

April 20, 2000

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: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 1 - ISSUANCE OF  
AMENDMENT RE: DIESEL GENERATOR 1A LIGHT LOAD (TAC NO. MA8264)

Dear Mr. Cruse:

The Commission has issued the enclosed Amendment No. 235 to Renewed Facility Operating License No. DPR-53 for the Calvert Cliffs Nuclear Power Plant, Unit No. 1. This amendment is in response to your application transmitted by letter dated February 18, 2000, as supplemented March 3, 2000.

The amendment approves resolution of an issue involving the Societie Alsacienne Construction Mechaniques Del Melhouse (SACM) diesel generator (DG) that constitutes an unreviewed safety question. Specifically, a new failure mode has been identified for DG 1A SACM that is not adequately described in the Updated Final Safety Analysis Report. The manufacturer has indicated that operating the engine in a light load condition may degrade engine performance and ultimately result in engine failure.

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,

**/RA/**

Alexander W. Dromerick, Sr. Project Manager, Section 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-317

Enclosures: 1. Amendment No. 235 to DPR-53  
2. Safety Evaluation

cc w/encls: See next page

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Unit Nos. 1 and 2

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BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 235  
Renewed License No. DPR-53

1. The U.S. Nuclear Regulatory Commission (the Commission), has found that:
  - A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated February 18, 2000, as supplemented March 3, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. 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, changes to the Updated Final Safety Analysis Report to reflect the new failure mode that has been identified for Diesel Generator (DG) 1A SACM as set forth in Baltimore Gas and Electric Company's amendment request of February 18, 2000, as supplemented March 3, 2000, is authorized.
3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA by Elinor G. Adensam for/***

Marsha Gamberoni, Acting Chief, Section 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Date of Issuance: April 20, 2000

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 235 TO RENEWED 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 February 18, 2000, as supplemented by letter dated March 3, 2000, Baltimore Gas and Electric Company (BGE) proposed an amendment to Renewed Operating License No. DPR-53 for approval of an issue involving the Societe Alsacienne Construction Mechaniques Del Melhouse (SACM) diesel generator (DG) manufactured in France that constitutes an unreviewed safety question (USQ). The manufacturer of the SACM DG has indicated that this DG requires a minimum load of about 30 percent to ensure long-term reliable operation and that operating the engine in a light load condition may degrade engine performance and could ultimately result in engine failure. If the DG is operated for less than 30 percent load, a "clean-out" run of at least 50 percent load for 1 hour will reset the 8-hour restriction for minimum load. The licensee has requested approval of their resolution to satisfy the USQ. The March 3, 2000, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

We have reviewed the proposed resolution of the above USQ and find it acceptable as discussed in the following evaluation.

2.0 EVALUATION

Calvert Cliffs has four safety-related DGs with two DGs dedicated to each unit. Three of the DGs are Fairbanks Morse DGs and one is a SACM DG. The SACM DG is dedicated to one of the Unit 1 safety-related 4kV buses and is designated as DG 1A. The manufacturer of SACM DG informed BGE that DG 1A may be operated up to 8 consecutive hours unloaded without jeopardizing reliability. Also, operating the DG with loads below the minimum load requirement may degrade engine performance and could ultimately result in engine failure.

DG 1A, primarily associated with Unit 1, is also needed to support No. 11 Control Room (CR) heating, ventilation and air conditioning (HVAC) for Unit 2 when it is operating. When DG 1A is required to be operable to support the No. 11 control HVAC, the maximum expected load on DG 1A is 350 kW. Minimum load for sustained operation without degradation is 30 percent (1620 kW). DG 1A can run unloaded for 8 hours without any degradation.

The licensee states that its design does not ensure that the minimum load requirements for SACM DG can be met for all operational occurrences, postulated events, and postulated

occurrences with safety-related loads that are automatically sequenced onto DG1A. Only six events were considered for this evaluation because they assume loss of offsite power. Only four out of six of these events do not have sufficient safety-related loads. These events are loss of feed water flow, loss of offsite power, steam line break, and large loss-of-coolant accident (LOCA). Since this new failure mode for SACM DG was not previously evaluated by the licensee, it results in an USQ. This issue does not exist for the Fairbanks Morse DGs because the engine support systems required for these diesels to operate provide sufficient load.

In order to resolve this issue, the licensee proposes to monitor the load every shift to ensure sufficient safety-related loads are available to the DG 1A to ensure the minimum load requirement is met. The licensee will make pre-identified safety-related equipment available to start and load onto DG 1A in order to meet the minimum load requirement. DG 1A will be declared inoperable if sufficient safety-related loads are not available to satisfy the minimum load requirement. The operator actions needed to provide the required load for DG 1A will be controlled under plant procedures. When DG 1A gets a signal to start and run in response to events involving a valid demand, where the DG is not sufficiently loaded, the operators will have the list of equipment available to load DG 1A. Only safety-related loads will be credited to satisfy the minimum load requirements of SACM DG. The licensee states that the operators will have ample time (several hours) to load the engine. The licensee states that it has evaluated the lists of the safety-related equipment that would be made available to supply load to DG 1A during Modes 1-4, and has determined that operating the equipment in this fashion would not create a new USQ. Based on the above, we find the proposed approach to be acceptable, because safety-related loads will be used to satisfy the minimum load requirements and there is sufficient time to add these loads.

Additionally, the licensee has planned to test a spare SACM DG to provide information to determine if this is truly a valid failure mode for this type of engine. The test is intended to verify that a SACM diesel engine would tolerate running at minimal load for a substantial period of time (7 days) and would still be capable of performing its required safety function, if required. The licensee expects the test to be completed and the results reviewed and accepted by June 2000. If the test results demonstrate that SACM DG can run without load continuously for 7 days, there will no longer be an USQ concerning minimum load. We will review and evaluate the results of such a test, when made available.

Based on the above, we conclude that the measures taken by the licensee to monitor the DG load on every shift to assure sufficient safety-related loads are available to meet the minimum load requirement for SACM DG 1A will ensure that the DG 1A will be capable of performing its safety function as designed. Therefore, the proposed amendment to resolve the above USQ is acceptable.

### 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 (65 FR 12038). 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: April 20, 2000