

January 5, 1998

Mr. Charles H. Cruse
Vice President - Nuclear Energy
Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: ISSUANCE OF AMENDMENT FOR CALVERT CLIFFS NUCLEAR POWER PLANT,
UNIT NO. 1 (TAC NO. M99789)

Dear Mr. Cruse:

The Commission has issued the enclosed Amendment No 224 to Facility Operating License No. DPR-53 for the Calvert Cliffs Nuclear Power Plant, Unit No. 1. This amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated October 2, 1997.

The amendment changes the Calvert Unit 1 Technical Specification Requirements 4.8.1.1.2.a.5, 4.8.1.1.2.d.4, and 4.8.1.1.2.d.5. Baltimore Gas and Electric Company is planning to modify existing 1B emergency diesel generator (EDG) to increase its rated continuous capacity from 2700 kW to 3000 kW by increasing the mechanical capacity of the engine and from 3000 kW to 3300 kW for its 2000 hour rating. The change revises the above surveillance requirements to reflect the new electrical capacity for 1B EDG.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original Signed by:

Alexander W. Dromerick, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - WII
Office of Nuclear Reactor Regulation

Docket No. 50-317

Enclosures: 1. Amendment No 224 to DPR-53
2. Safety Evaluation

cc w/encls: See next page

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DOCUMENT NAME: CC1-2\M99789.AMT *See previous concurrence

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PDR



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Alexander W. Dromerick, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - III
Office of Nuclear Reactor Regulation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 5, 1998

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Vice President - Nuclear Energy
Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
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Sincerely,

A handwritten signature in cursive script, reading "Alexander W. Dromerick", is positioned above the typed name.

Alexander W. Dromerick, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-317

Enclosures: 1. Amendment No. 224 to DPR-53
2. Safety Evaluation

cc w/encls: See next page

DATED: January 5, 19978

AMENDMENT NO.224 TO FACILITY OPERATING LICENSE NO. DPR-53-CALVERT CLIFFS
UNIT 1

Docket File
PUBLIC
PDI-1 Reading
B. Boger, 14/E/4
S. Bajwa
S. Little
A. Dromerick
OGC
G. Hill (2), T-5 C3
W. Beckner, 013/H15
O. Chopra
ACRS
PD plant-specific file
L. Doerflein, Region I

cc: Plant Service list

DATED: January 5, 19978

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cc: Plant Service list

Mr. Charles H. Cruse
Baltimore Gas & Electric Company

Calvert Cliffs Nuclear Power Plant
Unit No. 1

cc:

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Calvert County Board of
Commissioners
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Chattanooga, TN 37411-4017



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.224
License No. DPR-53

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated October 2, 1997, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the the provisions of Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2. of Facility Operating License No. DPR-53 is hereby amended to read as follows:

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P PDR

2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No 224, 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 to be implemented during the 1998 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION



S. Singh Bajwa, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 5, 1998

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO.224 FACILITY OPERATING LICENSE NO. DPR-53

DOCKET NO. 50-317

Revise Appendix A as follows:

Remove Pages

3/4 8-4

3/4 8-5

Insert Pages

3/4 8-4

3/4 8-5

3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each required independent circuit between the offsite transmission network and the onsite Class 1E Distribution System shall be:

- a. Demonstrated **OPERABLE**, as follows:
 1. For each 500 kV offsite circuit, at least once per 7 days by verifying correct breaker alignments and indicated power availability.
 2. For the 69 kV SMECO offsite power circuit, within one hour of substitution for a 500 kV offsite power circuit, and at least once per 8 hours thereafter during use by verifying correct breaker alignments and indicated power availability; and
- b. Demonstrated **OPERABLE** at least once per **REFUELING INTERVAL** during shutdown by manually transferring unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated **OPERABLE**:

- a. At least once per 31 days on a **STAGGERED TEST BASIS** by:
 1. Verifying the fuel level in the day fuel tank.
 2. Verifying the fuel level in the fuel storage tank.
 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
 4. Verifying the diesel starts and achieves a generator voltage and frequency of 4160 ± 420 volts and 60 ± 1.2 Hz, respectively.*
 5. Verifying the generator is synchronized, loaded to ≥ 4000 kW for No. 1A Emergency Diesel Generator or ≥ 2700 kW for No. 1B Emergency Diesel Generator, and operates for ≥ 60 minutes.
 6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
 7. Verifying that the automatic load sequencer timer is **OPERABLE** with the interval between each load block within $\pm 10\%$ of its design interval.

*

All engine starts for the purpose of this Surveillance Requirement may be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that mechanical wear and stress on the diesel engine is minimized.

3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank is within the acceptable limits specified in Table 1 of ASTM D975-81 when checked for viscosity, water and sediment.
- c. At least once per 184 days by verifying the diesel starts from ambient condition and accelerates to at least 60 Hz in ≤ 10 seconds.*
- d. At least once per **REFUELING INTERVAL** by:
 - 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.
 - 2. Verifying the generator capability to reject a load of ≥ 500 hp without tripping.
 - 3. Simulating a loss of offsite power in conjunction with a safety injection actuation test signal, and:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.
 - b) Verifying the diesel starts from ambient condition on the auto-start signal, energizes the emergency busses with permanently connected loads, energizes the auto-connected emergency loads through the load sequencer and operates for ≥ 5 minutes while its generator is loaded with the emergency loads.*
 - c) Verifying that automatically bypassed diesel trips are automatically bypassed on a Safety Injection Actuation Signal.
 - 4. Verifying the diesel generator operates for ≥ 60 minutes while loaded to ≥ 4000 kW for No. 1A Emergency Diesel Generator or ≥ 3000 kW for No. 1B Emergency Diesel Generator.
 - 5. Verifying that the auto-connected loads to each diesel generator do not exceed 4000 kW for No. 1A Emergency Diesel Generator or 3300 kW for No. 1B Emergency Diesel Generator.

