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Docket No. 50-317 ✓
50-318

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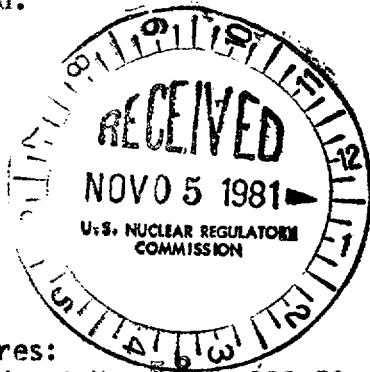
Mr. A. E. Lundvall, Jr.
Vice President - Supply
Baltimore Gas & Electric Company
P.O. Box 1475
Baltimore, Maryland 21203

Dear Mr. Lundvall:

The Commission has issued the enclosed Amendment Nos. 58 and 40 to Facility Operating License Nos. DPR-53 and DPR-69 for Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your applications dated June 27, 1980 and July 20, 1981.

The amendments revise the Technical Specifications (1) to allow the use of an installed 69 kV offsite power source in place of a required 500 kV offsite power source; (2) provide for use of an installed "reserve battery" as a part of the safety related 125-volt D.C. power system; (3) provide for modification of the required remedial action associated with the decrease in the single cell voltages of the safety related 125-volt D.C. batteries; and (4) provide for modifications of the existing Limiting Condition for Operation associated with the battery chargers.

Copies of our Safety Evaluation and the Notice of Issuance are also enclosed.



Sincerely,

Original signed by:

David H. Jaffe, Project Manager
Operating Reactors Branch #3
Division of Licensing

Enclosures:

1. Amendment No. 58 to DPR-53
2. Amendment No. 40 to DPR-69
3. Safety Evaluation
4. Notice of Issuance

cc w/enclosures:
See next page

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OFFICE	ORB#3:DL	ORB#3:DL	ORB#3:DL	AD:OR:JL	OELD	
SURNAME	PMKreutzer	DJaffe	RAClark	TNovak		
DATE	10/21/81	10/21/81	10/21/81	10/21/81	10/23/81	

FR Notice processed

Baltimore Gas and Electric Company

cc:

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Baltimore, MD 21203

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Combustion Engineering, Inc.
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Public Document Room
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Director, Department of State Planning
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Calvert County Board of County Commissioners
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U. S. Environmental Protection Agency
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Mr. R. E. Denton, General Supervisor
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cc w/enclosure(s) and incoming
dated: 6/27/81, 7/20/81
Administrator, Power Plant Siting Program
Energy and Coastal Zone Administration
Department of Natural Resources
Tawes State Office Building
Annapolis, MD 21204



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

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 58
License No. DPR-53

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Baltimore Gas & Electric Company (the licensee) dated June 27, 1980 and July 20, 1981, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the applications, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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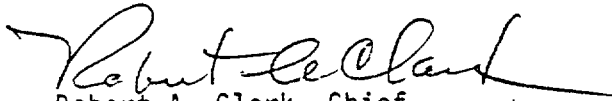
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-53 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 58, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION


Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the
Technical Specifications

Date of Issuance: November 2, 1981

ATTACHMENT TO LICENSE AMENDMENT NO. 58

FACILITY OPERATING LICENSE NO. DPR-53

DOCKET NO. 50-317

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

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3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A. C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators (one of which may be a swing diesel generator capable of serving either Unit 1 or Unit 2) each with:
 1. Separate day fuel tanks containing a minimum volume of 375 gallons of fuel,
 2. A common fuel storage system consisting of two independent storage tanks each containing a minimum volume of 18,250 gallons of fuel, and
 3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one 500 Kv offsite circuit or diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.4 within one hour and at least once per 8 hours thereafter; restore at least two offsite circuits* and two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 500 Kv offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.4 within one hour and at least once per 8 hours thereafter; restore at least one of the inoperable sources* to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*The 69 Kv SMECo offsite power circuit described in the January 14, 1977 Safety Evaluation may be substituted for one 500 Kv offsite power circuit.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

- c. With two of the 500 Kv above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within one hour at least once per 8 hours thereafter, unless the diesel generators are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, restore at least two offsite circuits* to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two diesel generators to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each independent circuit between the offsite transmission network and the onsite Class 1E distribution* system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring (manually and automatically) unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

*The 69 Kv SMECo offsite power circuits described in the January 14, 1977 Safety Evaluation may be substituted for one 500 Kv offsite power circuit.

