

ROBERT E. DENTON
Vice President
Nuclear Energy

Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, Maryland 20657
410 586-2200 Ext. 4455 Local
410 260-4455 Baltimore



September 23, 1994

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
License Amendment Request; One-Time Technical Specification Changes to
Support the 1995 Refueling Outage

REFERENCES: (a) Letter from Mr. G. C. Creel to NRC Document Control Desk, dated
September 5, 1991, Request for Amendment to Operating Licenses
(b) Letter from Mr. R. E. Denton to NRC Document Control Desk, dated
August 17, 1993, Emergency Diesel Generator Upgrade Project

Pursuant to 10 CFR 50.90, the Baltimore Gas and Electric Company (BGE) hereby requests an Amendment to Operating License Nos. DPR-53 and DPR-69 by incorporating the changes described below into the Technical Specifications for Calvert Cliffs Unit Nos. 1 and 2.

DESCRIPTION

The proposed amendment would revise the Unit 2 Shutdown AC Sources Technical Specification to allow a one-time extension from 7 to 14 days of the allowed outage time (AOT) for the dedicated Class 1E emergency power source during the Unit 2 1995 Refueling Outage. The proposed amendment would also revise the Unit 1 Control Room Emergency Ventilation System (CREVS) Technical Specification to provide a one-time extension from 7 to 30 days to the AOT for one train inoperable. These extensions will be needed during the 1995 Unit 2 Refueling Outage to support the modifications scheduled for the onsite electrical distribution system in response to the Station Blackout (SBO) Rule (10 CFR 50.63) and the upgrade of No. 21 Emergency Diesel Generator (EDG).

030045

9410040063 940923
PDR ADCK 05000317
P PDR

A001
111

BACKGROUND

Currently, Calvert Cliffs Nuclear Power Plant uses three EDGs to provide the emergency onsite power supply. Normally, No. 11 EDG is dedicated to Unit 1, No. 21 EDG is dedicated to Unit 2, and No. 12 EDG is the "swing" EDG and is capable of powering one emergency bus on either unit. Offsite AC electrical power is provided by three independent 500 kV transmission lines. Two of the 500 kV transmission lines are connected to the BGE grid at the Waugh Chapel substation. The other 500 kV transmission line is connected to the Potomac Electric Power Company grid at the Chalk Point substation. These lines provide offsite power to the units during normal operations as well as during startup and shutdown. The system is also designed with the capability for a single 500 kV line to power both units simultaneously. This diversity ensures that the loss of two 500 kV lines will not result in a loss of offsite power. In addition to the three 500 kV transmission lines, there is a 69 kV line from Southern Maryland Electric Cooperative (SMECO). This line is capable of supplying the power for all required safe shutdown loads for both units as described in Updated Final Safety Analysis Report Section 8.2.4.

During the 1995 refueling outage, BGE plans the following modifications that will affect the Calvert Cliffs electrical distribution system:

1. Number 12 EDG, which is the "swing" diesel, will be disconnected from 4 kV Bus No. 24 to support the tie-in of the Alternate AC (AAC) diesel generator that is being installed in response to the SBO Rule. A temporary splice box will be installed to reconnect No. 12 EDG to 4 kV Bus No 21.
2. Number 21 EDG will be upgraded to increase its electrical output.

Baltimore Gas and Electric Company has evaluated the order of these modifications in the outage. The temporary splice box installation is scheduled to occur first so that No. 21 EDG will be available to support power operation on Unit 1. The upgrade of No. 21 EDG will be performed later in the outage. After the No. 21 EDG upgrade is complete, an integrated Engineered Safety Feature Actuation test must be done before the diesel generator can be considered to be Mode 1 operable. This test would be difficult to perform mid-outage due to the amount of equipment needed to support this test. In addition, there are other modifications currently considered for the 1995 outage that would impact our ability to align No. 21 EDG to the Unit 1 safety-related bus. Therefore, it is necessary to perform these modifications in the proposed order.

CHANGE NO. 1

During the 1995 outage, work will begin on the onsite emergency power distribution system to tie-in the AAC diesel generator that is being installed in response to the SBO Rule. The work scheduled for the 1995 outage will consist of cutting the connection from No. 12 EDG to 4 kV Bus No. 24 and installing a temporary splice box so that No. 12 EDG will continue to be able to "swing" to 4 kV Bus No. 21. To complete the necessary testing, No. 12 EDG will be rendered inoperable until the installation of the temporary splice box is complete. Attachment (3) contains figures that show the existing pre-outage configuration and the post temporary splice box configuration. The temporary splice box will be removed after the 1996 outage when No. 12 EDG will be dedicated to 4 kV Bus No. 14.