* All engine starts for the purpose of this Surveillance Requirement may be preceded by an engine pre-lube period recommended by the manufacturer so that mechanical wear and stress on the diesel engine is minimized.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 24 TO FACILITY OPERATING LICENSE NO. DPR-53
BALTIMORE GAS AND ELECTRIC COMPANY
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-317

1.0 INTRODUCTION

By letter dated October 2, 1997, Baltimore Gas and Electric Company (BGE) requested changes to the Technical Specifications (TSs) for Calvert Cliffs Unit 1 emergency diesel generator (EDG) 1B. BGE intends to upgrade 1B EDG to increase its electrical capacity by increasing the mechanical capacity of the engine. The modifications are to be performed during the next refueling outage. The modification will increase the electrical rating of 1B EDG, thereby providing additional margin for the electrical loading of the 4.16 kV Engineered Safety Feature (ESF) bus. This proposed change revises TS Surveillance Requirements 4.8.1.1.2.a.5, 4.8.1.1.2.d.4, and 4.8.1.1.2.d.5 to reflect the new electrical capacity for 1B EDG.

2.0 EVALUATION

Calvert Cliffs is a two unit site. The plant has four safety-related EDGs, two dedicated to each unit. Three of the EDGs are Fairbanks Morse diesels, the fourth EDG is manufactured by SACM of France. Unit 2 has two Fairbanks Morse EDGs 2A and 2B. Both of the Unit 2 EDGs had their electrical capacity upgraded in previous outages. The current Unit 2 TS reflect this increase in electrical capacity.

The licensee is proposing to modify 1B EDG to increase its electrical capacity from 2700 kW to 3000 kW for its continuous rating and from 3000 kW to 3300 kW for its 2000 hour rating thereby providing additional margin for the electrical loading of the 4.16kV ESF bus 14. The mechanical capacity of the engine will also be upgraded to support the increased electrical capacity. This will result in all three Fairbanks Morse EDGs having the same electrical and mechanical ratings and, therefore, the same surveillance requirements. The electrical capacity of the Unit 2 EDGs was also upgraded. The licensee's qualification program for upgrading the existing Unit 2 EDGs was approved by the staff by letter dated April 2, 1996. The licensee plans to qualify the 1B EDG to the upgraded rating in accordance with the NRC-approved testing program during the 1998 refueling outage.

Additionally, the licensee states that since the fuel oil consumption rates forming the basis for the proposed TS have previously been based upon the conservative assumption that all three EDGs have been upgraded, no change to this specification is required.

In order to reflect the correct rating of EDG's electrical capacity in the Unit 1 TS, the licensee has proposed changes to TS Surveillance Requirements 4.8.1.1.2.a.5, 4.8.1.1.2.d.4 and 4.8.1.1.2.d.5 as follows:

Surveillance Requirement 4.8.1.2.a.5

The surveillance currently requires 1B EDG to be loaded to greater than or equal to 2250 kW (90% of continuous rating of the EDG). The proposed change will maintain the existing surveillance requirements (testing to 90% of the continuous rating). The surveillance requirement will be modified to require 1B EDG to be loaded to greater than or equal to 2700 kW (90% of 3000 kW). This change reflects the upgraded electrical capability of the EDG. This change in surveillance requirements is consistent with the changes previously approved for Unit 2. Based on the above, we find the proposed change to be acceptable.

Surveillance Requirement 4.8.1.1.2.d.4

This surveillance currently requires that 1B EDG be tested at least once per refueling interval at greater than or equal to 2700 kW (2000 hour rating) for at least 60 minutes. The licensee proposes to test 1B EDG at 3000 kW (continuous rating). The change from the 2000 hour rating to the upgraded continuous rating is necessary to ensure that the testing performed is consistent with the intent of the surveillance. The surveillance is intended to demonstrate the EDG's ability to carry an electrical load equal to the accident loading. The licensee stated that the proposed minimum test loading of 3000 kW for 1B EDG is greater than the calculated accident loads and will more clearly demonstrate the ability of the EDGs to perform their safety function. Currently 2000 hour rating is used because it more closely reflected the accident loading. With the additional electrical capability of the upgraded 1B EDG, the continuous rating of 3000 kW is sufficient to demonstrate the EDG's accident loading capability. In addition, this change makes 1B EDG compatible with surveillances previously approved for Unit 2 EDGs. Based on the above, we find the proposed change to be acceptable.

Surveillance Requirement 4.8.1.1.2.d.5

This surveillance currently requires verification that the auto-connected loads do not exceed 4000 kW for 1A EDG or 2700 kW for 1B EDG at least per refueling interval. The licensee proposes changing the auto-connected load verification for 1B EDG to 3300 kW to reflect the change in the 2000 hour rating of the EDG. This change maintains the intent of the surveillance that the auto-connected loads do not exceed the 2000 hour rating of 1B EDG. Currently, 2000 hour rating of 1B EDG is 2700 kW, with the proposed upgrade it will change to 3300 kW. The proposed change will also make 1B EDG surveillance consistent with the identical surveillances for Unit 2 EDGs. Based on the above, we find the proposed change to be acceptable.

Based on the evaluation discussed above, the staff finds that the proposed change reflects the upgraded continuous rating of 1B EDG in surveillance requirements 4.8.1.2.a.5, 4.8.1.1.2.d.4 and 4.8.1.1.2.d.5. The staff believes that after 1B EDG is qualified in accordance with the staff's previously approved testing program for Unit 2 EDGs, it will demonstrate adequate assurance of its capacity, capability and reliability to perform its safety function.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Maryland State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (62 FR 59913). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c) (9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: O. Chopra

Date: January 5, 1997