ELECTRICAL POWER SYSTEMS:

A.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized from sources of power other than a diesel generator but aligned to an OPERABLE diesel generator:

- 1 - 4160 volt Emergency Bus
- 1 - 480 volt Emergency Bus
- 2 - 120 volt A.C. Vital Busses

APPLICABILITY: MODES 5 and 6

ACTION:

With less than the above complement of A.C. busses OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources other than the diesel generators at least once per 7 days by verifying correct breaker alignment and indicated power availability.

ELECTRICAL POWER SYSTEMS

D. C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D. C. bus trains shall be energized and OPERABLE:

- a. 125-volt D.C. bus No. 11, a 125-volt D. C. battery bank and a full capacity charger.
- b. 125-volt ~~D.C.~~ bus No. 12, a 125-volt D. C. battery bank and a full capacity charger.
- c. 125-volt D.C. bus No. 21, a 125-volt D. C. battery bank and a full capacity charger.
- d. 125-volt D.C. bus No. 22, a 125-volt D. C. battery bank and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one 125-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 125-volt D.C. battery inoperable except during surveillance testing per specifications 4.8.2.3.2.c.2, 4.8.2.3.2.d and 4.8.2.3.2.e:
 1. Restore the inoperable battery to OPERABLE status within 2 hours, or replace the inoperable battery with the OPERABLE Reserve Battery within the next 2 hours, or
 2. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With both 125-volt D.C. battery chargers from the same D.C. bus inoperable, restore at least one 125-volt D.C. battery charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With one 125-volt D.C. battery inoperable during surveillance testing of the battery per Specification 4.8.2.3.2.c.2 and 4.8.2.3.2.d, operation may continue provided the associated bus is being powered by an operable charger.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

- e. With one 125-volt D.C. battery inoperable during surveillance testing of the battery per Specification 4.8.2.3.2.e., operation may continue provided the associated bus is being powered by the Reserve Battery and an OPERABLE charger.
- f. With single cells having a voltage decrease of more than 0.10 volts from the previous performance discharge test (4.8.2.3.2.e.) value, but still ≥ 2.10 volts per surveillance requirement 4.8.2.3.2.b.1., either restore/replace cells or replace the affected battery with the Reserve Battery within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability:

4.8.2.3.2 Each 125-volt battery bank and charger and the Reserve Battery shall be demonstrated OPERABLE;

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

- 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks.
- 2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level is ≥ 1.200 .
- 3. The pilot cell voltage is ≥ 2.10 volts.
- 4. The overall battery voltage is ≥ 125 volts.

b. At least once per 92 days by verifying that:

- 1. The voltage of each connected cell is ≥ 2.10 volts under float charge and has not decreased more than 0.10 volts from the value observed during the latest performance discharge test (4.8.2.3.2.e).
- 2. The specific gravity, corrected to 77°F and full electrolyte level, of each connected cell is ≥ 1.200 and has not decreased more than 0.02 from the value observed during the previous test.
- 3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or deterioration.
 2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

- d. At least once per 18 months by verifying that the battery capacity, with the charger disconnected, is adequate to either:

1. Supply and maintain in OPERABLE status all of the actual emergency loads for at least 2 hours when the battery is subjected to a battery service test, or
2. Supply a dummy load of the following profile for at least 2 hours while maintaining the battery terminal voltage \geq 100 volts:

- a) Batteries 11 and 21:

First minute \geq 827 amperes
Next 1 minute \geq 461 amperes
Next 117 minutes \geq 251 amperes
Next 1 minute \geq 325 amperes

- b) Batteries 12 and 22:

First minute \geq 193 amperes
Next 119 minutes \geq 160 amperes

At the completion of this battery test, the battery charger* shall be demonstrated capable of recharging the battery at a rate of \leq 400 amperes while supplying normal D. C. loads. The battery shall be charged to at least 95% capacity in \leq 24 hours.

