Docket No. 50-317

JUN 16 1976

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Baltimore Gas and Electric Company
ATTN: Mr. A. E. Lundvall, Jr.
Vice President - Supply
Gas and Electric Building
Charles Center
Baltimore, Maryland 21203

Gentlemen:

The Commission has issued the enclosed Amendment No. 15 to Facility Operating License No. DPR-53 for the Calvert Cliffs Nuclear Power Plant Unit No. 1. The amendment consists of changes in the Technical Specifications in accordance with your application dated December 8, 1975. Changes to your proposals were necessary to meet our requirements. These have been discussed with your staff and have been made.

This amendment modifies the Technical Specifications to: (1) decrease the required number of operable boric acid flow paths to the reactor coolant system and (2) correct a minor editorial error.

The proposed change to the Appendix B Technical Specification regarding relocation of temperature sensors for condenser outlet water temperature was accomplished by Amendment No. 14 dated May 20, 1976.

The proposed change to the core safety limits and limiting safety system settings (Figures 2-4 and 2-8) cannot be approved on the basis of the information provided. The figures provided must be revised to extend the limits below the 60 percent minimum power level prior to approval.

Copies of the Safety Evaluation and the Federal Register Notice are enclosed.

Sincerely,

Original Signed by:
Dennis L. Ziemann

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

Enclosures and cc:
See next page

OFFICE ➤	DOR:ORB #2	DOR:ORB #2	OELD	DOR:ORB #2		
SURNAME ➤	EAReeves:ah	RMDiggs	BHJ	DLZiemann		
DATE ➤	6/9/76	6/7/76	6/16/76	6/18/76		

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

Enclosures:
1. Amendment No. 15 to
   License No. DPR-53
2. Safety Evaluation
3. Notice

cc w/enclosures:
James A. Biddison, Jr.
General Counsel
Gas and Electric Building
Charles Center
Baltimore, Maryland 21203

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Vice President
Chesapeake Environmental
Protection Association
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Camp Springs, Maryland 20023

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Bechtel Power Corporation
ATTN: Mr. R. L. Ashley
Chief Nuclear Engineer
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Combustion Engineering, Inc.
ATTN: Mr. J. A. Honey
Project Manager
P. O. Box 500
Windsor, Connecticut 06095

Calvert County Library
Prince Frederick, Maryland 20678

Mr. Bernard Fowler
President, Board of County
Commissioners
Prince Frederick, Maryland 20678

w/4 cys. of encls. and 1 cy
of 12/8/75 BG&E filing:
Mr. Warren D. Hodges, Director
Department of State Planning
301 West Preston Street
Baltimore, Maryland 21201

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 15
License No. DPR-53

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

   A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated December 8, 1975, 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. After weighing the environmental aspects involved, 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.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by:
Dennis L. Ziemann

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: JUN 18 1976

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SURNAME ➤						
DATE ➤						

ATTACHMENT TO LICENSE AMENDMENT NO. 15

FACILITY OPERATING LICENSE NO. DPR-53

DOCKET NO. 50-317

Replace pages 3.2-1, 3.2-2 and 4.5-25 of the Appendix A portion of the Technical Specifications with the attached revised pages bearing the same number and additional page 3.2-2a. The changed areas on the pages are shown by a marginal line.

NOTE: The revised pages are printed on one side only. Therefore, the existing page in the Technical Specifications should not be destroyed if the reverse side contains an unrevised page.

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3.2 CHEMICAL AND VOLUME CONTROL SYSTEM

Applicability: Applies to the operational status of the chemical and volume control system.

Objective: To define those conditions of the chemical and volume control system necessary to assure safe reactor operation and shutdown.

Specification:

A. When fuel is in the reactor, there shall be at least one flow path to the core for boric acid injection, utilizing either the CVCS or safety injection system.

B. The reactor coolant system shall be in cold shutdown, except for low-temperature physics testing, unless the following conditions are met:

1. At least two charging pumps shall be operable.

2. One concentrated boric acid pump shall be operable.

3. Both concentrated boric acid tanks shall contain a minimum of 81 inches of 6-1/4% by weight boric acid solution or its equivalent of a higher concentration of boric acid at a temperature at least 25 F above saturation temperature for the concentration present in the tank.

4. System piping and valves shall be operable to the extent of establishing two of the following three boric acid flow paths to the Reactor Coolant System:

   a. Two flow paths from the concentrated boric acid tanks to the charging pump suction header which are actuated from separate engineered safety feature buses and;

   b. One flow path from the Refueling Water Tank to the charging pump suction header.

5. Both channels of heat tracing shall be operable for the above flow paths.

6. Level indication instrumentation to verify the level requirements of Specification B.3, above, shall be operable.

C. During power operation or low-power physics testing, the requirements of Specification B may be modified to allow the following conditions: If the system is not restored to meet the requirements of Specification B within the time period specified, the reactor shall be placed in a hot shutdown condition within 12 hours. If the requirements are not satisfied within an additional 48 hours, the reactor shall be placed in a cold shutdown condition within 24 hours.

1. One of the two operable charging pumps may be removed from service provided two charging pumps are restored to operable status within 24 hours.

2. One concentrated boric acid tank or its associated level indication may be out of service provided a minimum of 81 inches of 6-1/4% by weight boric acid solution or its equivalent of a higher concentration at a temperature at least 25 F above saturation temperature is contained in the operable tank and provided the tank or level indication is restored to operable status within 24 hours.

3. With only one of the required boron injection flow paths (of Specification 3.2.B.4) to the Reactor Coolant System OPERABLE, restore at least two boron injection flow paths to the Reactor Coolant System to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to at least 1% Δ k/k at 200°F within the next 6 hours; restore at least two flow paths to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

4. One channel of heat tracing may be out of service provided it is restored to operable status within 24 hours.

D. The letdown line excess flow check valve shall not be bypassed unless the reactor coolant system is in cold shutdown. The bypass valve may be opened during reactor operation, if the excess flow valve malfunctions, in order to allow for a safe and orderly shutdown and cooldown.

Basis: The chemical and volume control system provides control of the reactor coolant system boron inventory.(1) This is normally accomplished by using any one of the three charging

TABLE 4.5.2

LOCAL LEAK TESTING OF

CONTAINMENT ISOLATION VALVES

Pene. No.	P&ID (FSAR Figure)	Isolation Valve Identification No.	Location WRT Containment	Type of Valve	Test Type (a)
1A	M-66 (9-10)	CV-5465	Inside	Globe	3
		CV-5466	Inside	Globe	3
		CV-5467	Inside	Globe	3
		CV-5464	Outside	Globe	1
1B	M-78 (11-2)	CV-2180	Outside	Globe	3
		CV-2181	Outside	Globe	1
1C	M-73 (9-3)	CV-506	Inside	Globe	3
		CV-505	Outside	Globe	1
1D	M-463 (9-11A)	Sv-6529	Outside	Globe	1
2A	M-73 (9-3)	CV-515	Inside	Globe	3
		CV-516	Inside	Globe	1
		7M3-1	Outside	Gate	1
		7M3-1	Outside	Gate	1
2B	M-73 (6-1)	CV-517	Inside	Globe	5 (b)
		CV-518	Inside	Globe	5 (b)
		CV-519	Inside	Globe	5 (b)
		SP-210M3-2	Inside	Check	1
		210M3-2	Outside	Check	1
7A	M-65 (9-20A)	Blind Flange	Inside	---	2
		19-1	Outside	Gate	1
7B	M-65 (9-20A)	Blind Flange	Inside	---	2
		19-1	Outside	Gate	1
8	M-76 (5-10)	MOV-5462	Outside	Gate	1
		MOV-5463	Outside	Gate	1
9	M-74 (6-1)	238M3-1	Inside	Check	1
		238M3-2	Outside	Check	1
10	M-74 (6-1)	238M3-1	Inside	Check	1
		238M3-2	Outside	Check	1
13	M-65 (9-20)	CV-1410	Inside	Butterfly	4 (c)
		CV-1411	Outside	Butterfly	1
14	M-65 (9-20)	CV-1412	Inside	Butterfly	4 (c)
		CV-1413	Outside	Butterfly	1

