

AUG 13 1976

Docket No. 50-318

Baltimore Gas and Electric Company
ATTN: Mr. John W. Gore, Jr.,
Vice President
Gas and Electric Building
Charles Center
Baltimore, Maryland 21203

Gentlemen:

ISSUANCE OF FACILITY OPERATING LICENSE FOR CALVERT CLIFFS NUCLEAR
POWER PLANT, UNIT 2

The Nuclear Regulatory Commission has issued the enclosed Facility Operating License No. DPR-69 and Technical Specifications (Appendices A and B), to the Baltimore Gas and Electric Company for the Calvert Cliffs Nuclear Power Plant, Unit 2, located in Calvert County, Maryland. A copy of the Notice of Issuance is enclosed.

As indicated in the enclosed documents entitled, "Negative Declaration Regarding Issuance of a Limited Facility License DPR-69, Calvert Cliffs Nuclear Power Plant, Unit No. 2" and "Environmental Impact Appraisal of Issuance of Fuel Loading, Criticality Low-Power Testing Operating License for Calvert Cliffs Nuclear Power Plant, Unit No. 2", the Commission has concluded that an environmental impact statement for this particular action is not warranted because there will be no environmental impact significantly affecting the quality of the human environment. Accordingly, Facility Operating License DPR-69 authorizes the Baltimore Gas and Electric Company to operate the Calvert Cliffs Nuclear Power Plant, Unit No. 2 at a reactor core power level of 25.6 megawatts thermal (one percent of the rated thermal power level of 2560 megawatts) for testing purposes. Facility Operating License DPR-69 is conditioned to provide a sequential approach to one percent of full power which takes into account a series of incomplete construction items, preoperational tests, startup tests and other items, and provides for further Commission approval at various stages of these activities.

The Office of Nuclear Reactor Regulation has issued Supplement No. 6 to the Safety Evaluation Report for the Calvert Cliffs Nuclear Plant, Unit 2. A copy is enclosed for your information.

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Baltimore Gas and Electric
Company

- 2 -

AUG 13 1976

Two signed originals of Amendment No. 5 to Indemnity Agreement No. B-70, which covers the activities authorized under License No. DPR-69 are enclosed for your review and acceptance. Please sign and return one copy of Amendment No. 5 to this office.

Sincerely,

Original signed by R. C. DeYoung

K Karl Kniel, Chief
Light Water Reactors
Branch No. 2
Division of Project Management

Enclosures:

1. Facility Operating License
No. DPR-69 w/Technical
Specifications (Appendices A and B)
2. Federal Register Notice
3. Negative Declaration
4. Environmental Impact Appraisal
5. Safety Evaluation Report Supplement No. 6
6. Amendment No. 5 to Indemnity
Agreement No. B-70

cc: See page 3

(SEE PREVIOUS CONCURRENCES.)

OFFICE >	LWR 2	LWR 2	ELD	DEPT	DEPT LWR	
SURNAME >	Jee:mt	HRood <i>HR</i>		RDeYoung	RSBoyd	<i>JPM</i>
DATE >	8/13/76	8/13/76	8/13/76	8/13/76	8/13/76	8/13/76

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Mr. J. A. Honey
Project Manager
Combustion Engineering, Inc.
P. O. Box 500
Windsor, Connecticut 06095

Dr. Steven Long
Power Plant Siting Program
Department of Natural Resources
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State office Building
Annapolis, Maryland 21401

State Department of Public Health
ATTN: State Health Officer
State Office Building
Montgomery, Alabama 36104

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

Mr. Lee Bettenhausen, Ph.D.
Regional Health Physicist
U. S. Environmental Protection Agency
Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106

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SURNAME ➤						
DATE ➤						

DISTRIBUTION FOR FACILITY OPERATING LICENSE NO. DPR-69 DATED August 13, 1976

Docket File
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Local PDR
LWR #2 File*
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K. Kniel*
Project Manager
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*w/o tech specs



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

AUG 13 1976

Docket No. 50-318

Baltimore Gas and Electric Company
ATTN: Mr. John W. Gore, Jr.,
Vice President
Gas and Electric Building
Charles Center
Baltimore, Maryland 21203

Gentlemen:

ISSUANCE OF FACILITY OPERATING LICENSE FOR CALVERT CLIFFS NUCLEAR
POWER PLANT, UNIT 2

The Nuclear Regulatory Commission has issued the enclosed Facility Operating License No. DPR-69 and Technical Specifications (Appendices A and B), to the Baltimore Gas and Electric Company for the Calvert Cliffs Nuclear Power Plant, Unit 2, located in Calvert County, Maryland. A copy of the Notice of Issuance is enclosed.

As indicated in the enclosed documents entitled, "Negative Declaration Regarding Issuance of a Limited Facility License DPR-69, Calvert Cliffs Nuclear Power Plant, Unit No. 2" and "Environmental Impact Appraisal of Issuance of Fuel Loading, Criticality Low-Power Testing Operating License for Calvert Cliffs Nuclear Power Plant, Unit No. 2", the Commission has concluded that an environmental impact statement for this particular action is not warranted because there will be no environmental impact significantly affecting the quality of the human environment. Accordingly, Facility Operating License DPR-69 authorizes the Baltimore Gas and Electric Company to operate the Calvert Cliffs Nuclear Power Plant, Unit No. 2 at a reactor core power level of 25.6 megawatts thermal (one percent of the rated thermal power level of 2560 megawatts) for testing purposes. Facility Operating License DPR-69 is conditioned to provide a sequential approach to one percent of full power which takes into account a series of incomplete construction items, preoperational tests, startup tests and other items, and provides for further Commission approval at various stages of these activities.

The Office of Nuclear Reactor Regulation has issued Supplement No. 6 to the Safety Evaluation Report for the Calvert Cliffs Nuclear Plant, Unit 2. A copy is enclosed for your information.

Baltimore Gas and Electric
Company

- 2 -

AUG 13 1976

Two signed originals of Amendment No. 5 to Indemnity Agreement No. B-70, which covers the activities authorized under License No. DPR-69 are enclosed for your review and acceptance. Please sign and return one copy of Amendment No. 5 to this office.

Sincerely,



Karl Kniel, Chief
Light Water Reactors
Branch No. 2
Division of Project Management

Enclosures:

1. Facility Operating License
No. DPR-69 w/Technical
Specifications (Appendices A and B)
2. Federal Register Notice
3. Negative Declaration
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5. Safety Evaluation Report Supplement No. 6
6. Amendment No. 5 to Indemnity
Agreement No. B-70

cc: See page 3

Baltimore Gas and Electric - 3 -
Company

AUG 13 1976

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General Counsel
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James C. Cawood, Jr., Esq.
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State Department of Public Health
ATTN: State Health Officer
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Prince Frederick, Maryland 20678

Mr. Lee Bettenhausen, Ph.D.
Regional Health Physicist
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Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

FACILITY OPERATING LICENSE — LIMITED OPERATION FOR TESTING

License No. DPR-69

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The application for license filed by Baltimore Gas and Electric Company (the licensee) 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 and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Calvert Cliffs Nuclear Power Plant, Unit 2 (the facility) has been substantially completed in conformity with Provisional Construction Permit No. CPPR-64 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. The licensee is technically and financially qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;
 - F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this operating license will not be inimical to the common defense and security or to the health and safety of the public;

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- H. The issuance of Facility Operating License No. DPR-69 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 51, of the Commission's regulations and all applicable requirements have been satisfied; and
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70, including 10 CFR Sections 30.33, 40.32, 70.23 and 70.31.
11. Facility Operating License No. DPR-69 is hereby issued to the Baltimore Gas and Electric Company to read as follows:
- A. This license applies to the Calvert Cliffs Nuclear Power Plant, Unit 2, a pressurized water nuclear reactor and associated equipment (the facility), owned by the Baltimore Gas and Electric Company. The facility is located in Calvert County, Maryland, on the western shore of the Chesapeake Bay, about 10 and 1/2 miles southeast of Prince Frederick, Maryland, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 11 through 53) and the Environmental Report as supplemented and Amendment No. 1 thereto.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Baltimore Gas and Electric Company:
 - 1. Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in Calvert County, Maryland in accordance with the procedures and limitations set forth in this license;
 - 2. Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - 3. Pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

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- 4. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any by-product, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 - 5. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

1. Maximum Power Level

The licensee is authorized to operate the facility for testing at reactor core power levels not in excess of 25.6 megawatts (one percent of rated thermal power) limited to a cumulative fuel exposure of 300 megawatt days.

2. Technical Specifications

The Technical Specifications contained in Appendices A and B attached hereto are hereby incorporated in this license. The licensee shall operate the facility in accordance with the Technical Specifications except for the following specific exemptions:

- a. The licensee shall be exempted from compliance with the following Appendix A Technical Specifications applying to charcoal testing until (1) the first regularly scheduled refueling outage, or (2) the currently installed charcoal is replaced, whichever occurs first:

- 4.6.3.1.b.3
- 4.6.6.1.b.3
- 4.7.6.1.c.3
- 4.7.7.1.b.3
- 4.9.12.b.3

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3. Steam Generator Water Level Rise Rate

Except for the purpose of performing steam generator feed-water flow stability tests, the licensee shall, whenever the secondary side water level in a steam generator is below the level of the feedwater sparger, limit the secondary side water level rise rate in the steam generator to less than 1.2 inches per minute and shall reduce the rise rate to within this limit within two (2) minutes if this limit is exceeded. This condition shall be removed only by amendment of this license after the licensee has demonstrated to the satisfaction of the Commission that secondary side flow instability (water hammer) either will not occur, or does not result in unacceptable consequences.