- e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test shall be performed subsequent to the satisfactory completion of the required battery service test.

*Not applicable to the charger associated with the Reserve Battery.



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

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 40
License No. DPR-69

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Baltimore Gas & Electric Company (the licensee) dated June 27, 1980 and July 20, 1981, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the applications, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

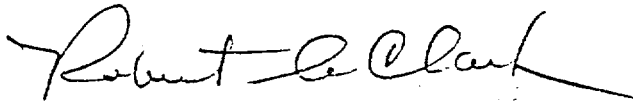
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-69 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 40, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the
Technical Specifications

Date of Issuance: November 2, 1981

ATTACHMENT TO LICENSE AMENDMENT NO. 40

FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NO. 50-318

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

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3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A. C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators (one of which may be a swing diesel generator capable of serving either Unit 1 or Unit 2) each with:
 1. Separate day fuel tanks containing a minimum volume of 375 gallons of fuel,
 2. A common fuel storage system consisting of two independent storage tanks each containing a minimum volume of 18,250 gallons of fuel, and
 3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one 500 Kv offsite circuit or diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.4 within one hour and at least once per 8 hours thereafter; restore at least two offsite circuits* and two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 500 Kv offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.4 within one hour and at least once per 8 hours thereafter; restore at least one of the inoperable sources* to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*The 69 Kv SMECo offsite power circuit described in the January 14, 1977 Safety Evaluation may be substituted for one 500 Kv offsite power circuit.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

- c. With two of the 500 Kv above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within one hour at least once per 8 hours thereafter, unless the diesel generators are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, restore at least two offsite circuits* to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two diesel generators to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each independent circuit between the offsite transmission network and the onsite Class 1E distribution* system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring (manually and automatically) unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

*The 69 Kv SMECo offsite power circuits described in the January 14, 1977 Safety Evaluation may be substituted for one 500 Kv offsite power circuit.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized from sources of power other than a diesel generator but aligned to an OPERABLE diesel generator:

- 1 - 4160 volt Emergency Bus
- 1 - 480 volt Emergency Bus
- 2 - 120 volt A.C. Vital Busses

APPLICABILITY: MODES 5 and 6

ACTION:

With less than the above complement of A.C. busses OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources other than the diesel generators at least once per 7 days by verifying correct breaker alignment and indicated power availability.

ELECTRICAL POWER SYSTEMS

D. C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D. C. bus trains shall be energized and OPERABLE:

- a. 125-volt D.C. bus No. 11, a 125-volt D. C. battery bank and a full capacity charger.
- b. 125-volt D.C. bus No. 12, a 125-volt D. C. battery bank and a full capacity charger.
- c. 125-volt D.C. bus No. 21, a 125-volt D. C. battery bank and a full capacity charger.
- d. 125-volt D.C. bus No. 22, a 125-volt D. C. battery bank and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one 125-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 125-volt D.C. battery inoperable except during surveillance testing per specifications 4.8.2.3.2.c.2, 4.8.2.3.2.d and 4.8.2.3.2.e:
 1. Restore the inoperable battery to OPERABLE status within 2 hours, or replace the inoperable battery with the OPERABLE Reserve Battery within the next 2 hours, or
 2. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With both 125-volt D.C. battery chargers from the same D.C. bus inoperable, restore at least one 125-volt D.C. battery charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With one 125-volt D.C. battery inoperable during surveillance testing of the battery per Specification 4.8.2.3.2.c.2 and 4.8.2.3.2.d, operation may continue provided the associated bus is being powered by an operable charger.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

