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December 1, 1995

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Supplement to License Amendment Request; Enhancement of the Engineered
Safety Features Electrical System

In Reference (a), Baltimore Gas and Electric Company requested a License Amendment which would revise the Technical Specifications for Calvert Cliffs Units 1 and 2 to reflect: 1) the addition of a fourth safety-related Emergency Diesel Generator (EDG), No. 1A EDG; and 2) the upgraded electrical capability of two of the three existing Fairbanks Morse EDGs. This letter is submitted as a supplement to Reference (a) to provide additional justification and evaluation for changes to the Fire Protection System.

The changes requested in Reference (a) included incorporating the appropriate fire detection/suppression components in the new Diesel Generator Building, which houses the No. 1A EDG, into the existing Surveillances for fire detection instrumentation, sprinklers and fire hose stations. In Reference (b), we described the design of the mechanical systems for No. 1A EDG. The mechanical portions of the Diesel Generator Building's Fire Protection System, including the multi-zone detection system, three preaction suppression systems and standpipe system and hose stations, are described in that report. The Fire Protection System for the Diesel Generator Building is designed to meet the requirements of 10 CFR 50.48, Appendix R to 10 CFR Part 50, and applicable National Fire Protection Association requirements. Additionally, this system meets the intent of the applicable guidelines outlined in Branch Technical Position CMEB 9.5-1. As noted in Reference (c), instrumentation and controls for the Fire Protection System are designed in accordance with National Fire Protection Association 13 and 72. By References (d) and (e), the Commission approved the design of the safety-related EDGs mechanical, and instrumentation and controls systems, respectively. Although a subsequent change to the detection system rearranged the labeling for the fire detection zones on the control panel; the system still meets the requirements specified in References (b) through (e). Finally, it should be noted that the fire hose station identified as being located on the 44-foot elevation is actually located on the 45-foot elevation.

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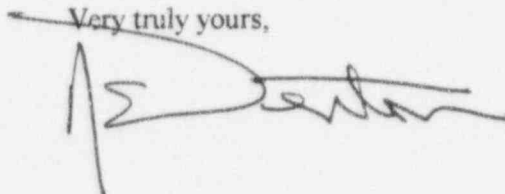
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Operability of the fire detection instrumentation ensures that adequate warning is available for prompt fire detection. Operability of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety-related equipment is located. The Technical Specification Basis for the fire detection/suppression equipment is ensuring prompt detection and suppression of fires, to reduce the potential for damage to safety-related equipment. The fire protection equipment in the Diesel Generator Building protects the safety-related No. 1A EDG and its auxiliary systems from damage due to fires; therefore, inclusion of the fire detection instruments, fire protection sprinklers and fire hose stations in the Technical Specifications is consistent with our licensing basis.

Attachment (1) to this letter is a revision to Attachment (2) of Reference (a), "Determination of Significant Hazards," evaluated in accordance with 10 CFR 50.92. The revised evaluation of significant hazards determination incorporated changes to the Instrumentation and Plant Systems Technical Specifications described in this letter. Attachment (1) to this letter replaced Attachment (2) of Reference (a) in its entirety.

Should you have questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



STATE OF MARYLAND :
: TO WIT:
COUNTY OF CALVERT :

I hereby certify that on the 1st day of December, 1995, before me, the subscriber, a Notary Public of the State of Maryland in and for Calvert County, personally appeared Robert E. Denton, being duly sworn, and states that he is Vice President of the Baltimore Gas and Electric Company, a corporation of the State of Maryland; that he provides the foregoing response for the purposes therein set forth; that the statements made are true and correct to the best of his knowledge, information, and belief; and that he was authorized to provide the response on behalf of said Corporation.