4. LNG Traffic at Cove Point Terminal

The licensee shall provide one of the following items to the Commission 60 days prior to the initiation of LNG ship traffic at the Cove Point LNG Receiving Terminal:

- a. An analysis to show that the probability of an accident that could affect plant safety due to an LNG tanker approaching closer to the plant than the distances assumed in the safety analyses (discussed in Supplement No. 5 to the Safety Evaluation Report) is acceptably small, as defined in Section 2.2.3 of NUREG-75/087; or
- b. A commitment from the appropriate U. S. Coast Guard Port Authority that administrative limits will be imposed to prevent LNG traffic from approaching Calvert Cliffs Nuclear Plant closer than the distances assumed in the above-referenced analyses.

In addition, the licensee shall establish a mechanism whereby it will be promptly notified by the U. S. Coast Guard of abnormally dangerous occurrences involving LNG traffic in the vicinity of the Cove Point LNG Receiving Terminal.

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5. Incomplete Construction Items, Tests, and Other Items

This condition identifies certain construction items, pre-operational tests, startup tests and other items which shall be completed to the satisfaction of the Commission prior to (1) achieving certain specified operating conditions or (2) proceeding with operations beyond certain specified dates. The licensee shall neither operate the facility beyond the specified operating conditions, nor operate the facility after the specified dates without prior written authorization from the Commission. All items in this enclosure shall be conducted and/or completed in accordance with the applicable section(s) of the Final Safety Analysis Report, as approved in the Safety Evaluation Report and Supplements 1 through 6 to the Safety Evaluation Report.

- a. Prior to operation of the facility in MODE 5 (Cold Shutdown, as defined in Table 1.1 of Appendix A to this License), the pressurizer safety valves shall be installed to the satisfaction of the Commission.
- b. The following items shall be completed to the satisfaction of the Commission prior to operation of the facility in MODE 4 (Hot Shutdown, as defined in Table 1.1 of Appendix A to this license):
 - (1) Modification of the scale of the auxiliary feedwater flow indicators 2-FI-4509 and 4510.
 - (2) Modification of the control circuitry for 2-MOV-659 and 660, the mini-flow bypass valves, which are part of the safety injection system.
 - (3) Modification to provide protection from the accident environment for the controllers for the auxiliary feedwater flow control valves.
 - (4) Completion of installation of circuit to determine closing time of main steam isolation valves.
 - (5) Completion of test PO-44C (main steam isolation valves) by determining the closing times of the valves.
 - (6) Resolution of open items described in the Office of Inspection and Enforcement's Inspection Report Number 50-318/76-18, involving post-core hot functional test procedures, initial approach to criticality procedures, low power physics test procedures, and power ascension test procedures.

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- (7) Resolution of off-design bleed rate of shock suppressors on safety systems.
- (8) Resolution of startup test program conformance to Regulatory Guide 1.68.

c. The following items shall be completed to the satisfaction of the Commission prior to operation of the facility in MODE 2 (Startup, as defined in Table 1.1 of Appendix A to this License):

- (1) Modification of the instrument air supply to 2-CV-517, 518 and 519 to insure operability of these valves under post-LOCA conditions.
- (2) Modification of the actuator for 2-CV-517 to insure operability of this valve under post-LOCA conditions.
- (3) Completion of installation of steam generator blow-down recovery system.
- (4) Modification of the control circuitry for 2-MOV-614, 624, 634 and 644, valves which are part of the safety injection system.
- (5) The reinstallation, pressure testing and operational testing of the control element drive mechanisms (CEDMs).
- (6) Completion of test PO-31 (steam generator blowdown system).
- (7) Completion of test PO-40B (dual linear nuclear instrumentation).
- (8) Completion of test PO-41 (process and area radiation monitoring).
- (9) Completion of retesting of piping thermal expansion deficiencies noted during hot functional testing.
- (10) Installation of all incore flux detection instruments.

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- (11) Installation of modified temporary shield.
- (12) Justification for testing containment isolation valves with pressure applied in the reverse direction to that imposed by the accident condition.
- (13) Preparation and issuance of procedures for thermal monitoring of circulating water discharge.

d. The following items shall be completed to the satisfaction of the Commission prior to December 1, 1976:

- (1) The licensee shall provide upon request, records which demonstrate to the satisfaction of the Commission that selected Class IE electrical equipment has been environmentally qualified.

D. The licensee shall maintain in effect and fully implement all provisions of the Nuclear Regulatory Commission staff approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR Part 50.54(p). The approved security plan consists of proprietary documents (pursuant to 10 CFR 2.790), collectively titled "Security Plan - Calvert Cliffs Nuclear Power Plant - Baltimore Gas and Electric Company" as follows:

Revision 4 (complete revision) submitted under cover letter dated May 3, 1974, J. W. Gore, Jr., (BG&E) to L. M. Muntzing (AEC);

Revision 5 submitted under cover letter dated September 5, 1974, J. W. Gore, Jr., (BG&E) to E. Case (AEC);

Revision 6 submitted under cover letter dated June 5, 1975, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC); and

Criterion I, II, and III of enclosure (1) of letter dated July 7, 1976, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC).

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E. If harmful effects or evidence of irreversible damage are detected by the biological monitoring program, hydrological monitoring program, and the radiological monitoring program specified in the Appendix B Technical Specifications, the licensee will provide to the staff a detailed analysis of the problem and a program of remedial action to be taken promptly to eliminate or significantly reduce the detrimental effects or damage.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
Roger S. Boyd

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Attachment:
Appendices A and B -
Technical Specifications

Date of Issuance AUG 13 1976

(SEE PREVIOUS CONCURRENCES.)

OFFICE	LER 2	LWR 2	ELD	DPMDD	DPMDB	DSEE
SURNAME	JL:mt	HRood		RJ:Young	R:Boyd	DRMuller
DATE	8/13/76	8/13/76	8/ /76	8/13/76	8/13/76	8/13/76

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

FACILITY OPERATING LICENSE—LIMITED OPERATION FOR TESTING

License No. DPR-69

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The application for license filed by Baltimore Gas and Electric Company (the licensee) 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 and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Calvert Cliffs Nuclear Power Plant, Unit 2 (the facility) has been substantially completed in conformity with Provisional Construction Permit No. CPPR-64 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. The licensee is technically and financially qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;
 - F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this operating license will not be inimical to the common defense and security or to the health and safety of the public;

- H. The issuance of Facility Operating License No. DPR-69 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 51, of the Commission's regulations and all applicable requirements have been satisfied; and
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70, including 10 CFR Sections 30.33, 40.32, 70.23 and 70.31.
11. Facility Operating License No. DPR-69 is hereby issued to the Baltimore Gas and Electric Company to read as follows:
- A. This license applies to the Calvert Cliffs Nuclear Power Plant, Unit 2, a pressurized water nuclear reactor and associated equipment (the facility), owned by the Baltimore Gas and Electric Company. The facility is located in Calvert County, Maryland, on the western shore of the Chesapeake Bay, about 10 and 1/2 miles southeast of Prince Frederick, Maryland, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 11 through 53) and the Environmental Report as supplemented and Amendment No. 1 thereto.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Baltimore Gas and Electric Company:
 - 1. Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in Calvert County, Maryland in accordance with the procedures and limitations set forth in this license;
 - 2. Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - 3. Pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

4. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any by-product, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 5. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

1. Maximum Power Level

The licensee is authorized to operate the facility for testing at reactor core power levels not in excess of 25.6 megawatts (one percent of rated thermal power) limited to a cumulative fuel exposure of 300 megawatt days.

2. Technical Specifications

The Technical Specifications contained in Appendices A and B attached hereto are hereby incorporated in this license. The licensee shall operate the facility in accordance with the Technical Specifications except for the following specific exemptions:

- a. The licensee shall be exempted from compliance with the following Appendix A Technical Specifications applying to charcoal testing until (1) the first regularly scheduled refueling outage, or (2) the currently installed charcoal is replaced, whichever occurs first:

4.6.3.1.b.3
4.6.6.1.b.3
4.7.6.1.c.3
4.7.7.1.b.3
4.9.12.b.3

3. Steam Generator Water Level Rise Rate

Except for the purpose of performing steam generator feed-water flow stability tests, the licensee shall, whenever the secondary side water level in a steam generator is below the level of the feedwater sparger, limit the secondary side water level rise rate in the steam generator to less than 1.2 inches per minute and shall reduce the rise rate to within this limit within two (2) minutes if this limit is exceeded. This condition shall be removed only by amendment of this license after the licensee has demonstrated to the satisfaction of the Commission that secondary side flow instability (water hammer) either will not occur, or does not result in unacceptable consequences.