- e. With one 125-volt D.C. battery inoperable during surveillance testing of the battery per Specification 4.8.2.3.2.e., operation may continue provided the associated bus is being powered by the Reserve Battery and an OPERABLE charger.
- f. With single cells having a voltage decrease of more than 0.10 volts from the previous performance discharge test (4.8.2.3.2.e.) value, but still ≥ 2.10 volts per surveillance requirement 4.8.2.3.2.b.1., either restore/replace cells or replace the affected battery with the Reserve Battery within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.3.2 Each 125-volt battery bank and charger and the Reserve Battery shall be demonstrated OPERABLE;

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

- 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks.
- 2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level is ≥ 1.200 .
- 3. The pilot cell voltage is ≥ 2.10 volts.
- 4. The overall battery voltage is ≥ 125 volts.

b. At least once per 92 days by verifying that:

- 1. The voltage of each connected cell is ≥ 2.10 volts under float charge and has not decreased more than 0.10 volts from the value observed during the latest performance discharge test (4.8.2.3.2.e).
- 2. The specific gravity, corrected to 77°F and full electrolyte level, of each connected cell is ≥ 1.200 and has not decreased more than 0.02 from the value observed during the previous test.
- 3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.

ELECTRICAL POWER SYSTEMS -

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months by verifying that:
 - 1. The cells, cell plates and battery racks show no visual indication of physical damage or deterioration.
 - 2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

- d. At least once per 18 months by verifying that the battery capacity, with the charger disconnected, is adequate to either:
 - 1. Supply and maintain in OPERABLE status all of the actual emergency loads for at least 2 hours when the battery is subjected to a battery service test, or
 - 2. Supply a dummy load of the following profile for at least 2 hours while maintaining the battery terminal voltage ≥ 100 volts:
 - a) Batteries 11 and 21:
First minute ≥ 827 amperes
Next 1 minute ≥ 461 amperes
Next 117 minutes ≥ 251 amperes
Next 1 minute ≥ 325 amperes
 - b) Batteries 12 and 22:
First minute ≥ 193 amperes
Next 119 minutes ≥ 160 amperes

At the completion of this battery test, the battery charger* shall be demonstrated capable of recharging the battery at a rate of ≤ 400 amperes while supplying normal D. C. loads. The battery shall be charged to at least 95% capacity in ≤ 24 hours.

- e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test shall be performed subsequent to the satisfactory completion of the required battery service test.

*Not applicable to the charger associated with the Reserve Battery.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 58 AND 40 TO

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

BALTIMORE GAS AND ELECTRIC COMPANY

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT NOS. 1 & 2

DOCKET NOS. 50-317 AND 50-318

Introduction

By application dated June 27, 1980¹, Baltimore Gas and Electric Company (BG&E) requested changes to the Technical Specifications (TS) for Calvert Cliffs Units 1 and 2 in order to allow the use of an installed 69 kV offsite power source in place of a required 500 kV offsite power source. In addition, by application dated July 20, 1981² BG&E requested changes to the TS for Calvert Cliffs Units 1 and 2 to provide for: (1) use of an installed "reserve battery" as a part of the safety related 125-volt D.C. power system, (2) modification of the required remedial action associated with the decrease in the single cell voltages of the safety-related 125-volt D.C. batteries and (3) modification of the existing Limiting Conditions for Operation associated with the battery chargers. The safety and environmental issues associated with the June 27, 1980 and July 20, 1981 applications for license amendment are considered herein.

In the course of reviewing the June 27, 1980 and July 20, 1981 applications, we have found it necessary to make changes in the Technical Specifications that were proposed by BG&E. These changes were discussed with, and approved by, representatives of BG&E.

Discussion and Evaluation

The issues associated with the June 27, 1980 and July 20, 1981 applications are considered, separately, below.

Limiting Conditions for Operation and Surveillance Requirements for the 69 kV (SMECO) Power Source - Application dated June 27, 1980.

On January 14, 1977³, the NRC issued Amendment Nos. 19 and 5 for Calvert Cliffs Units 1 and 2, respectively. These license amendments approved the installation and use of a 69 kV offsite power source owned by Southern Maryland Electric Cooperative (SMECO). Limiting Conditions for Operation (LCO's) and Surveillance Requirements (SR's) for the SMECO line were not considered at that time.