WITNESS my Hand and Notarial Seal:

Denise Snehis
Notary Public

My Commission Expires:

2/2/98
Date

cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
L. B. Marsh, NRC
D. G. McDonald, Jr., NRC
T. T. Martin, NRC
P. R. Wilson, NRC
R. I. McLean, DNR
J. H. Walter, PSC

Attachment: (1) Determination of Significant Hazards

- REFERENCES:
- (a) Letter from Mr. R. E. Denton (BGE) to NRC Document Control Desk, "License Amendment Request; Enhancement of the Engineered Safety Features Electrical System," dated November 1, 1995
 - (b) Letter from Mr. R. E. Denton (BGE) to NRC Document Control Desk, "Emergency Diesel Generator Project - SACM Design Generator and Mechanical Systems Design Report," dated July 20, 1993
 - (c) Letter from Mr. R. E. Denton (BGE) to NRC Document Control Desk, "Emergency Diesel Generator Project - Instrumentation and Control Systems Design Report," dated August 25, 1993
 - (d) Letter from Mr. D. G. McDonald, Jr. (NRC) to Mr. R. E. Denton, "Emergency Diesel Generator Project - Sociétié Alsacienne De Constructions Mécaniques Del Mulhouse (SACM) Diesel Generator and Mechanical Systems Report - Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (TAC Nos. M87070 and M87071," dated March 1, 1994
 - (e) Letter from Mr. D. G. McDonald, Jr. (NRC) to Mr. R. E. Denton, "Instrumentation and Control Systems Design Report - Calvert Cliffs Nuclear Power Plant, Units Nos. 1 and 2 (TAC Nos. M87556 and M87557)," dated June 27, 1994

ATTACHMENT (1)

DETERMINATION OF SIGNIFICANT HAZARDS

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The proposed change has been evaluated against the standards in 10 CFR 50.92 and has been determined to not involve a significant hazards consideration, in that operation of the facility in accordance with the proposed amendments:

1. *Would not involve a significant increase in the probability or consequences of an accident previously evaluated.*

The Engineered Safety Features (ESF) electrical system provides a reliable source of electrical power to the 4.16 kV ESF busses to operate the necessary accident mitigation equipment, should offsite power be lost. The proposed change to Units 1 and 2 Technical Specifications was prompted by two significant modifications to this system — the addition of No. 1A Emergency Diesel Generator (EDG) and the upgrade of the electrical capacity of two of the three existing Fairbanks Morse EDGs. The addition of No. 1A EDG provides the plant with an ESF electrical system configuration consisting of two EDGs dedicated to each unit, thereby eliminating reliance upon a "swing" diesel capable of being aligned to either unit. The four-EDG configuration provides a greater degree of flexibility when an EDG is being overhauled or tested during refueling outages. The increased electrical capacity of the existing Fairbanks Morse EDGs will give the operators greater flexibility in the choice of discretionary loads for the mitigation of accidents. Both modifications necessitate changes to the Technical Specifications.

The ESF electrical system, including the four EDGs, is used to mitigate the consequences of an accident. The design of the new No. 1A EDG is such that incorporation of this EDG into the existing ESF electrical system does not result in this system becoming an accident initiator. Furthermore, the modification to upgrade the capacity of the existing EDGs will enhance the plant operators' ability to mitigate accidents by allowing greater flexibility in the choice of discretionary loads, but will not change the configuration of the ESF electrical system or any support systems such that the EDGs would become an accident initiator. Therefore, the proposed change would not increase the probability of an accident previously evaluated.

The addition of the safety-related No. 1A EDG to the ESF electrical system will enhance the ability to provide reliable electric power during all modes of operation and shutdown conditions of the plant. Number 1A EDG and its support systems are designed such that failure of a single component will not prevent the capability to safely shut down the plant and to maintain the plant in a safe shutdown condition. Furthermore, non-safety-related systems associated with No. 1A EDG are designed so that their failure will not result in the loss of function of any safety-related system. The design of the Fire Protection System in the Diesel Generator Building meets the Codes and Standards specified in the mechanical and instrumentation and controls design reports, previously approved by the Commission. Inclusion of components from these systems into the Technical Specifications is consistent with Calvert Cliff's current licensing basis. The proposed Technical Specifications will demonstrate the reliability and capability of No. 1A EDG and the upgraded Fairbanks Morse EDGs to perform their accident mitigation function. Implementation of the proposed Technical Specifications will not reduce the ability of the EDGs to perform their safety functions. The increased volume of fuel oil necessary to support operation of No. 1A EDG and the upgraded Fairbanks Morse EDGs will not adversely impact the ability of any systems to perform their safety functions. The auxiliary systems which required modification or analysis to support the upgraded ratings of the Fairbanks Morse EDGs will not adversely impact operation of any