4. LNG Traffic at Cove Point Terminal

The licensee shall provide one of the following items to the Commission 60 days prior to the initiation of LNG ship traffic at the Cove Point LNG Receiving Terminal:

- a. An analysis to show that the probability of an accident that could affect plant safety due to an LNG tanker approaching closer to the plant than the distances assumed in the safety analyses (discussed in Supplement No. 5 to the Safety Evaluation Report) is acceptably small, as defined in Section 2.2.3 of NUREG-75/087; or
- b. A commitment from the appropriate U. S. Coast Guard Port Authority that administrative limits will be imposed to prevent LNG traffic from approaching Calvert Cliffs Nuclear Plant closer than the distances assumed in the above-referenced analyses.

In addition, the licensee shall establish a mechanism whereby it will be promptly notified by the U. S. Coast Guard of abnormally dangerous occurrences involving LNG traffic in the vicinity of the Cove Point LNG Receiving Terminal.

5. Incomplete Construction Items, Tests, and Other Items

This condition identifies certain construction items, pre-operational tests, startup tests and other items which shall be completed to the satisfaction of the Commission prior to (1) achieving certain specified operating conditions or (2) proceeding with operations beyond certain specified dates. The licensee shall neither operate the facility beyond the specified operating conditions, nor operate the facility after the specified dates without prior written authorization from the Commission. All items in this enclosure shall be conducted and/or completed in accordance with the applicable section(s) of the Final Safety Analysis Report, as approved in the Safety Evaluation Report and Supplements 1 through 6 to the Safety Evaluation Report.

- a. Prior to operation of the facility in MODE 5 (Cold Shutdown, as defined in Table 1.1 of Appendix A to this License), the pressurizer safety valves shall be installed to the satisfaction of the Commission.
- b. The following items shall be completed to the satisfaction of the Commission prior to operation of the facility in MODE 4 (Hot Shutdown, as defined in Table 1.1 of Appendix A to this license):
 - (1) Modification of the scale of the auxiliary feedwater flow indicators 2-FI-4509 and 4510.
 - (2) Modification of the control circuitry for 2-MOV-659 and 660, the mini-flow bypass valves, which are part of the safety injection system.
 - (3) Modification to provide protection from the accident environment for the controllers for the auxiliary feedwater flow control valves.
 - (4) Completion of installation of circuit to determine closing time of main steam isolation valves.
 - (5) Completion of test PO-44C (main steam isolation valves) by determining the closing times of the valves.
 - (6) Resolution of open items described in the Office of Inspection and Enforcement's Inspection Report Number 50-318/76-18, involving post-core hot functional test procedures, initial approach to criticality procedures, low power physics test procedures, and power ascension test procedures.

- (7) Resolution of off-design bleed rate of shock suppressors on safety systems.
 - (8) Resolution of startup test program conformance to Regulatory Guide 1.68.
- c. The following items shall be completed to the satisfaction of the Commission prior to operation of the facility in MODE 2 (Startup, as defined in Table 1.1 of Appendix A to this License):
- (1) Modification of the instrument air supply to 2-CV-517, 518 and 519 to insure operability of these valves under post-LOCA conditions.
 - (2) Modification of the actuator for 2-CV-517 to insure operability of this valve under post-LOCA conditions.
 - (3) Completion of installation of steam generator blow-down recovery system.
 - (4) Modification of the control circuitry for 2-MOV-614, 624, 634 and 644, valves which are part of the safety injection system.
 - (5) The reinstallation, pressure testing and operational testing of the control element drive mechanisms (CEDMs).
 - (6) Completion of test PO-31 (steam generator blowdown system).
 - (7) Completion of test PO-40B (dual linear nuclear instrumentation).
 - (8) Completion of test PO-41 (process and area radiation monitoring).
 - (9) Completion of retesting of piping thermal expansion deficiencies noted during hot functional testing.
 - (10) Installation of all incore flux detection instruments.

- (11) Installation of modified temporary shield.
 - (12) Justification for testing containment isolation valves with pressure applied in the reverse direction to that imposed by the accident condition.
 - (13) Preparation and issuance of procedures for thermal monitoring of circulating water discharge.
- d. The following items shall be completed to the satisfaction of the Commission prior to December 1, 1976:
- (1) The licensee shall provide upon request, records which demonstrate to the satisfaction of the Commission that selected Class IE electrical equipment has been environmentally qualified.
- D. The licensee shall maintain in effect and fully implement all provisions of the Nuclear Regulatory Commission staff approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR Part 50.54(p). The approved security plan consists of proprietary documents (pursuant to 10 CFR 2.790), collectively titled "Security Plan - Calvert Cliffs Nuclear Power Plant - Baltimore Gas and Electric Company" as follows:

Revision 4 (complete revision) submitted under cover letter dated May 3, 1974, J. W. Gore, Jr., (BG&E) to L. M. Muntzing (AEC);

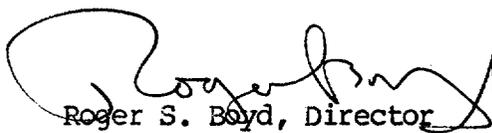
Revision 5 submitted under cover letter dated September 5, 1974, J. W. Gore, Jr., (BG&E) to E. Case (AEC);

Revision 6 submitted under cover letter dated June 5, 1975, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC); and

Criterion I, II, and III of enclosure (1) of letter dated July 7, 1976, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC).

- E. If harmful effects or evidence of irreversible damage are detected by the biological monitoring program, hydrological monitoring program, and the radiological monitoring program specified in the Appendix B Technical Specifications, the licensee will provide to the staff a detailed analysis of the problem and a program of remedial action to be taken promptly to eliminate or significantly reduce the detrimental effects or damage.

FOR THE NUCLEAR REGULATORY COMMISSION



Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Attachment:
Appendices A and B -
Technical Specifications

Date of Issuance AUG 13 1976

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-318

BALTIMORE GAS AND ELECTRIC COMPANY

CALVERT CLIFFS NUCLEAR PLANT, UNIT 2

NOTICE OF ISSUANCE OF A FACILITY OPERATING LICENSE

Notice is hereby given that the Nuclear Regulatory Commission (the Commission) has issued Facility Operating License No. DPR-69 to Baltimore Gas and Electric Company authorizing operation of the Calvert Cliffs Nuclear Plant, Unit 2 in accordance with the provisions of the license and the Technical Specifications. The Calvert Cliffs Nuclear Plant, Unit 2 is a pressurized water nuclear reactor located at the licensee's site in Calvert County, Maryland, about 10 and 1/2 miles southeast of Prince Frederick, Maryland.

The Commission has made appropriate findings regarding the environmental impact associated with issuing an operating license for testing purposes. These findings are contained in documents entitled "Negative Declaration Regarding Issuance of a Limited Facility License DPR-69, Calvert Cliffs Nuclear Power Plant, Unit 2" and "Environmental Impact Appraisal of Issuance of Fuel Loading, Criticality Low-Power Testing Operating License for Calvert Cliffs Nuclear Power Plant, Unit 2". Pursuant to the findings in these documents, Facility Operating License No. DPR-69 authorizes operation of the facility at a reactor core power level not to exceed 25.6 megawatts thermal for testing purposes. License No. DPR-69 is conditioned to provide a sequential approach to one percent power by accounting for a series of incomplete construction items,

prooperational tests, startup tests and other items which must be completed prior to attaining one percent power, and provides for further Commission approval at various stages of these activities.

The Commission has made appropriate findings as required by the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license. The application for the license complies with the standards and requirements of the Act and the Commission's rules and regulations.

A copy of (1) Facility Operating License No. DPR-69, complete with Technical Specifications (Appendices "A" and "B"); (2) the "Negative Declaration Regarding Issuance of a Limited Facility License DPR-69, Calvert Cliffs Nuclear Power Plant, Unit 2," (3) the Environmental Impact Appraisal of Issuance of Fuel Loading, Criticality Low-Power Testing Operating License for Calvert Cliffs Nuclear Power Plant, Unit 2," (4) the report of the Advisory Committee on Reactor Safeguards, dated January 14, 1974; (5) the Office of Nuclear Reactor Regulation's Safety Evaluation Report and Supplements 1, 2, 3, 4, 5 and 6 thereto, dated August 28, 1972, May 4, 1973, December 4, 1973, June 14, 1974, December 27, 1974, August 10, 1976, and August 13, 1976, respectively; (6) the Final Safety Analysis Report and amendments thereto; (7) the applicant's Environmental Report dated November 1970 and supplements thereto; (8) the Draft Environmental

Statement dated January 1972; and (9) the Final Environmental Statement dated April 1973, are available for public inspection at the Commission's Public Document Room at 1717 H Street, N. W., Washington, D. C. and the Calvert County Library, Prince Frederick, Maryland. Single copies of items (1), (2), (3), (4), (5) and (9) may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management.