By application dated June 27, 1980, BG&E proposed LCO's for use of the SMECO line as a preferred source of offsite A.C. electrical power. Specifically,

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BG&E proposed that the SMECO line be permitted to be used as a substitute for one, preferred, 500 kV, offsite power, circuit in action statements a., b., and c. for Calvert Cliffs Units 1 and 2 Technical Specification 3.8.1.1. In this regard, our safety evaluation of January 14, 1977 concluded that the SMECO line meets our requirements for use as an independent, preferred, source of offsite electrical power as stated in General Design criterion 17, Appendix A to 10 CFR Part 50.

Although no SR's were proposed by BG&E for the SMECO offsite electrical power source, BG&E has committed to perform the following surveillance:

- (1) within one hour of use of the SMECO power source in place of a 500 kV offsite power source; and at least every 8 hours thereafter during use, perform SR 4.8.1.1.1a (availability and proper breaker alignment).
- (2) at least every 18 months, perform SR 4.8.1.1.1b (manual and automatic power supply transfer).

The above tests are also presently applicable to the preferred, 500 kV, offsite power sources. Based upon our findings contained in Amendments Nos. 19 and 5 for Calvert Cliffs Units 1 and 2, dated January 14, 1977 we concluded that the SMECO power source met our requirements for use as a preferred offsite power source. Furthermore, based upon our evaluation of the proposed Technical Specifications, substitution of the SMECO power source for a single preferred, 500kV, offsite, power source, does not decrease the availability of the offsite power sources for Calvert Cliffs Units 1 and 2.

In the course of our review of Technical Specifications associated with A.C. power sources, we have found that existing Calvert Cliffs Units 1 and 2 Technical Specification 3.8.1.1b requires clarification. This specification addresses operability of diesel generators including "...a swing diesel generator capable of serving both Unit 1 and Unit 2..." The design of the Calvert Cliffs onsite A.C. power distribution incorporates 3 diesel generators. Diesel generators 11 and 21 may each supply power to two (one for each unit) of four 4160 volt engineered safety features buses. Diesel generator 12, the "swing diesel", may supply power to any of the four 4160 volt engineered safety features buses but only one bus at any given time.

The statement in Technical Specification 3.8.1.1b, that the swing diesel is capable of serving both Unit 1 and Unit 2 might be incorrectly interpreted to mean that the swing diesel can supply more than one of the four 4160 volt engineered safety feature buses, simultaneously. Accordingly, the phrase "...serving both Unit 1 and Unit 2..." should be changed to "serving either Unit 1 or Unit 2". This change does not impact the requirements on operability or surveillance of the diesel generators but rather clarifies the function and capabilities of the swing diesel.

Limiting Conditions for Operation and Surveillance Requirements for the Station Reserve Battery, Battery Chargers, and Single Cell Voltage

By application dated July 20, 1981, BG&E requested changes to the Calvert Cliffs Unit 1 and Unit 2 Technical Specifications on the subjects of the "Reserve Battery", single cell voltage, and Limiting Conditions for Operation associated with the 125-volt D.C. battery chargers.

On July 31, 1979⁴ The NRC issued Amendments Nos. 40 and 22 to the Facility Operating Licenses for Calvert Cliffs Units 1 and 2, respectively. These license amendments provided Technical Specifications for use of a temporary "Reserve Battery" to allow battery capacity testing during operation of Calvert Cliffs Units 1 and 2. At the time of issuance of Amendments Nos. 40 and 22, the fully qualified "safety grade" reserve battery was seated on a 1/2 inch thick plywood and 1/4 inch thick rubber mat directly on the turbine deck, and enclosed by a temporary barrier. The temporary cables from the battery to its 1200 ampere disconnect switch were routed above a drop ceiling until they dropped into the permanent conduit. All switching equipment was located in the cable spreading room where the existing DC switchgear is located. Subsequent modifications were undertaken to locate the reserve battery in a permanent location. The application for license amendment, dated July 20, 1981, requests Technical Specification changes that would allow the reserve battery to be used as a replacement for any of the 4, 125-volt D.C. station batteries, on an unrestricted basis.