Installation of the temporary splice box is scheduled to occur when No. 12 EDG is removed from service for the performance of Surveillance Requirement 4.8.1.1.2.d.1. However, the installation of the temporary splice box could take up to 14 days, which is longer than the 7-day AOT currently allowed by the Technical Specifications 3.8.1.2.b and 3.8.2.2.b for the shutdown unit to be without a qualified safety-related EDG. Therefore, we are requesting a one-time extension of the AOT. The current restrictions in Action Statement 3.8.1.2.b and 3.8.2.2.b will remain in effect until the temporary splice box is installed and No. 12 EDG is returned to operable status.

Unit 1 is expected to be at full power during this period of the outage. Number 11 EDG will be aligned to 4 kV Bus No. 11 and No. 21 EDG will be aligned to 4 kV Bus No. 14 so that Unit 1 will have the two required safety-related EDGs to support power operation. Unit 1 Technical Specification 3.7.6.1 requires two trains of the CREVS to be operable. Number 11 CREVS receives power from Unit 1 through 4 kV Bus No. 11 with No. 11 EDG as the emergency power supply and No. 12 CREVS receives power from Unit 2 through 4 kV Bus No. 24 with No. 21 EDG as the emergency power supply. When aligned to 4 kV Bus No. 14, No. 21 EDG will also be capable of being aligned to 4 kV Bus No. 24 so that No. 12 CREVS will have available a qualified safety-related EDG to provide emergency AC power. This plant configuration has been evaluated and it has been determined that it does not impair any existing safety-related equipment needed to maintain the Unit 1 in a safe condition.

REQUESTED CHANGE

Change Specifications 3.8.1.2 and 3.8.2.2 of the Unit 2 Technical Specifications as shown on the marked-up pages attached to this transmittal. The final Technical Specification pages will be renumbered to accommodate added and/or deleted pages.

SAFETY ANALYSIS

During the temporary splice box installation, loss of offsite power to the shutdown unit is the concern. The probability of a loss of offsite power during the 14 days that No. 12 EDG is out-of-service is very low because of the reliability and redundant nature of the offsite power sources. There are four independent offsite power sources, the three 500 kV transmission lines and the 69 kV SMECO line, any one of which can provide for the safe shutdown loads of both units. Planned maintenance will be prohibited on two of the three 500 kV lines and associated relaying and devices within the switchyards during the time that No. 12 EDG is out-of-service. The 69 kV line is an independent power circuit and we will verify the availability of the required offsite power sources once per shift. These actions are similar to those stated in Reference (a).

The temporary diesel generator that is required by Action Statements 3.8.1.2.b and 3.8.2.2.b will be used during the installation of the temporary splice box. Action Statements 3.8.1.2.b and 3.8.2.2.b require two offsite power circuits; suspending all operations involving core alterations, positive reactivity changes, movement of irradiated fuel, and movement of heavy loads over irradiated fuel; and establishing containment penetration closure. These will apply during the 14-day period. In addition, reduced inventory conditions of the Reactor Coolant System will be prohibited during the 14-day period. There is no other Unit 2 Technical Specification that is affected by this extension. This modification affects the CREVS for

Unit 1, however, no Technical Specification revision for Unit 1 is required since an alternate lineup providing Class 1E emergency power to No. 12 CREVS is available.

The potential for a loss of offsite power due to severe weather has also been considered. The 500 kV transmission lines and towers are designed to withstand winds of 100 mph. Winds of this velocity could be from a hurricane or a tornado. The incidence of hurricanes of 100 mph magnitude in the Calvert Cliffs area is very low (only one in recorded history). Tornadoes can occur at any time, given the right meteorological conditions. Tornadoes with wind velocities in excess of 100 mph in the Calvert Cliffs area are also very rare. It is extremely unlikely that a single tornado would strike all three 500 kV transmission lines and the SMECO line. At the site, the 500 kV lines are overhead while the SMECO line is underground. A tornado at the site may damage the 500 kV lines, but would not affect the SMECO line. Should the site or the offsite power circuit's right-of-way be threatened by severe weather, our Emergency Response Plan Implementation Procedures require actions which lead to placing both units in a safe condition depending on the severity of the weather.