Dated at Bethesda, Maryland, this 13th day of August, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION



R. C. DeYoung, Deputy Director
Division of Project Management
Office of Nuclear Reactor Regulation

NEGATIVE DECLARATION
REGARDING ISSUANCE OF
A LIMITED FACILITY LICENSE DPR-69
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2
DOCKET NO. 50-318

The U.S. Nuclear Regulatory Commission (the Commission) is issuing a limited Facility Operating License No. DPR-69 to Baltimore Gas and Electric Company, for authorizing certain operations of the Calvert Cliffs Nuclear Power Plant, Unit 2 located in Calvert County, Maryland.

The license would authorize operation of the facility at not more than 1 percent of full power for the purpose of testing the facility.

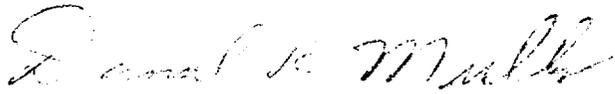
The Commission has prepared an environmental impact appraisal for the limited license and has concluded that an environmental impact statement for this particular action is not warranted because there will be no environmental impact significantly affecting the quality of the human environment.

The environmental impact appraisal is available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C., and at the Calvert Cliffs Library, Prince Frederick, Maryland 20678. A copy

may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Project Management.

Dated at Bethesda, Maryland, this 13th day of August, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, appearing to read "Daniel R. Muller".

Daniel R. Muller, Deputy Director
Division of Site Safety and
Environmental Analysis
Office of Nuclear Reactor Regulation

AUG 13 1976

Environmental Impact Appraisal
Of Issuance of Fuel Loading, Criticality And Low-Power
Testing Operating License for Calvert Cliffs Nuclear Power Plant Unit 2

1. Description of Proposed Actions

The action proposed is the issuance of an operating license for the Calvert Cliffs Nuclear Power Plant Unit 2 whereunder the licensee would be authorized to operate the facility at not more than 1 percent of full power for the purpose of testing the facility. Within the scope of this authorization, various alternative restrictions could be imposed, which would limit the generation of high level waste to pre-determined amounts, which are appraised to be of no significant environmental impact. These alternatives are:

- a. The loading of nuclear fuel into the reactor pressure vessel and the maintenance of the configuration in a non-critical, non-power-producing array. This operation, along with the reassembly of the reactor vessel components and the performance of precritical, preoperational tests, is expected to take 40 days.
- b. The completion of (a) above and operation of the reactor to achieve criticality to verify the reactivity status of the core components at very low power levels (in the order of 10^{-4} of full power). This operation is expected to take one day.
- c. The completion of (a) and (b) above plus the operation of the reactor at power levels not to exceed 1 percent of full power for the purpose of performing physics testing. Operation would be limited such that the total power generation would not produce significant high level waste nor foreclose alternative use of the fuel by generation of significant fission product or activation product radioactivity. Tests to be performed would take about 3 days.

Of these alternatives, alternative c, with a limitation of 300 MW days integrated power generation, is proposed to provide utilization of the already constructed facility for the purpose of checkout and testing operations without the generation of significant high level waste. Although the duration of fuel loading and testing is expected to be about six weeks, the discovery of problems, which is the purpose of such testing, may result in a prolonged testing period. In any event, the limitation of 300 MW days integrated power generation would be in effect. The proposed action would allow the completion of operations, which are necessary prior to full power operation and would thus allow full power operation to commence earlier than would otherwise be the case if such authorization was not granted. Further, this proposed action would not commit the reactor

fuel to be processed in the event further operations were not authorized for, as will be discussed in Section 2, fuel radiation levels and heat generation rates subsequent to the proposed operation will allow transport and use in other facilities where power operation is authorized. Therefore, no additional commitment of high level waste would be incurred.

2. Environmental Impacts of the Proposed Actions

The potential environmental impacts associated with this proposed action are a small fraction of those which have been fully described and found acceptable in the Final Environmental Statement dated April 1973. The impacts associated with waste management and chemical reprocessing are specifically described below. The other environmental impacts associated with this proposed action are also extremely limited. During the authorized activity the condenser cooling water system may be operated fully. This may result in the chemical and mechanical effects discussed at Section V and XII of the FES. For the short period of testing operation authorized by this license the low concentration of chemical effluents from these facilities will have an insignificant effect on the ecology of the river. The stresses imposed by passage through the plant intake screens and through the cooling system, at a time when the cooling system will have little or no added heat, will have no significant effect on the aquatic ecology. During this limited testing small amounts of steam may be routed from the steam generator through the condenser cooling system. The principle source of heat during this operation will be that associated with operation of the reactor pumps. However, this amounts to less than two percent of the total heat rejected during full power operation. This quantity of heat would result in less than one degree F increase in temperature of the full cooling system flow or a proportional amount of a lesser flow. The radiological inventory accumulated during the authorized testing is extremely limited and no fuel clad damage is anticipated that could result in any significant release of radioactivity to the environment. No other environmental impacts are associated with the limited testing authorized by this license. On this basis we conclude that all such impacts are insignificant.

The issue of chemical reprocessing, the quantities of high-level waste generated, and an assessment of their environmental impact for each of the alternatives discussed above follows for the Calvert Cliffs Nuclear Power Plant Unit 2:

- a. Fuel loading, pre-critical testing, and criticality testing - the operations of fuel loading, pre-critical testing, and criticality testing are performed with the reactor operating at source level power (10^{-6} of full power) or at criticality power levels (self-sustaining nuclear reaction at 10^{-4} of full power). If the fuel were exposed to these levels of operation for 2 months and 1 week, respectively, the cumulative generation of high level waste would be equivalent to that generated in less than 0.001 full power day of operation. This is equivalent to the high level waste which is contained in 0.0003 cubic foot of solidified high level waste, which is part of the reprocessing effluent.
- b. Testing at power levels not to exceed 1 percent of full power - for the performance of physics testing at very low power levels (commonly called "zero" power testing), the operation would be limited to 1 percent of full power and a cumulative fuel exposure of 300 MW days. Such operation would produce a cumulative generation of high level waste equivalent to about 0.1 full power day of operation which is the amount contained in 0.03 cubic foot of solidified high level waste.

Although the commitment of high level waste by the proposed operation is negligible in comparison with those wastes already generated and accruing, this commitment in itself is not irretrievable. The proposed operation would result in low heat generation rates and radiation levels, several months subsequent to the operation, such that the fuel could be transported to another facility with minimal cooling and shielding provisions. The fuel could then be utilized in currently licensed operating reactors. Therefore, no environmental impacts associated with chemical reprocessing are attributable to the action proposed here. Since the fuel to be used in Calvert Cliffs Unit No. 2 is authorized for use in Calvert Cliffs Unit No. 1, no environmental impacts associated with the transportation of fuel are attributable to this action.

- c. Impact of proposed operations - the proposed operations would generate high level waste equivalent to about 0.1 full power day of operation. Plants already licensed for operation are capable of generating about 500 times this amount of waste each day. Thus, the quantity of high level waste generated as a result of the proposed action represents a small fraction of the waste being generated in the 58 nuclear power plants currently licensed to operate.

A staff analysis has been made of the cost of delay in the issuance of operating licenses for 10 nuclear plants scheduled to go into operation in the period of 1976 through 1978. The increased cost of fuel when electrical energy is supplied from fossil plants instead of the nuclear plant, normalized to a 1000 MWe plant, is on the average about \$4 million for each month of delay. The staff has not considered the increased cost of interest associated with construction capitalization since this cost during the short term is not a part of the rate base but is carried solely by company shareholders. However, the staff estimates that this cost averages about \$2.5 million per month of delay.

The fuel cost figure may be low in that it does not take account of increases in the costs of operation and maintenance when older fossil plants are called into service, and increases in costs due to inflation during the period of the delay. In fact, Baltimore Gas and Electric has indicated that the differences in fuel cost only will be \$300,000 per day or about \$9 million per month.

The potential cost savings attributable to the minimum time saving of 6 weeks allowed by proposed action is conservatively estimated by the staff to be \$6 million and by the applicant to be \$13.5 million.

3. Conclusions and Basis for Negative Declaration

On the basis of the foregoing analysis, it is concluded that:

- a. the potential environmental impacts associated with the proposed action do not significantly affect the quality of the human environment;
- b. the potential environmental impacts associated with the quantities of high-level waste, which will be generated as a result of the proposed action, do not represent an irreversible and irretrievable commitment of resources in that fuel from Calvert Cliffs Unit No. 2 could and can be utilized in currently licensed Calvert Cliffs Unit No. 1;
- c. the small increment of waste generated as a result of the proposed action will not foreclose alternatives for adequately addressing and analyzing the environmental impacts associated with reprocessing and waste management, attributable to the licensing of Calvert Cliffs Nuclear Power Plant Unit 2; and

Having made these conclusions, the Commission has further concluded that no environmental impact statement for the proposed action need to be prepared and that a negative declaration to this effect is appropriate.

A staff analysis has been made of the cost of delay in the issuance of operating licenses for 10 nuclear plants scheduled to go into operation in the period of 1976 through 1978. The increased cost of fuel when electrical energy is supplied from fossil plants instead of the nuclear plant, normalized to a 1000 MWe plant, is on the average about \$4 million for each month of delay. The staff has not considered the increased cost of interest associated with construction capitalization since this cost during the short term is not a part of the rate base but is carried solely by company shareholders. However, the staff estimates that this cost averages about \$2.5 million per month of delay.