In our Safety Evaluation in support of Amendments 40 and 22, we concluded that the reserve battery and associated interconnections were fully "safety grade". Accordingly, we herein address only those issues associated with permanent installation and use of the reserve battery.

The reserve battery is located in a cubicle situated in the Auxiliary Building. The fire rating of the room is 3 hours and, as such, is equivalent or superior to that of the other 125-volt D.C. (existing) batteries at Calvert Cliffs. Both existing and reserve batteries are mounted on corrosion-resistant, earthquake-proof racks suitable for use during design basis earthquake accelerations. The batteries are located in a Seismic Class I structure and each battery is located in a separate room.

The battery rooms share a ventilation system consisting of one supply duct, one exhaust duct, one battery room supply fan, and one battery room exhaust fan. The two fans are associated with redundant load groups. Upon loss of either fan, sufficient ventilation is provided by the remaining fan to preclude the possibility of hydrogen accumulation within the battery rooms.

Access for battery hookup is via cabinets located in the Unit 1 and Unit 2 cable spreading rooms. Hookup cables, to connect the reserve battery to one of the four 125-volt D.C. busses, are available in a protected storage location where other safety-related equipment is kept.

The licensee has performed seismic scoping calculations and has determined that the hookup cables will not be dislodged by the design basis seismic event. With regard to use of the battery, we have reviewed the procedure for use of the reserve battery, STP-M-550. We conclude that sufficient administrative controls exist to ensure proper use of the reserve battery. In this regard, it should be noted that the reserve battery is equipped with a single non-safety grade battery charger. Administrative controls prevent the use of this battery charger on a 125-volt D.C. bus.

The proposed Technical Specifications for use of the reserve battery are contained in Calvert Cliffs Units 1 and 2 Technical Specification 3.8.2.3 which governs overall operability of the 125-volt D.C. power system. At the present time, if a 125-volt D.C. battery is inoperable (except for reasons due to surveillance testing), the battery must be made operable within 2 hours or the plant must be in hot standby in six hours and in cold shutdown within the following 30 hours. The proposed Technical Specification 3.8.2.3, action statement b., would allow an additional 2 hours for hookup of the reserve battery, in the event of inoperability of a 125-volt D.C. battery. Experience has shown that the proposed four hour period is sufficient for diagnosis of battery inoperability and subsequent hookup of the reserve battery. Moreover, it is unlikely that the 125-volt D.C. power system will be challenged to perform its safety function in the 4 hours permitted for battery diagnosis and subsequent hookup of the reserve battery. A second proposed change to Technical Specification 3.8.2.3, action statement e., addresses the use of reserve battery during surveillance testing. The term "temporary battery" had been previously used in the Technical Specifications to reflect the temporary nature of the battery installation. The term "reserve battery" is now proposed for use in substitution for "temporary battery". This change has no effect on the requirements contained in Technical Specification 3.8.2.3, action statement e., and is appropriate in that it more clearly reflects the permanent nature of the reserve battery installation.

Based upon the above information regarding the reserve battery, we find that the reserve battery installation provides protection for the reserve battery that is equivalent to the existing 125-volt D.C. battery installations at Calvert Cliffs. Moreover, the proposed Technical Specifications allow sufficient time to hookup the reserve battery without significantly degrading the 125-volt D.C. power supply system. Since the reserve battery is subject to the same surveillance required of the existing batteries, specifically Technical Specification 4.8.2.3.2, there is a high degree of assurance that the reserve battery can perform its safety function, if required.