NOTES:
(a) See Legend at end of table.
(b) Penetration in use during accident conditions.
(c) Accident pressure seats and test pressure unseats these valves

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 15 TO FACILITY LICENSE NO. DPR-53

BALTIMORE GAS AND ELECTRIC COMPANY

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT NO. 1

DOCKET NO. 50-317

INTRODUCTION

By letter dated December 8, 1975, the Baltimore Gas and Electric Company (BG&E) requested amendment of Facility License No. DPR-53 for the Calvert Cliffs Nuclear Power Plant Unit No. 1. The request would revise the Technical Specifications by:

1. decreasing the required number of operable boric acid flow paths to the reactor coolant system, and

2. correcting a minor editorial error.

The December 8 letter also requested changes to the Technical Specifications to: (1) permit relocation of temperature sensors for the condenser outlet water and (2) revise figures 2-4 and 2-8. Relocation of the temperature sensors was authorized by Amendment No. 14 dated May 20, 1976. Revision of figures 2-4 and 2-8 is not being considered in this evaluation as the figures must be resubmitted with the limits extended below 60 percent power level.

EVALUATION

1. Boric Acid Flow Paths to the Reactor Coolant System

The existing technical specification (Section 3.2.B.4) requires operability of two boron flow paths from the concentrated boric acid tanks and a flow path from the refueling water tank (RWT). If any one of the three flow paths is inoperable, it must be made operable within 24 hours (Specification 3.2.C.3). The proposed change would require operability of only two of the three existing boron flow paths.

Because of the present requirement for three of the systems to be operable, recovering from a reactor scram by direct dilution of boron concentration in the reactor coolant system is not possible. This mode of operation cannot be accomplished without isolating the flow path from the RWT, thus rendering one of the three flow paths inoperable. Adequate flow would be provided with only one of the three flow paths; therefore, this change is acceptable. Operability of two of the three flow paths is all that is required for similar reactor plants currently being licensed.

Direct dilution of the boron concentration in the primary system has been used safely during the Startup Test Program at Calvert Cliffs and is not restricted by specifications for other Combustion Engineering Company reactor plants now in operation. The proposed technical specification would allow direct dilution of the reactor coolant system.

The boron dilution incident was previously analyzed and found acceptable for Calvert Cliffs Unit No. 1 during the licensing review. Boron dilution is performed under strict administrative procedural controls and adequate instrumentation is available to alert the operator of significant changes in boron concentration. Reactivity addition due to boron dilution is slow enough to give the operator sufficient time to take corrective action before significant shutdown margin is lost. Based on these considerations, we have concluded that the proposed changes to the Specification 3.2.B.4 are acceptable.

The requested deletion of Specification 3.2.C.3 is considered unacceptable. We would therefore modify the proposed change to require one inoperable boron flow path to be restored within 72 hours when only one flow path is operable or be in hot standby and borated to a shutdown margin of at least 1% Δ k/k at 200°F within 6 hours. This change is consistent with the requirements being placed on currently licensed facilities and is acceptable to the licensee.

2. Correction to Table 4.5.2

The isolation valve numbers shown for penetrations 13 and 14 were reversed and should be corrected. The change has no affect on plant safety and is acceptable.

ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the changes 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 changes 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date:

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-317

BALTIMORE GAS AND ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 15 to Facility Operating License No. DPR-53, issued to Baltimore Gas and Electric Company (the licensee), which revised Technical Specifications for operation of the Calvert Cliffs Nuclear Power Plant Unit No. 1 (the facility) located in Calvert County, Maryland. The amendment is effective as of its date of issuance.

The amendment modifies the Technical Specifications for the facility to 1) decrease from three to two the required number of operable boric acid flow paths to the reactor coolant system and 2) correct minor editorial errors.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental statement, negative declaration

or environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated December 8, 1975, (2) Amendment No. 15 to License No. DPR-53, 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 14th day of June, 1976

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by:
Dennis L. Ziemann

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