The fuel cost figure may be low in that it does not take account of increases in the costs of operation and maintenance when older fossil plants are called into service, and increases in costs due to inflation during the period of the delay. In fact, Baltimore Gas and Electric has indicated that the differences in fuel cost only will be \$300,000 per day or about \$9 million per month.

The potential cost savings attributable to the minimum time saving of 6 weeks allowed by proposed action is conservatively estimated by the staff to be \$6 million and by the applicant to be \$13.5 million.

3. Conclusions and Basis for Negative Declaration

On the basis of the foregoing analysis, it is concluded that:

- a. the potential environmental impacts associated with the proposed action do not significantly affect the quality of the human environment;
- b. the potential environmental impacts associated with the quantities of high-level waste, which will be generated as a result of the proposed action, do not represent an irreversible and irretrievable commitment of resources in that fuel from Calvert Cliffs Unit No. 2 could and can be utilized in currently licensed Calvert Cliffs Unit No. 1;
- c. the small increment of waste generated as a result of the proposed action will not foreclose alternatives for adequately addressing and analyzing the environmental impacts associated with reprocessing and waste management, attributable to the licensing of Calvert Cliffs Nuclear Power Plant Unit 2; and
- d. ~~the potential environmental impacts of the proposed action are a small fraction of those which have been fully described and found acceptable in the Final Environmental Statement for Calvert Cliffs Nuclear Power Plant Unit 2 dated April 1973.~~

Having made these conclusions, the Commission has further concluded that no environmental impact statement for the proposed action need to be prepared and that a negative declaration to this effect is appropriate.

DSEE

ELD

DM
8/13/76

YPL
8/13/76

August 13, 1976

SUPPLEMENT NO. 6
TO THE
SAFETY EVALUATION REPORT
BY THE
OFFICE OF NUCLEAR
REACTOR REGULATION
U. S. NUCLEAR REGULATORY COMMISSION
IN THE MATTER OF
BALTIMORE GAS AND ELECTRIC COMPANY
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2
DOCKET NO. 50-318

In Supplement No. 5 to the Safety Evaluation Report, we identified four items that would be reported upon subsequently. These items were (1) protection against reactor coolant system overpressurization, (2) environmental qualification of Class IE electrical equipment, (3) the emergency core cooling system performance analysis, and (4) compliance with Appendix I to 10 CFR Part 50.

It is now proposed that an operating license be issued for Calvert Cliffs Nuclear Power Plant, Unit 2 (Calvert Cliffs Unit No. 2) whereunder the licensee would be authorized to operate the facility at not more than 1 percent of full power for the purpose of testing the facility. The integrated power generation would be limited to 300 megawatt days.

At this time, our review of the four items listed above is continuing. However, we have evaluated the safety implications of the proposed licensing action, and we conclude that issuance of a 1 percent license limited to an integrated power generation of 300 megawatt days is acceptable, prior to completion of our review of the above items, because of the very small fission product inventory (e.g., the iodine inventory would be approximately one percent of that at full power) that would exist under the conditions authorized by the license. This small fission product inventory limits the potential consequences of an accident to the extent that the proposed licensing action will not jeopardize the health and safety of the public.



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

Docket Nos. 50-317
and 50-318

AMENDMENT TO INDEMNITY AGREEMENT NO. B-70

AMENDMENT NO. 5

Effective AUG 13 1976, Indemnity Agreement No. B-70, between Baltimore Gas and Electric Company, and the Atomic Energy Commission, dated August 23, 1973, as amended, is hereby further amended as follows:

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3 - License number of numbers

SNM-1364 (From 12:01 a.m., August 23, 1973, to
12 midnight, July 30, 1974,
inclusive)
DPR-53 (From 12:01 a.m., July 31, 1974)
SNM-1624 (From 12:01 a.m., May 18, 1976, to
12 midnight, AUG 12 1976,
inclusive)
DPR-69 (From 12:01 a.m., AUG 13 1976)

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

Jerome Saltzman, Chief
Antitrust & Indemnity Group
Nuclear Reactor Regulation

Accepted _____, 1976

By _____
BALTIMORE GAS & ELECTRIC COMPANY

Docket No. 50-516

Baltimore Gas and Electric Company
ATTN: Mr. John W. Gore, Jr.,
Vice President
Gas and Electric Building
Charles Center
Baltimore, Maryland 21203

Gentlemen:

ISSUANCE OF FACILITY OPERATING LICENSE FOR CALVERT CLIFFS NUCLEAR
POWER PLANT, UNIT 2

The Nuclear Regulatory Commission has issued the enclosed Facility Operating License No. DPR-69 and Technical Specifications (Appendices A and B), to the Baltimore Gas and Electric Company for the Calvert Cliffs Nuclear Power Plant, Unit 2, located in Calvert County, Maryland. A copy of the Notice of Issuance is enclosed.

Although the operating license ultimately authorizes operation at 2560 thermal megawatts, the license is conditioned to provide a sequential approach to full power which takes into account a series of incomplete construction items, preoperational tests, startup tests and other items, and provides for further Commission approval at various stages of these activities. In addition, License No. DPR-69 limits initial power operation to one percent of the rated core thermal power pending a Commission policy decision regarding the evaluation of the environmental impact of nuclear waste storage and disposal.

The Office of Nuclear Reactor Regulation has issued Supplement No. 5 to the Safety Evaluation Report for the Calvert Cliffs Nuclear Power Plant, Unit 2. A copy is enclosed for your information.

Two signed originals of Amendment No. 5 to Indemnity Agreement No. B-70, which covers the activities authorized under License No. DPR-69 are enclosed for your review and acceptance. Please sign and return one copy of Amendment No. 5 to this office.

Sincerely,

Karl Kniel, Chief

Light Water Reactors Branch No. 2
Division of Project Management

OFFICE →					
SURNAME →	Enclosures & CCS:				
DATE →	See next page				

Baltimore Gas and Electric - 2 -
Company

Enclosures:

1. Facility Operating License
No. DPR-69 w/Technical
Specifications (Appendices A and B)
2. Federal Register Notice
3. Safety Evaluation Report, Supplement No. 6
4. Amendment No. 5 to Indemnity
Agreement No. B-70

cc: Mr. James A. Bladison, Jr.
General Counsel
Gas and Electric Building
Charles Center
Baltimore, Maryland 21203

James C. Cawood, Jr., Esq.
Vice President
Chesapeake Environmental
Protection Association
4700 Auth Place
Camp Springs, Maryland 20023

George F. Trowbridge, Esq.
Shaw, Pittman, Potts & Trowbridge
910 17th Street, N. W.
Washington, D. C. 20006

Mr. R. L. Ashley
Chief Nuclear Engineer
Bechtel Power Corporation
P. O. Box 607
Galthersburg, Maryland 20760

Mr. J. A. Honey
Project Manager
Combustion Engineering, Inc.
P. O. Box 500
Windsor, Connecticut 06095

Dr. Steven Long
Power Plant Siting Program
Department of Natural Resources
B-3, Pawes
State office Building
Annapolis, Maryland 21401

State Department of Public Health
ATTN: State Health Officer
State Office Building
Montgomery, Alabama 36104

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

Mr. Lee Bettenhausen, Ph.D.
Regional Health Physicist
U. S. Environmental Protection Agency
Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106

SEE PREVIOUS CONCURRENCES.

OFFICE >	LWR 2	LWR 2	ELD	DPM:DD	DPM:DIR	
SURNAME >	Jes:jt	HRood		RCDeYoung	RSBoyd	
DATE >	8/13/76	8/ /76	8/ /76	8/ /76	8/ /76	

Docket No. 50-318

Baltimore Gas and Electric Company
ATTN: Mr. John W. Gore, Jr.,
Vice President
Gas and Electric Building
Charles Center
Baltimore, Maryland 21203

Distribution
LWR #2 File
NRC PDR
Local PDR
Docket
OELD
RCDeYoung
HSmith/JLee
FWilliams
BScott
IE (3)
NDube
MJinks (2)
WMiller
ACRS (16)
KKniel
VMoore

RHeineman
AToalson
BScharf (15)
DSkovholt
EHughes
HBristow
KGoller
DEisenhut
JGill
MSlater
GKnighton
TIC
NSIC
IDinitz
RSBoyd
HRood
JSaltzman

Gentlemen:

The Nuclear Regulatory Commission has issued the enclosed Facility Operating License No. DPR-69 and Technical Specifications (Appendices A and B), to the Baltimore Gas and Electric Company for the Calvert Cliffs Nuclear Power Plant, Unit 2, located in Calvert County, Maryland.

The Calvert Cliffs Nuclear Power Plant, Unit 2 is designed for operation at 2560 megawatts thermal, but in accordance with the provisions of Facility Operating License No. DPR-69 and the Technical Specifications appended thereto, activities under the license are restricted to operation not in excess of five percent of 2560 thermal megawatts (rated thermal power). This license shall expire one year from the date of issuance unless extended for good cause or upon earlier issuance of a subsequent licensing action.