With regard to the status of the 125-volt D.C. battery chargers, an inconsistency presently exists in Calvert Cliffs Units 1 and 2 Technical Specifications 3.8.2.3, action statement b. Each of the 4 125-volt D.C. buses is powered by a 125-volt D.C. battery and serviced by 2 full-capacity, safety-grade, battery chargers. While Technical Specification 3.8.2.3 requires that only 1 full capacity charger is required to be operable per bus, Technical Specification 3.8.2.3, action statement b. requires that remedial action be taken when a single battery charger becomes inoperable,

even if the second battery charger is operable. Thus, we find that "credit" is not given for the presence of the second charger on each of the 4 125-volt D.C. buses. Accordingly, it is appropriate to change Technical Specification 3.8.2.3, action statement b. to require remedial action to be taken only if both 125-volt D.C. battery chargers, on a 125-volt D.C. bus, are inoperable. Since the remedial action to be taken has not changed, the availability of the 125-volt D.C. system, to perform its safety function, has not been changed. The new action statement becomes item "c".

The final issue addressed herein involves the single cell voltages associated with the 125-volt D.C. batteries. Each 125-volt battery contains approximately 59 lead-acid cells electrically connected in series so as to establish a nominal 125-volt power supply. Experience at Calvert Cliffs has shown that, over a period of years, single cell voltages tend to decrease as a result of various electro-chemical effects. At the present time, Calvert Cliffs Units 1 and 2 Technical Specification 4.8.2.3.2.b.1 requires that:

"The voltage of each connected cell is > 2.10 volts under float charge and has not decreased more than 0.10 volts from the value observed during the original acceptance test."

The licensee has found that a cell whose voltage is > 2.10 volts but has decreased more than 0.10 volts from its original acceptance (new) condition is still viable in that it can perform its design function and, in some cases, can be recharged to a substantial degree. By referencing the 0.10 volt criteria to the 60 month performance discharge test, Technical Specification 4.8.2.3.2.e, rather than the original acceptance test, a more reasonable criteria for judging cell viability is permitted. Since the tests which actually determine the ability of the battery to perform its design function, specifically the 18 month capacity and 60 month performance discharge tests, do not change, no decrease in required battery performance results from this change. Accordingly, it is appropriate to substitute the phrase, "latest performance discharge test" for the phrase "original acceptance test (4.8.2.3.2.e)" in Technical Specification 4.8.2.3.2.b.1.

Environmental Consideration

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

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: November 2, 1981

References

1. Lundvall, A. E. (BG&E), Letter and application for license amendment to H. R. Denton (NRC), June 27, 1980.
2. Lundvall, A. E. (BG&E), Letter and application for license amendment to H. R. Denton (NRC), July 20, 1981.
3. Ziemann, D. L. (NRC), Letter to A. E. Lundvall (BG&E) transmitting license Amendments 19 and 5 for Calvert Cliffs 1 and 2, respectively, January 14, 1977.
4. Reid, R. W. (NRC), Letter to A. E. Lundvall (BG&E) transmitting license Amendments 40 and 22 for Calvert Cliffs 1 and 2, respectively, July 31, 1979.

UNITED STATES NUCLEAR REGULATORY COMMISSION
DOCKET NOS. 50-317 AND 50-318
BALTIMORE GAS AND ELECTRIC COMPANY
NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 58 and 40 to Facility Operating Licenses Nos. DPR-53 and DPR-69, issued to Baltimore Gas and Electric Company, which revised Technical Specifications for operation of the Calvert Cliffs Nuclear Power Plant, Units Nos. 1 and 2 located in Calvert County, Maryland. The amendments are effective as of the date of issuance.

The amendments revise the Technical Specifications (1) to allow the use of an installed 69 kV offsite power source in place of a required 500 kV offsite power source; (2) provide for use of an installed "reserve battery" as a part of the safety related 125-volt D.C. power system; (3) provide for modification of the required remedial action associated with the decrease in the single cell voltages of the safety related 125-volt D.C. batteries; and (4) provide for modifications of the existing Limiting Condition for Operation associated with the battery chargers.

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

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The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the applications for amendments dated June 27, 1980 and July 20, 1981, (2) Amendment Nos. 58 and 40 to License Nos. DPR-53 and DPR-69, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D.C. and at the Calvert County Library, Prince Frederick, Maryland. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 2nd day of November, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing