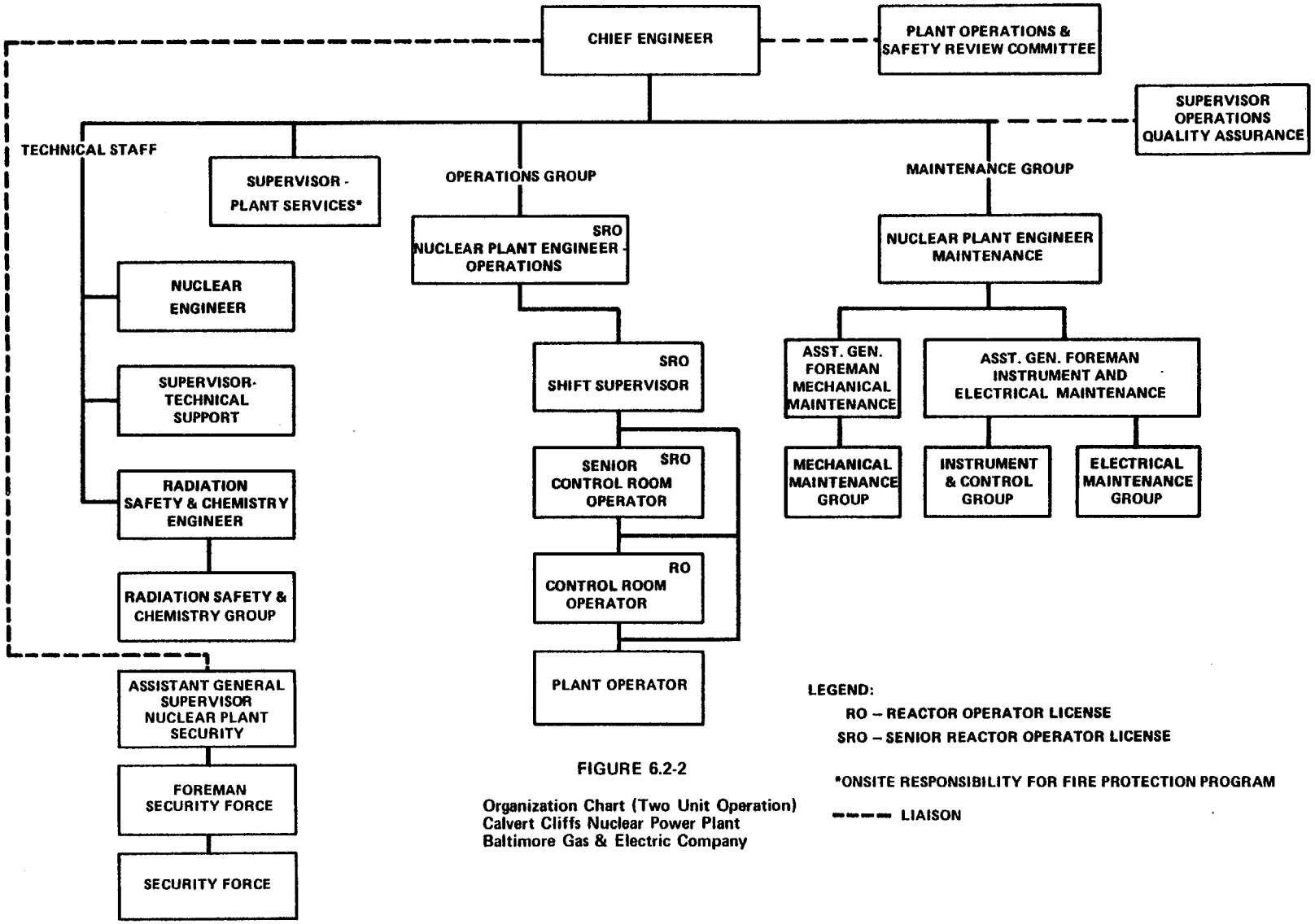

FIGURE 6.2-2

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

2.2.2 Treatment Chemic

Objective

To identify and quantify significant treatment chemicals used in the plant.

Specification

This specification applies to treatment chemicals added or used in significant quantities in the plant.

The total amounts of the below listed chemicals added or used in the plant shall be reported in the Annual Environmental Operating Report.

1. Phosphates
2. Boric Acid
3. Hydrazine
4. Sodium Hypochlorite

Monitoring Requirement

A record shall be kept of the chemical store receipts and use of sodium phosphate, boric acid, hydrazine and hypochlorite.

Basis

Sodium phosphate may be used in steam generators at concentrations that range from 30 to 60 ppm. The steam generator blowdown rate is expected to be on the average 2 GPM, and the phosphate concentration in the blowdown is not expected to exceed 60 ppm. The blowdown shall be mixed with the circulating water flowing at a rate no less than 15,500 GPM per conduit. The calculated change in the concentration of phosphate in the final discharge will not exceed 0.009 ppm and will be within the natural variation of the phosphate concentrations observed during 1969 through 1971 in the plant intake and discharge areas.

In order to control reactivity within the reactor coolant during reactor operation, boric acid is used as a chemical shim in the reactor coolant at a concentration of about 800 ppm. The reactor coolant is periodically processed for radioactive decontamination which is accomplished by several treatment processes including evaporation. The evaporators used for this purpose are expected to yield a distillate with boron concentration not to exceed 10 ppm.

(with a copy to the Director, Office of Nuclear Reactor Regulation). The written report shall (a) describe, analyze and evaluate the occurence, (b) describe the cause of the occurrence, and (c) indicate the corrective action (including any significant change in procedures) taken to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

The significance of an unusual or apparently important event with regard to environmental impact may not be obvious or fully appreciated at the time of occurrence. In such cases the NRC shall be informed of changes in the licensee's assessment of the significance of the event and a corrected report shall be submitted as expeditiously as possible.

5.6.2.b Nonroutine Radiological Environmental Operating Reports

If a confirmed measured level of radioactivity at any offsite location in any environmental medium exceeds ten times the "background" value, a written report shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 14 days after confirmation. The report shall include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the results.

5.6.2.c Nonroutine Radioactive Effluent Reports

(1) When the release rate of radioactive liquid effluents, excluding tritium and noble gases, exceeds 2.50 curies per unit during any calendar quarter, the licensee shall notify the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation), within 30 days, identifying the causes and describing the proposed program of action to reduce such release rates.

(2) When the annual projected release rate of radioactive materials in gaseous wastes, averaged over a calendar quarter, exceeds twice the annual objectives, the licensee shall notify the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 30 days, identifying the causes and describing the proposed program of action to reduce such release rates.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENTS NOS. 38 AND 21 TO

FACILITY OPERATING LICENSES NOS. DPR-53 AND DPR-69

BALTIMORE GAS AND ELECTRIC COMPANY

CALVERT CLIFFS NUCLEAR POWER PLANT UNITS NOS. 1 AND 2

DOCKETS NOS. 50-317 AND 50-318

1.0 Introduction

By applications dated November 13, 1978 and January 31, 1979, Baltimore Gas and Electric Company (BG&E or the licensee) requested amendments to Facility Operating Licenses Nos. DPR-53 and DPR-69 for the Calvert Cliffs Nuclear Power Plant (CCNPP) Units Nos. 1 and 2.

The proposed changes to the Appendix A Technical Specifications (TS) for both units consist of:

1. limiting the maximum boron concentration in the safety injection tanks (SITs) and refueling water tanks (RWTs);

2. allowing reduced shutdown cooling flow when the reactor coolant system (RCS) is partially drained;

3. replacing the requirements for 18-month air flow distribution check across HEPA and charcoal filters with requirements to perform the check after applicable maintenance;

4. making administrative corrections to the CCNPP Unit No. 1 hydraulic snubber list;

5. specifying a lifting capacity of the refueling machine for both dry and wet types of overload protection tests;

6. updating the organizational control of the CCNPP security force;

7. revising the hydraulic snubber list to permit modifications of the support system for the auxiliary feedwater discharge piping (Unit No. 1 only).

2.0 Discussion and Evaluation

2.1 SIT and RWT Maximum Boron Concentration

Trisodium phosphate dodecahydrate (TSP) is used at the Combustion Engineering (CE) designed facilities to control the pH of the containment sump water following a loss of coolant accident (LOCA). TSP is used to reduce the probability of chloride stress corrosion cracking leading to equipment failure or loss of containment integrity and to ensure low volatility of dissolved radioiodines. At CCNPP, the TSP is stored in three dissolving baskets located on the lowest level of the containment. The Final Safety Analysis Report (FSAR) required a sufficient quantity of TSP to raise the pH of the sump water to approximately 7.0.

The present TS, Section 4.5.2.e, requires verification that a minimum of 75 cubic feet of solid granular TSP is contained within the TSP storage baskets at least once per 18 months. In September 1977, BG&E notified us that 75 cubic feet of TSP was insufficient to raise the pH of the containment sump to 7.0 if the RCS, SIT and RWT boron concentrations were at their maximums. They committed to limit the SIT and RWT boron concentration to a maximum of 2200 ppm, the value calculated to keep the sump water, after a LOCA, basic (pH greater than 7.0). The 2200 ppm value is within the current TS Sections 3.1.2.8, 3.5.1 and 3.5.4 limits on SIT and RWT boron concentrations of 1720 to 2700 ppm.