A copy of a related notice, which is being forwarded to the Office of the Federal Register for publication, is enclosed for your information.

Two signed originals of Amendment No. 5 to Indemnity Agreement No. B-70, which covers the activities authorized under License No. DPR-69 are enclosed for your review and acceptance. Please sign and return one copy of Amendment No. 5 to this office.

Sincerely,

Karl Kniel, Chief
Light Water Reactors Branch No. 2
Division of Project Management

Enclosures and ccs:

See next page

OFFICE →	DPM:LWR #2	ELD	DSSE	JSaltzman	DPM:DD	DPM
SURNAME →	KKniel			JSaltzman	RCDeYoung	RSBoyd
DATE →	7/28/76	7/28/76	7/30/76	7/28/76	7/1/76	7/1/76

Baltimore Gas and Electric - 2 -
Company

Enclosures:

1. Facility Operating License
No. DPR-69 w/Technical
Specifications (Appendices A and B)
2. Federal Register Notice
3. Amendment No. 5 to Indemnity
Agreement No. B-70

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

James C. Cawood, Jr., Esq.
Vice President
Chesapeake Environmental
Protection Association
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Camp Springs, Maryland 20023

George F. Trowbridge, Esq.
Shaw, Pittman, Potts & Trowbridge
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Mr. R. L. Ashley
Chief Nuclear Engineer
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Gaithersburg, Maryland 20760

Mr. J. A. Honey
Project Manager
Combustion Engineering, Inc.
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Windsor, Connecticut 06095

Dr. Steven Long
Power Plant Siting Program
Department of Natural Resources
B-3, Paves
State office Building
Annapolis, Maryland 21401

Mr. Warren D. Hodges, Director
Department of State Planning
301 West Preston Street
Baltimore, Maryland 21201

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

Mr. Lee Bettenhausen, Ph.D.
Regional Health Physicist
U. S. Environmental Protection Agency
Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106

OFFICE ➤						
SURNAME ➤						
DATE ➤						

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

FACILITY OPERATING LICENSE

License No. DPR-69

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The application for license filed by Baltimore Gas and Electric Company (the licensee) 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 and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Calvert Cliffs Nuclear Power Plant, Unit 2 (the facility) has been substantially completed in conformity with Provisional Construction Permit No. CPPR-64 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. The licensee is technically and financially qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;
 - F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this operating license will not be inimical to the common defense and security or to the health and safety of the public;

OFFICE >						
SURNAME >						
DATE >						

- H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Facility Operating License No. DPR-69 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 51, (and with former Appendix D to 10 CFR Part 50) of the Commission's regulations and all applicable requirements have been satisfied; and
- I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70, including 10 CFR Sections 30.33, 40.32, 70.23 and 70.31.
- 11. Facility Operating License No. DPR-69 is hereby issued to the Baltimore Gas and Electric Company to read as follows:
 - A. This license applies to the Calvert Cliffs Nuclear Power Plant, Unit 2, a pressurized water nuclear reactor and associated equipment (the facility), owned by the Baltimore Gas and Electric Company. The facility is located in Calvert County, Maryland, on the western shore of the Chesapeake Bay, about 10 and 1/2 miles southeast of Prince Frederick, Maryland, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 11 through 53) and the Environmental Report as supplemented and Amendment No. 1 thereto.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Baltimore Gas and Electric Company:
 - 1. Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in Calvert County, Maryland in accordance with the procedures and limitations set forth in this license;
 - 2. Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - 3. Pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

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- 4. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any by-product, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 - 5. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

1. Maximum Power Level

The licensee is authorized to operate the facility for testing at reactor core power levels not in excess of 25.6 megawatts (10% of rated thermal power) limited to a cumulative fuel exposure of 300 megawatt days.

2. Technical Specifications

The Technical Specifications contained in Appendices A and B attached hereto are hereby incorporated in this license. The licensee shall operate the facility in accordance with the Technical Specifications except for the following specific exemptions:

- a. The licensee shall be exempted from compliance with the following Appendix A Technical Specifications applying to charcoal testing until (1) the first regularly scheduled refueling outage, or (2) the currently installed charcoal is replaced, whichever occurs first:

- 4.6.3.1.b.3
- 4.6.6.1.b.3
- 4.7.6.1.c.3
- 4.7.7.1.b.3
- 4.9.12.b.3

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3. Steam Generator Water Level Rise Rate

Except for the purpose of performing steam generator feed-water flow stability tests, the licensee shall, whenever the secondary side water level in a steam generator is below the level of the feedwater sparger, limit the secondary side water level rise rate in the steam generator to less than 1.2 inches per minute and shall reduce the rise rate to within this limit within two (2) minutes if this limit is exceeded. This condition shall be removed only by amendment of this license after the licensee has demonstrated to the satisfaction of the Commission that secondary side flow instability (water hammer) either will not occur, or does not result in unacceptable consequences.

4. LNG Traffic at Cove Point Terminal

The licensee shall provide one of the following items to the Commission 60 days prior to the initiation of LNG ship traffic at the Cove Point LNG Receiving Terminal:

- a. An analysis to show that the probability of an accident that could affect plant safety due to an LNG tanker approaching closer to the plant than the distances assumed in the safety analyses (discussed in Supplement No. 5 to the Safety Evaluation Report) is acceptably small, as defined in Section 2.2.3 of NUREG-75/087; or
- b. A commitment from the appropriate U. S. Coast Guard Port Authority that administrative limits will be imposed to prevent LNG traffic from approaching Calvert Cliffs Nuclear Plant closer than the distances assumed in the above-referenced analyses.

In addition, the licensee shall establish a mechanism whereby it will be promptly notified by the U. S. Coast Guard of abnormally dangerous occurrences involving LNG traffic in the vicinity of the Cove Point LNG Receiving Terminal.

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5. Incomplete Construction Items, Tests, and Other Items

This condition identifies certain construction items, pre-operational tests, startup tests and other items which shall be completed to the satisfaction of the Commission prior to (1) achieving certain specified operating conditions or (2) proceeding with operations beyond certain specified dates. The licensee shall neither operate the facility beyond the specified operating conditions, nor operate the facility after the specified dates without prior written authorization from the Commission. All items in this enclosure shall be conducted and/or completed in accordance with the applicable section(s) of the Final Safety Analysis Report, as approved in the Safety Evaluation Report and Supplements 1 through 6 to the Safety Evaluation Report.

a. Prior to operation of the facility in MODE 5 (Cold Shutdown, as defined in Table 1.1 of Appendix A to this License), the pressurizer safety valves shall be installed to the satisfaction of the Commission.

b. The following items shall be completed to the satisfaction of the Commission prior to operation of the facility in MODE 4 (Hot Shutdown, as defined in Table 1.1 of Appendix A to this license):

- (1) Modification of the scale of the auxiliary feedwater flow indicators 2-FI-4509 and 4510.
- (2) Modification of the control circuitry for 2-MOV-659 and 660, the mini-flow bypass valves, which are part of the safety injection system.
- (3) Modification to provide protection from the accident environment for the controllers for the auxiliary feedwater flow control valves.
- (4) Completion of installation of circuit to determine closing time of main steam isolation valves.
- (5) Completion of test PO-44C (main steam isolation valves) by determining the closing times of the valves.
- (6) Resolution of open items described in the Office of Inspection and Enforcement's Inspection Report Number 50-318/76-18, involving post-core hot functional test procedures, initial approach to criticality procedures, low power physics test procedures, and power ascension test procedures.

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- (7) Resolution of off-design bleed rate of shock suppressors on safety systems.
- (8) Resolution of startup test program conformance to Regulatory Guide 1.68.

c. The following items shall be completed to the satisfaction of the Commission prior to operation of the facility in MODE 2 (Startup, as defined in Table 1.1 of Appendix A to this License):

- (1) Modification of the instrument air supply to 2-CV-517, 518 and 519 to insure operability of these valves under post-LOCA conditions.
- (2) Modification of the actuator for 2-CV-517 to insure operability of this valve under post-LOCA conditions.
- (3) Completion of installation of steam generator blow-down recovery system.
- (4) Modification of the control circuitry for 2-MOV-614, 624, 634 and 644, valves which are part of the safety injection system.
- (5) The reinstallation, pressure testing and operational testing of the control element drive mechanisms (CEDMs).
- (6) Completion of test PO-31 (steam generator blowdown system).
- (7) Completion of test PO-40B (dual linear nuclear instrumentation).
- (8) Completion of test PO-41 (process and area radiation monitoring).
- (9) Completion of retesting of piping thermal expansion deficiencies noted during hot functional testing.
- (10) Installation of all incore flux detection instruments.

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- (11) Installation of modified temporary shield.
- (12) Justification for testing containment isolation valves with pressure applied in the reverse direction to that imposed by the accident condition.
- (13) Preparation and issuance of procedures for thermal monitoring of circulating water discharge.

d. The following items shall be completed to the satisfaction of the Commission prior to December 1, 1976:

- (1) The licensee shall provide upon request, records which demonstrate to the satisfaction of the Commission that selected Class IE electrical equipment has been environmentally qualified.