Two accidents are evaluated for a unit in Mode 5 and 6. They are a fuel handling accident and a boron dilution event. The fuel handling accident is precluded because no core alterations or other movement of irradiated fuel will be allowed to take place during the requested extension. Containment closure is also required as a precaution. The boron dilution event is rendered unlikely by requiring that positive reactivity changes be suspended during the requested extension. However, the temporary diesel generator can provide backup power onsite with the capacity to support the safety-related loads of the shutdown unit.

DETERMINATION OF SIGNIFICANT HAZARDS

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.*

Requiring one Class 1E Emergency Diesel Generator (EDG) to be available for a shutdown unit ensures that AC power will be available for a loss of offsite power event, a boron dilution event, or a fuel handling incident. There is a very low probability that a loss of offsite power will occur due to severe weather or inadvertent damage to the switchyard during the 14-day period that the temporary splice box is being installed and No. 12 EDG is out-of-service. The Calvert Cliffs offsite power supply is highly redundant and has significant capability in withstanding severe weather events, such as tornadoes. In addition, Calvert Cliffs Emergency Response Plan Implementation Procedures requires that certain actions be taken, up to and including shutdown of both units, on the approach of a severe storm, such as a hurricane. The probability of a loss of offsite power is maintained low by prohibiting planned maintenance on two of the three 500 kV transmission lines and associated relaying and devices within the switchyards. Availability of the required offsite power sources will be verified once per shift. In addition to the offsite power sources, a temporary diesel generator will also be installed to provide a backup onsite power source with the capacity to support the safety-related loads of the shutdown unit.

The boron dilution event and the fuel handling incident are the only two accidents that are explicitly analyzed in the Updated Final Safety Analysis Report for a shutdown unit. The potential accident precursors such as core alterations, positive reactivity insertions, movement of irradiated fuel and movement of heavy loads over irradiated fuel, will be prohibited while No. 12 EDG is out-of-service for the temporary splice box installation. Therefore the probability of a boron dilution event or fuel handling incident is decreased during the operations allowed by this change. The requirement to maintain containment penetration closure ensures that the consequences of an accident would not be significantly increased.

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.*

A temporary diesel generator is being installed onto a 4 kV bus of the shutdown unit while the dedicated EDG for this unit is transferred to the operating unit for up to 14 days. This is an extension of the same configuration allowed by Action Statements 3.8.1.2.b and 3.8.2.2.b with additional provision taken for the Control Room Emergency Ventilation System (CREVS). The EDGs will be aligned so that each train of the CREVS will have an emergency power supply available. The proposed change has been evaluated and it has been determined that it does not impair any existing safety-related equipment needed to maintain the unit in a safe shutdown condition, and does not create any new accident initiators. The operation of the temporary diesel generator is familiar to the operators and is not significantly different from typical operator activities.

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 provided by the AC electrical power sources and associated distribution systems for a shutdown unit is to ensure that the unit can be maintained in a safe shutdown condition, and there is sufficient instrumentation and control capability available for monitoring and maintaining the unit status. The proposed change would allow the shutdown unit to be without a dedicated Class 1E emergency power source for up to 14 days. This is an extension of the outage time of seven days allowed by the Technical Specifications for performing maintenance and inspections on No. 12 EDG. This proposed change will have no impact on the offsite power sources.

Several compensatory measures will be taken during this period to ensure that a power source will be available for the shutdown unit. These measures include requiring that two offsite power sources are available, and a temporary diesel generator will be installed capable of supplying the loads necessary to maintain the unit in a safe condition. In addition, Technical Specifications

require several compensatory measures to reduce the potential for a fuel handling incident and a boron dilution event. These measures include prohibiting positive reactivity changes, suspending core alterations, movement of irradiated fuel, and the movement of heavy loads over irradiated fuel. Establishing containment penetration closure further ensures that adequate margin of safety is maintained. In addition, reduced inventory conditions of the Reactor Coolant System will be prohibited during the 14-day period.

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

CHANGE NO. 2

Calvert Cliffs has a common Control Room for the two units and the Control Room Emergency Ventilation System (CREVS) consists of two redundant trains. The CREVS is designed so that the Control Room can be occupied under all plant conditions (plant control during startup, normal operation, shutdown, and emergency operation). Number 11 CREVS receives power from Unit 1 through 4 kV Bus No. 11 with No. 11 EDG as the emergency power supply and No. 12 CREVS receives power from Unit 2 through 4 kV Bus No. 24 with No. 21 EDG as the emergency power supply. In past outages, when No. 21 EDG was not available as an emergency power supply, No. 12 EDG was used to provide the emergency power supply. With either unit in Modes 1 through 4, the Technical Specifications require both trains of the CREVS to be operable. Currently, the Technical Specifications allow one train to be inoperable for up to seven days.

As stated in Reference (b), the electrical capacity of the existing EDGs will be increased to provide additional margin for the electrical loading of 4 kV safety-related busses. The No. 21 EDG upgrade is scheduled to occur during the Unit 2 1995 Refueling Outage after the installation of the temporary splice box described in Change No. 1. The No. 21 EDG upgrade is expected to be completed within 30 days. As discussed above, the capability to align No. 12 EDG to 4 kV Bus No. 24 will be removed prior to the No. 21 EDG upgrade. This will result in No. 12 CREVS not having a safety-related emergency power supply during the No. 21 EDG upgrade. During the upgrade period, planned maintenance will be prohibited on three of the four offsite power sources. In addition, a temporary diesel generator will be connected to 4 kV Bus No. 24 to provide assurance that AC power would be available to No. 12 CREVS. This is the same temporary diesel generator that will be used when No. 12 EDG is removed from service for Surveillance Requirement 4.8.1.1.2.d.1. There is no other Technical Specification that is affected by this extension. Number 11 EDG will be aligned to 4 kV Bus No. 11 and No. 12 EDG will be available as the "swing" diesel generator for Unit 1 to 4 kV Bus No. 14 or for Unit 2 to 4 kV Bus No. 21. Therefore, Unit 1 will have the two required safety-related EDGs to support power operation and Unit 2 will have the one required safety-related EDG to support safe shutdown conditions. Without an extension of the Unit 1 CREVS Technical Specification 7-day AOT to 30 days, the scheduled improvements to No. 21 EDG would require a dual unit, 30-day outage.

In addition to the upgrade to No. 21 EDG, 4 kV Bus No. 24 will be temporarily de-energized during the 30-day upgrade period so that bus work can be completed to allow the tie-in of the AAC diesel generator. This work is currently scheduled to be completed in four days and is not expected to take more than the seven days currently allowed in Technical Specification 3.7.6.1. During these four days, the No. 12 CREVS will be without the normal power source or a Class 1E emergency power source. The

Technical Specifications currently allow this to occur within the seven-day Action Statement. The normal power source will be returned to 4 kV Bus No. 24 after the bus work is completed. Until the No. 21 EDG upgrade is complete, the emergency source will be the temporary diesel generator. This is the only bus outage that is scheduled on 4 kV Bus No. 24 during the No. 21 EDG upgrade.

REQUESTED CHANGE

Change Specification 3.7.6.1 of the Unit 1 Technical Specifications as shown on the marked-up pages attached to this transmittal. The final Technical Specification pages will be renumbered to accommodate added and/or deleted pages.

SAFETY ANALYSIS

During upgrading of No. 21 EDG, the loss of Control Room habitability is the concern. The CREVS is required to maintain the Control Room temperature below a specified limit and to filter the Control Room air in the event of a radioactive release. The probability of a loss of both trains of CREVS is very low. Number 11 CREVS will have both its normal power source and its emergency power source available during the upgrade period. Number 12 CREVS is also scheduled to have its normal power source available, except for a brief period as permitted under the current Technical Specification. Number 12 CREVS will not have a safety-related emergency power supply but will have the temporary diesel generator available. The Unit will only have the single train of CREVS (No. 11) during the four days 4 kV Bus No. 24 must be de-energized to allow bus work that is necessary for the tie-in of the AAC diesel generator. Loss of all power to both trains of the CREVS would require a loss of offsite power, the failure of No. 11 EDG to start, and the failure of the temporary diesel generator to start. This sequence of events is highly unlikely.

DETERMINATION OF SIGNIFICANT HAZARDS

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 Control Room Emergency Ventilation System (CREVS) is designed so that the Control Room can be occupied under all plant conditions. The CREVS is required to maintain the Control Room temperature and to filter the Control Room air in the event of a radioactive release. When No. 21 Emergency Diesel Generator (EDG) is being upgraded, No. 12 CREVS will be without a Class 1E emergency power source. The CREVS is not an initiator in any previously evaluated accidents. Therefore, the proposed change does not involve an increase in the probability of an accident previously evaluated.

The CREVS is required to maintain the Control Room habitable following a radioactive release from a loss of coolant accident, a main steam break, or a steam generator tube rupture. There is a very low probability of an event occurring requiring Control Room isolation during the 30-day period that it will take to upgrade No. 21 EDG. Requiring that the CREVS have both a normal power source and an emergency power source available ensures that one train of the system will be available so that the Control Room can be occupied under these conditions. The probability of a loss of offsite power is very low due to the highly redundant design of the offsite power supply. Planned maintenance on three of the offsite power supplies and associated relaying and devices within the switchyards will be prohibited during the upgrade period to maintain the low probability of a loss of offsite power event. Number 12 CREVS train will continue to have its normal power source for all but approximately four days when the bus will be de-energized to allow bus work that is necessary to the tie-in of the Alternate AC diesel generator. Number 11 CREVS will have both its normal and emergency power supply available and this train is capable of maintaining the Control Room habitable. In addition, a temporary diesel generator will be installed to provide assurance that an emergency power source will be available to No. 12 CREVS. The compensatory measures that will be taken during this period will ensure that the proposed change does not involve a significant increase in 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 CREVS is not being modified by this proposed change. The system will continue to operate in the same manner. Number 21 EDG will operate in a similar manner after the upgrade and will be able to support unit operation after all the testing is completed. The installation of the temporary diesel generator during the upgrade period has been evaluated to ensure that it does not create any new accident initiators. 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 operability of the CREVS during Modes 1 through 4 ensures that the Control Room will remain habitable under all plant conditions. The proposed change does not affect the function of the CREVS. The proposed change will allow one train of the CREVS to be without a Class 1E emergency power supply for up to 30 days. This train will have the normal power supply available for all but approximately four days to allow necessary bus work. The other train of the CREVS will have both its normal and emergency power supplies during this period. Compensatory measures that will be taken include prohibiting planned maintenance on the required offsite power sources and installing a temporary diesel generator of sufficient capacity as a backup to the affected train. These measures will maintain the current margin of safety. The upgrade to the existing EDGs will provide additional margin for the electrical loading of 4 kV safety-related

busses. The completion of the No. 21 EDG upgrade will improve the margin of safety for the onsite electrical distribution system.

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

ENVIRONMENTAL ASSESSMENT

The proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes to an inspection or surveillance requirement. We have determined that the proposed amendment involves no significant hazards consideration, and that operation with the proposed amendment would result in no significant change in the types or significant increases in the amounts of any effluents that may be released offsite, and in no significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment is eligible for categorical exclusion as set forth in 10 CFR Part 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed amendment.

SCHEDULE

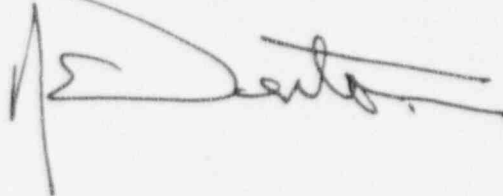
These changes are requested to be approved and issued by February 1, 1995. As discussed in the Background Section of this letter, issuance of this amendment is currently identified as impacting outage completion or continued plant operation.

SAFETY COMMITTEE REVIEW

These proposed changes to the Technical Specifications and our determination of significant hazards have been reviewed by our Plant Operations and Safety Review Committee and Offsite Safety Review Committee. They have concluded that implementing these changes will not result in an undue risk to the health and safety of the public.

Should you have any 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 23rd day of September, 1994, 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:


Notary Public

My Commission Expires:

2/2/98
Date

RED/DJM/dlm

Attachments: (1) Unit 1 Technical Specification Revised Page
(2) Unit 2 Technical Specification Revised Page
(3) Pre-Outage and Post-Outage Electrical Distribution Configuration Figures

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

ATTACHMENT 1

**UNIT 1
TECHNICAL SPECIFICATION
REVISED PAGE**

3/4 7-16