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DETERMINATION OF SIGNIFICANT HAZARDS

other plant systems necessary to mitigate the consequences of an accident. Based on the above, the proposed change would not increase the consequences of an accident previously evaluated.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Would not create the possibility of a new or different type of accident from any accident previously evaluated.*

The proposed change adds Surveillance Requirements, Limiting Conditions for Operation, and Action Statements to reflect the addition of a new EDG to the ESF electrical system, and upgrades the electrical capacity of the existing Fairbanks Morse EDGs. This change does not add any new equipment, modify any interfaces with any existing equipment, or change the equipment's function, or the method of operating the equipment to be modified. The system will continue to operate in the same manner as before the capacity upgrades were implemented. The additional fuel oil required to support the capacity upgrades will be stored in the existing Seismic Category I fuel oil storage tanks. The modified EDGs will continue to serve a function as accident mitigators, and will not become an initiator of any accident.

The NRC has reviewed the design of the new EDG, its attendant support systems and the new EDG Building, and concurs with Baltimore Gas and Electric Company's determination that the design satisfies the design requirements for a safety-related EDG. Number 1A EDG is a tandem engine-single generator set, and is physically very different from the existing single engine-generator Fairbanks Morse EDGs. However, the 4.16 kV three-phase rated electrical output is the same as that provided by the Fairbanks Morse EDGs to the other ESF busses. The excess capacity of No. 1A EDG will allow the operators greater flexibility in choosing post-accident discretionary loads, but will not cause any detrimental effects to the ESF busses or the equipment served by those busses. Operation of No. 1A EDG in accordance with these proposed Technical Specifications will not jeopardize the operation of any other plant systems. The design of the Fire Protection System in the Diesel Generator Building meets the Codes and Standards specified in the mechanical, and instrumentation and controls design reports, previously approved by the Commission. Inclusion of components from these systems into the Technical Specifications is consistent with Calvert Cliffs current licensing basis. Furthermore, locating No. 1A EDG and its fuel oil supply in a separate Category I building provides additional assurance that this equipment will not become an initiator of any accident.

Therefore, the proposed change does not create the possibility of a new or different type of accident from any accident previously evaluated.

3. *Would not involve a significant reduction in a margin of safety.*

The safety function of the EDGs and the ESF electrical system is to provide a reliable source of electrical power to the safety-related busses to operate the necessary accident mitigation equipment, should offsite power be lost. The margin of safety associated with this safety function

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DETERMINATION OF SIGNIFICANT HAZARDS

is two-fold: (1) a level of redundancy must be designed into the EDGs and the ESF electrical system such that the single failure criteria is met; and (2) the power supplied to the ESF electrical system by the EDGs must be sufficient to power the necessary accident mitigation equipment, should offsite power be lost.

The addition of No. 1A EDG provides the plant with an ESF electrical system configuration consisting of two EDGs dedicated to each unit, thereby eliminating reliance upon a swing diesel capable of being aligned to either unit. In the current configuration, the facility meets the single failure criteria on a "per site" basis. However, as a result of the new four-EDG configuration, each unit will have redundant diesel generators to supply power to redundant safety-related equipment required for safe shutdown or accident mitigation. The revised Fuel Oil System configuration and the minimum fuel oil volume to be maintained in the fuel oil tanks supports the safety function of the EDGs, while maintaining the margin of safety associated with this equipment. Altogether, the new four-EDG configuration may be considered an increase in the margin of safety.

Inclusion of Surveillances for the Fire Protection System components into the Technical Specifications is consistent with Calvert Cliffs current licensing basis, and ensures that adequate fire detection and suppression capability is available to identify and extinguish fires in the Diesel Generator Building, thereby reducing the potential for damage to No. 1A EDG and its auxiliaries. The Diesel Generator Building and its Fire Protection System is designed so that smoke and heat from a fire in that building will not impact the redundant safety-related Emergency Diesel Generator in the Auxiliary Building.

At the completion of the modifications to increase the capacities of the Unit 2 EDGs and to install the new No. 1A EDG, we will have diesel generators with more available margin than currently exists. This will provide the operators with more flexibility during conditions where the diesel generators are providing onsite power. The higher electrical capacities will result in an increase in the margin between the EDGs' electrical capacities and the electrical power required to operate safety-related equipment required for safe shutdown or accident mitigation. Therefore, these modifications may be considered an increase in the margin of safety.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.