D. The licensee shall maintain in effect and fully implement all provisions of the Nuclear Regulatory Commission staff approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR Part 50.54(p). The approved security plan consists of proprietary documents (pursuant to 10 CFR 2.790), collectively titled "Security Plan - Calvert Cliffs Nuclear Power Plant - Baltimore Gas and Electric Company" as follows:

Revision 4 (complete revision) submitted under cover letter dated May 3, 1974, J. W. Gore, Jr., (BG&E) to L. M. Muntzing (AEC);

Revision 5 submitted under cover letter dated September 5, 1974, J. W. Gore, Jr., (BG&E) to E. Case (AEC);

Revision 6 submitted under cover letter dated June 5, 1975, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC); and

Criterion I, II, and III of enclosure (1) of letter dated July 7, 1976, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC).

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E. If harmful effects or evidence of irreversible damage are detected by the biological monitoring program, hydrological monitoring program, and the radiological monitoring program specified in the Appendix B Technical Specifications, the licensee will provide to the staff a detailed analysis of the problem and a program of remedial action to be taken promptly to eliminate or significantly reduce the detrimental effects or damage.

FOR THE NUCLEAR REGULATORY COMMISSION

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Attachment:
Appendices A and B -
Technical Specifications

Date of Issuance

SEE PREVIOUS CONCURRENCES

OFFICE ➤	LWR 2	LWR 2	ELD	LWR	DPM	
SURNAME ➤	JLee	HRood		RCDeYoung	RSBoyd	
DATE ➤	8/ /76	8/ /76	8/ /76	8/ /76	8/ /76	

Revision 4 (complete revision) submitted under cover letter dated May 3, 1974, J. W. Gore, Jr., (BG&E) to L. M. Muntzing (AEC);

Revision 5 submitted under cover letter dated September 5, 1974, J. W. Gore, Jr., (BG&E) to E. Case (AEC);

Revision 6 submitted under cover letter dated June 5, 1975, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC); and

Criterion I, II, and III of enclosure (I) of letter dated July 7, 1976, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC).

- E. If harmful effects or evidence of irreversible damage are detected by the biological monitoring program, hydrological monitoring program, and the radiological monitoring program specified in the Appendix B Technical Specifications, the licensee will provide to the staff a detailed analysis of the problem and a program of remedial action to be taken promptly to eliminate or significantly reduce the detrimental effects or damage.
- F. This license is effective as of the date of issuance and shall expire one year from said date, unless extended for good cause shown, or upon earlier issuance of a subsequent licensing action.

FOR THE NUCLEAR REGULATORY COMMISSION

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Attachment:
Appendices A and B -
Technical Specifications

Date of Issuance

SEE ATTACHED YELLOW FOR PREVIOUS CONCURRENCES - EDITORIAL CHANGES & CHANGES TO RADIOLICAL CONDITIONS

OFFICE	LWR 2 HR	ELD	DPM:DD	DPM:DIR	
SURNAME	JLee:mjf		RCDeYoung	RSBoyd	
DATE	7/30/76	7/76	1/76	1/76	

3. Less Than Four Pump Operation

The licensee shall not operate the reactor at power levels in excess of five (5) percent of rated thermal power with less than four (4) reactor coolant pumps in operation. This condition shall remain in effect until the licensee has submitted safety analyses for less than four pump operation, and approval for such operation has been granted by the Commission by amendment of this license.

4. Steam Generator Water Level Rise Rate

Except for the purpose of performing steam generator feedwater flow stability tests, the licensee shall, whenever the secondary side water level in a steam generator is below the level of the feedwater sparger, limit the secondary side water level rise rate in the steam generator to less than 1.2 inches per minute and shall reduce the rise rate to within this limit within two (2) minutes if this limit is exceeded. This condition shall be removed only by amendment of this license after the licensee has demonstrated to the satisfaction of the Commission that secondary side flow instability (water hammer) either will not occur, or does not result in unacceptable consequences.

5. Incomplete Construction Items, Tests, and Other Items

This condition identifies certain construction items, pre-operational tests, startup tests and other items which shall be completed to the satisfaction of the Commission prior to (1) achieving certain specified operating conditions or (2) proceeding with operations beyond certain specified dates. The licensee shall neither operate the facility beyond the specified operating conditions, nor operate the facility after the specified dates without prior written authorization from the Commission. All items in this enclosure shall be conducted and/or completed in accordance with the applicable section(s) of the Final Safety Analysis Report, as approved in the Safety Evaluation Report and Supplements 1 through 5 to the Safety Evaluation Report.

- a. Prior to operation of the plant in MODE 5 (Cold Shutdown, as defined in Table 1.1 of Appendix A to this License), the pressurizer safety valves shall be installed to the satisfaction of the Commission.

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b. The following items shall be completed to the satisfaction of the Commission prior to operation of the plant in MODE 4 (Hot Shutdown, as defined in Table 1.1 of Appendix A to this license):

- (1) Modification of scale of the auxiliary feedwater flow indicators 2-FI-4509 and 4510.
- (2) Modification of the control circuitry for 2-MOV-659 and 660 valves, which are part of the safety injection system.
- (3) Modification to provide protection from the accident environment for the controllers for the auxiliary feedwater flow control valves.
- (4) Completion of test PO-44C (main steam isolation valves) by determining the closing times of the valves.

c. The following items shall be completed to the satisfaction of the Commission prior to operation of the plant in MODE 2 (Startup, as defined in Table 1.1 of Appendix A to this License):

- (1) Modification of the instrument air supply to 2-CV-517, 518 and 519 to insure operability of these valves under post-LOCA conditions.
- (2) Modification of the actuator for 2-CV-517 to insure operability of this valve under post-LOCA conditions.
- (3) Modification of the piping for 2-RE-1752, an instrument which monitors the radioactivity in the discharge from the condenser air removal system.
- (4) Modification of the control circuitry for 2-MOV-614, 624, 634 and 644, valves which are part of the safety injection system.
- (5) The reinstallation, pressure testing and operational testing of the control element drive mechanisms (CEDMs).
- (6) Completion of test PO-31 (steam generator blowdown system).

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- (7) Completion of test PO-40A (wide range nuclear instrumentation).
- (8) Completion of test PO-41 (process and area radiation monitoring).
- d. The following items shall be completed to the satisfaction of the Commission prior to December 1, 1976:
 - (1) The licensee shall provide upon request, records which demonstrate to the satisfaction of the Commission that selected Class 1E electrical equipment has been environmentally qualified.
- e. The following items shall be completed to the satisfaction of the Commission prior to the initiation of LNG ship traffic at the Cove Point LNG Receiving Terminal:
 - (1) The licensee shall provide at least one of the following:
 - (a) An analysis to show that the probability of an accident that could affect plant safety due to an LNG tanker approaching closer to the plant than the distances assumed in the safety analyses (discussed in Supplement No. 5 to the Safety Evaluation Report) is sufficiently small; or
 - (b) A commitment from the appropriate U. S. Coast Guard Port Authority that administrative limits will be imposed to prevent LNG traffic from approaching Calvert Cliffs Nuclear Plant closer than the distances assumed in the above-referenced analyses.
 - (2) The licensee shall establish a mechanism whereby it will be promptly notified by the U. S. Coast Guard of abnormally dangerous occurrences involving LNG traffic in the vicinity of the Cove Point LNG Receiving Terminal.
- f. The following items shall be completed to the satisfaction of the Commission prior to startup following the first regularly scheduled refueling outage:
 - (1) A permanent shield shall be installed to reduce, to acceptable levels, neutron streaming from the annular gap between the reactor vessel and the reactor cavity.

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(2) A permanent means of protecting against reactor coolant system overpressurization while water-solid shall be installed.

D. The licensee shall maintain in effect and fully implement all provisions of the Nuclear Regulatory Commission staff approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR Part 50.54(p). The approved security plan consists of proprietary documents (pursuant to 10 CFR 2.790), collectively titled "Security Plan - Calvert Cliffs Nuclear Power Plant - Baltimore Gas and Electric Company" as follows:

Revision 4 (complete revision) submitted under cover letter dated May 3, 1974, J. W. Gore, Jr., (BG&E) to L. M. Muntzing (AEC);

Revision 5 submitted under cover letter dated September 5, 1974, J. W. Gore, Jr., (BG&E) to E. Case (AEC);

Revision 6 submitted under cover letter dated June 5, 1975, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC); and

Criterion I, II, and III of enclosure (I) of letter dated July 7, 1976, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC).

E. If harmful effects or evidence of irreversible damage are detected by the biological monitoring program, hydrological monitoring program, and/or the radiological monitoring program specified in the Appendix B Technical Specifications, the licensee will provide to the staff a detailed analysis of the problem and a program of remedial action to be taken promptly to eliminate or significantly reduce the detrimental effects or damage.

F. This license is effective as of the date of issuance and shall expire one year from said date, unless extended for good cause shown, or upon earlier issuance of a subsequent licensing action.