Request No. 1 of the BG&E letter dated November 13, 1978, is to change the SIT and RWT boron concentration limits in the above specifications to between 1720 and 2200 ppm. Since the safety analysis is based on the minimum boron concentrations, 1720 ppm, this change does not reduce the minimum reactor shutdown margin and has no affect on LOCA analyses conclude that the proposed change is acceptable.

2.2 Minimum Shutdown Cooling Flow

BG&E states in their November 13, 1978 letter that when a LPSI pump is operated in the shutdown cooling mode with the reactor coolant hot leg drained to a level below the midpoint of the pipe, it has been observed that there is insufficient water in the hot leg to allow proper LPSI Pump operation without resulting in a drastic pump flow reduction probably due to air being sucked into the pump inlet along with the water in the hot leg. If the LPSI pump flow is reduced to a control room indication of about 1500 gpm by throttling a valve on the pump discharge portion of the system, a uniform flow rate is observed.

Change request No. 2 is to reduce TS 4.9.8 required surveillance of shutdown cooling flow from a minimum of 3000 gpm to at least 1500 gpm when the RCS is drained to a level below the midplane of the hot leg during refueling. The action statement of TS 3.9.8 allows the shutdown

cooling loop to be removed from operation for up to one hour per eight hour period during refueling operations to improve fuel handling visibility. Another TS (Section 3.1.1.3) requires that a flow of at least 3000 gpm be maintained while making boron concentration reductions, thus precluding boron stratification. BG&E further states that operational experience while in cold shutdown (Mode 5) has shown that more than sufficient core cooling is provided by a pump flow rate of 1500 gpm.

In our review of this proposed change, we find that the only abnormal operating occurrence that could be affected by reducing the shutdown cooling flow during fuel handling is the boron dilution accident. In the FSAR, BG&E analyzed the boron dilution during refueling accident and found that at least 100 minutes would be required to bring the reactor to the critical condition from the 1720 ppm boron concentration required by the TS. They conclude that the operator can take corrective action in this time period when he is made aware of the problem by the audible count rate signal increase and other control room alarms. In this analysis, it is assumed that the RCS boron concentration is uniform at all times. We find that this assumption is not affected by the proposed reduction in shutdown cooling flow. The 1500 gpm is still significantly greater than the maximum dilution rate of 132 gpm (the total possible output of the three charging pumps) and will provide adequate mixing of the RCS. Therefore, we conclude this proposed change is acceptable.

2.3 HEPA and Charcoal Filters Air Flow Distribution Check

BG&E's proposed change No. 5 of the November 13, 1978 letter is to replace the TS requirements to check air flow distribution of certain ventilation systems every 18 months with requirements to perform such surveillance test only after maintenance which affects the uniformity of airflow distribution. The proposed change would affect these systems:

1. containment iodine removal system (TS 4.6.3.1);

2. penetration room exhaust air filtration system (TS 4.6.6.1);

3. emergency core cooling system pump room exhaust air filtration system (TS 4.7.7.1); and

4. spent fuel pool ventilation system (TS 4.9.12).

The proposed TS changes provide a test of the uniformity of airflow distribution when such a test is necessary, when maintenance is performed on the filter train which affects the airflow distribution. The present TS provides periodic airflow distribution tests even when no maintenance which affects airflow distribution has been done on the filter train in the

testing period (18 months). It is extremely unlikely that anything which might affect the airflow distribution could happen except during maintenance. In the case of maintenance, the proposed TS requires the licensee to verify the airflow distribution if the maintenance affects the airflow distribution. Both the proposed TS change and the present TS require that the tests be performed in accordance with ANSI N510-1975.

Therefore, we conclude that the proposed TS change is acceptable because it provides adequate assurance that the effectiveness of the filter trains of these four systems will not be compromised due to non-uniformity of airflow distribution.

2.4 Corrections to the Hydraulic Snubber Listing

Proposed change No. 6 of the November 13, 1978 letter is to correct the elevation, the radiation zone and accessibility of certain hydraulic snubbers listed in TS Table 3.7-4 for CCNPP Unit No. 1. A heretofore unlisted snubber supporting a pressurizer sample line at the 37 foot elevation (Snubber No. 1-38-6) would be added to the TS listing. No existing snubbers are being physically relocated or removed.

We find that this proposed change is only a correction in the TS table and has no effect on the operability of safety-related hydraulic snubbers and therefore has no effect on plant safety.

2.5 Refueling Machine Capacity Test

Proposed change No. 9 of the November 13, 1978 BG&E letter is to modify TS Section 4.9.6 to specify a wet capacity test limit for the refueling machine main hoist. BG&E states that the specified lifting capacity of the refueling machine is 110 percent of the dry weight of a fuel assembly containing a control element assembly (CEA). The purpose of the lifting capacity test of the main hoist is to assure the weight of a fuel assembly can be safely hoisted. A dummy fuel assembly was designed to provide a weight of 1550 pounds dry but which only weighs 1420 pounds in water (due to buoyant effects). The proposed change would allow the capacity test to be conducted with the refueling pool either dry or flooded to account for this condition.

The dummy fuel assembly, including a CEA, used to perform this surveillance test has the exact shape and weight of a regular fuel assembly. Extra weight can be added to equal the 10 percent allowance found acceptable in the FSAR for both the dry and wet test. We conclude that this proposed change to the TS surveillance requirement is acceptable because an appropriate load test will still be performed to protect the fuel assembly from being dropped. The 3000 pound overload cutoff check is kept in the TS to protect from excess lifting forces.

In the process of evaluating this proposed change, we determined that the auxiliary hoist used to move the CEAs should have operability and surveillance requirements. BG&E has accepted TS of the format issued on other plants having Standard TS to cover operability and surveillance of this hoist.

2.6 Security Force Administrative Reorganizations

BG&E has recently placed the CCNPP security force under the cognizance of the Real Estate and Office Services Department. This is consistent with other BG&E security functions. Proposed change No. 10 of the November 13, 1978 letter reflects this organizational modification. The proposed title of one of the positions needs to be modified to agree with the title documented by the BG&E security submittal. BG&E has agreed to this change in title.

We find this change continues to provide adequate separation between the security organization and the plant operating staff. Therefore, we conclude that the proposed change in security force organization is acceptable.

2.7 Modification of the Auxiliary Feedwater Support System

BG&E is in the process of systematically reviewing all snubber installations at CCNPP. The intention of this review is to eliminate as many snubbers as possible. The reliability of the piping system is improved by minimizing the number of hydraulic snubbers. Hydraulic snubbers have a potential for leakage and miscalibration. This potential makes them inherently less reliable than other types of rigid and mechanical supports. Also a snubber without hydraulic fluid provides essentially no piping support.

BG&E proposed in their letter of January 31, 1979, a change to Table 3.7-4 of the CCNPP Unit No. 1 TS to delete the requirements for four hydraulic snubbers supporting the discharge piping of the auxiliary feedwater system. The support system will be modified to eliminate the need for these four hydraulic snubbers utilizing sway struts and rigid supports.

A reanalysis of the piping system was performed by Bechtel Power Corporation using their ME 632 computer code. The code utilizes a linear elastic modeling technique and performs thermal, dead weight, and seismic analyses. While not specifically stated in the FSAR, the auxiliary feedwater system piping was originally designed in accordance with ANSI B31.7 Class II. This reanalysis was performed in accordance with the original design criteria. The calculated stresses for the modified system with the snubbers removed are well below the code allowables for all design conditions. We find that this reanalysis, using a standard calculational method, provides assurance that the auxiliary feedwater system continues to meet the original design criteria.

The redesign of this support system reduces the surveillance burden, improves the overall system reliability and thus reduces the potential of a safety system piping failure due to a malfunction of the support system. Thus, the reliability of the discharge piping of the auxiliary feedwater system and the facility as a whole will be increased by reducing the number of hydraulic snubbers necessary to satisfy the design criteria.

3.0 ENVIRONMENTAL CONSIDERATION

We have determined that the Appendix A portion of 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 these amendments.

4.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the Appendix A portion of these 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: April 24, 1979

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS 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 Amendments Nos. 38 and 21 to Facility Operating Licenses Nos. DPR-53 and DPR-69 issued to Baltimore Gas & Electric Company, which revised Technical Specifications for operation of the Calvert Cliffs Nuclear Power Plant, Units Nos. 1 and 2 (the facility) located in Calvert County, Maryland. The amendments are effective as of the date of issuance.

The amendment permits the Appendix A Technical Specifications of both Calvert Cliffs Nuclear Power Plant units to:

(1) limit the maximum boron concentration in the safety injection and refueling water tanks;

(2) allow reduced shutdown cooling flow when the reactor coolant system is partially drained;

(3) modify the requirements for air flow distribution checks across the HEPA and charcoal filters;

(4) correct the safety related hydraulic snubber list (Unit 1 only);

(5) modify the operability and surveillance requirements for the refueling machine;

(6) update the organizational control of the security force; and

(7) revise the hydraulic snubber list to permit modifications of the support system for the auxiliary feedwater discharge piping (Unit 1 only).

The amendments also make administrative type changes to the Appendix B Technical Specifications for both units.

The applications for the amendments comply 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 these amendments.

For further details with respect to this action, see (1) the applications for amendments dated November 13, 1978 and January 31, 1979, (2) Amendments Nos. 38 and 21 to Licenses Nos. DPR-53 and DPR-69, (3) the Commission's related Safety Evaluation, and (4) the Commission's letter dated April 24, 1979. 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. A copy of items (2), (3), and (4) 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 24th day of April 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

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