FOR THE NUCLEAR REGULATORY COMMISSION

Roger S. Boyd, Director
 Division of Project Management
 Office of Nuclear Reactor Regulation

Attachment:
 Appendices A and B -

DPM:LWR #2
 JLee:mjf
 7/27/76

DPM:LWR #2
 HRood HR
 7/27/76

DPM:LWR #2
 KKniel KK
 7/28/76

OFFICE >	Technical Specifications	DSEE	OAT	ELD	DPM:DD	DPM
DATE of Issuance	JAM Gore	JSalzman			RCDeYoung	RSBoyd
SURNAME >	7/27/76	7/27/76	7/1/76	7/1/76	7/1/76	7/1/76
DATE >						

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

FACILITY OPERATING LICENSE

License No. DPR-69

1. The Nuclear Regulatory Commission (the Commission) having found that:
- A. The application for license filed by Baltimore Gas and Electric Company (the licensee) 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 and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Calvert Cliffs Nuclear Power Plant, Unit 2 (the facility) has been substantially completed in conformity with Provisional Construction Permit No. CPPR-64 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. The licensee is technically and financially qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;
 - F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this operating license will not be inimical to the common defense and security or to the health and safety of the public;

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- H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Facility Operating License No. DPR 69 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 51, (and with former Appendix D to 10 CFR Part 50) of the Commission's regulations and all applicable requirements have been satisfied; and
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70, including 10 CFR Sections 30.53, 40.32, 70.23 and 70.31.
- II. Facility Operating License No. DPR-69 is hereby issued to the Baltimore Gas and Electric Company to read as follows:
- A. This license applies to the Calvert Cliffs Nuclear Power Plant, Unit 2, a pressurized water nuclear reactor and associated equipment (the facility), owned by the Baltimore Gas and Electric Company. The facility is located in Calvert County, Maryland, on the western shore of the Chesapeake Bay, about 10 and 1/2 miles southeast of Prince Frederick, Maryland, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 11 through 53) and the Environmental Report as supplemented and Amendment No. 1 thereto.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Baltimore Gas and Electric Company:
 - 1. Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in Calvert County, Maryland in accordance with the procedures and limitations set forth in this license;
 - 2. Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - 3. Pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts

as required;

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- 4. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any by-product, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
- 5. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter 1: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

1. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of five (5) percent of 2560 thermal megawatts (rated thermal power). This condition precludes operation in MODE 1 (Power Operation, as defined in Table 1.1 of Appendix A to this license).

2. Technical Specifications

The Technical Specifications contained in Appendices A and B attached hereto are hereby incorporated in this license. The licensee shall operate the facility in accordance with the Technical Specifications except for the following specific exemptions:

- a. The licensee shall be exempted from compliance with the following Appendix A Technical Specifications applying to charcoal testing until (1) the first regularly scheduled refueling outage, or (2) the currently installed charcoal is replaced, whichever occurs first:

- 4.6.3.1.b.3
- 4.6.6.1.b.3
- 4.7.6.1.c.3
- 4.7.7.1.b.3
- 4.9.12.b.3

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3. Less Than Four Pump Operation

The licensee shall not operate the reactor at power levels in excess of five (5) percent of rated thermal power with less than four (4) reactor coolant pumps in operation. This condition shall remain in effect until the licensee has submitted safety analyses for less than four pump operation, and approval for such operation has been granted by the Commission by amendment of this license.

4. Steam Generator Water Level Rise Rate

Except for the purpose of performing steam generator feedwater flow stability tests, the licensee shall, whenever the secondary side water level in a steam generator is below the level of the feedwater sparger, limit the secondary side water level rise rate in the steam generator to less than 1.2 inches per minute and shall reduce the rise rate to within this limit within two (2) minutes if this limit is exceeded. This condition shall be removed only by amendment of this license after the licensee has demonstrated to the satisfaction of the Commission that secondary side flow instability (water hammer) either will not occur, or does not result in unacceptable consequences.

5. LNG Traffic at Cove Point Terminal

The licensee shall provide one of the following items to the Commission 60 days prior to the initiation of LNG ship traffic at the Cove Point LNG Receiving Terminal:

- a. An analysis to show that the probability of an accident that could affect plant safety due to an LNG tanker approaching closer to the plant than the distances assumed in the safety analyses (discussed in Supplement No. 5 to the Safety Evaluation Report) is acceptably small, as defined in Section 2.2.3 of NUREG-75/087; or
- b. A commitment from the appropriate U. S. Coast Guard Port Authority that administrative limits will be imposed to prevent LNG traffic from approaching Calvert Cliffs Nuclear Plant closer than the distances assumed in the above-referenced analyses.

In addition, the licensee shall establish a mechanism whereby it will be promptly notified by the U. S. Coast Guard of abnormally dangerous occurrences involving LNG traffic in the vicinity of the Cove Point LNG Receiving Terminal.

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6. Incomplete Construction Items, Tests, and Other Items

This condition identifies certain construction items, pre-operational tests, startup tests and other items which shall be completed to the satisfaction of the Commission prior to (1) achieving certain specified operating conditions or (2) proceeding with operations beyond certain specified dates. The licensee shall neither operate the facility beyond the specified operating conditions, nor operate the facility after the specified dates without prior written authorization from the Commission. All items in this enclosure shall be conducted and/or completed in accordance with the applicable section(s) of the Final Safety Analysis Report, as approved in the Safety Evaluation Report and Supplements 1 through 5 to the Safety Evaluation Report.

- a. Prior to operation of the plant in MODE 5 (Cold Shutdown, as defined in Table 1.1 of Appendix A to this License), the pressurizer safety valves shall be installed to the satisfaction of the Commission.
- b. The following items shall be completed to the satisfaction of the Commission prior to operation of the plant in MODE 4 (Hot Shutdown, as defined in Table 1.1 of Appendix A to this license):
 - (1) Modification of the scale of the auxiliary feedwater flow indicators 2-FI-4509 and 4510.
 - (2) Modification of the control circuitry for 2-MOV-659 and 660, the mini-flow bypass valves, which are part of the safety injection system.
 - (3) Modification to provide protection from the accident environment for the controllers for the auxiliary feedwater flow control valves.
 - (4) Completion of installation of circuit to determine closing time of main steam isolation valves.
 - (5) Completion of test PO-44C (main steam isolation valves) by determining the closing times of the valves.
 - (6) Resolution of open items described in the Office of Inspection and Enforcement's Inspection Report Number 50-318/76-18, involving post-core hot functional test procedures, initial approach to criticality procedures, low power physics test procedures, and power ascension test procedures.

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c. The following items shall be completed to the satisfaction of the Commission prior to operation of the plant in MODE 2 (Startup, as defined in Table I.1 of Appendix A to this License):

- (1) Modification of the instrument air supply to 2-CV-517, 518 and 519 to insure operability of these valves under post-LOCA conditions.
- (2) Modification of the actuator for 2-CV-517 to insure operability of this valve under post-LOCA conditions.
- (3) Modification of the piping for 2-RE-1752, an instrument which monitors the radioactivity in the discharge from the condenser air removal system.
- (4) Completion of installation of steam generator blow-down recovery system.
- (5) Modification of the control circuitry for 2-MOV-614, 624, 634 and 644, valves which are part of the safety injection system.
- (6) The reinstallation, pressure testing and operational testing of the control element drive mechanisms (CEDMs).
- (7) Completion of test P0-31 (steam generator blowdown system).
- (8) Completion of test P0-40B (dual linear nuclear instrumentation).
- (9) Completion of test P0-41 (process and area radiation monitoring).
- (10) Completion of retesting of piping thermal expansion deficiencies noted during hot functional testing.

d. The following items shall be completed to the satisfaction of the Commission prior to December 1, 1976:

- (1) The licensee shall provide upon request, records which demonstrate to the satisfaction of the Commission that selected Class IE electrical equipment has been environmentally qualified.

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e. The following items shall be completed to the satisfaction of the Commission prior to startup following the first regularly scheduled refueling outage:

- (1) A permanent shield shall be installed to reduce, to acceptable levels, neutron streaming from the annular gap between the reactor vessel and the reactor cavity.
- (2) A permanent means of protecting against reactor coolant system overpressurization while water-solid shall be installed. Prior to installation of the permanent overpressurization protection, the following procedural controls will be implemented:

(a) When in cold shutdown with water-solid conditions:

- (i) The high pressure safety injection pumps will be tagged out of service and their breakers racked out.
- (ii) The pressurizer heaters will be tagged out of service and their breakers racked out (except when drawing the steam bubble).
- (iii) The high pressure safety injection header stop valves (2-MOV-654 and 656) will be shut, tagged out of service, and their breakers locked open.
- (iv) When the plant computer is operable, a computer high pressure alarm will be established below the maximum allowable technical specification pressure limit for existing reactor coolant temperatures.

(b) When cooling down to cold shutdown conditions, the steam generators will be cooled down to at least 220°F prior to initiating shutdown cooling.

D. The licensee shall maintain in effect and fully implement all provisions of the Nuclear Regulatory Commission staff approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR Part 50.54(p). The approved security plan consists of proprietary documents (pursuant to 10 CFR 2.790), collectively titled "Security Plan - Calvert Cliffs Nuclear Power Plant - Baltimore Gas and Electric Company" as follows:

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DATE ➤						