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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
Request for Amendment to Operating Licenses
(TAC Nos. M77337, M77338, M77407, M77408)

Gentlemen:

The Baltimore Gas and Electric Company (BG&E) hereby requests an Amendment to its Operating License Nos. DPR-53 and DPR-69 for Calvert Cliffs Unit Nos. 1 & 2, respectively, with the submittal of proposed changes to the Technical Specifications. These changes are proposed in response to Generic Letter 90-06, Resolution of Generic Issue 70, "Power-Operated Relief Valve and Block Valve Reliability," and Generic Issue 94, "Additional Low-Temperature Overpressure Protection for Light-Water Reactors," Pursuant to 10 CFR 50.54(f). In the initial response to Generic Letter 90-06 (Reference a), BG&E informed the NRC that any revisions to the Technical Specifications necessary to implement the applicable recommendations would be submitted by the end of the spring 1992 Unit 1 refueling outage. The outage was completed on August 16, 1992. However, we were informed by the NRC Staff during June that additional clarification was being prepared regarding Generic Letter 90-06. Our NRC Project Manager concurred with a slight delay in our submittal to allow us to consider this new information, which was provided verbally on June 17, 1992 and also in Reference (b). This information has been considered for inclusion in this response to NRC Generic Letter 90-06.

In our initial response, we stated we would keep you informed on our progress to evaluate an Augmented Quality (AQ) program and include Power Operated Relief Valves (PORVs) in that program. The PORVs, block valves, and associated control systems have been classified as AQ items and as such, will come under the controls of BG&E's AQ programs.

Additionally, our NRC Project Manager requested we clarify our commitment to implement a maintenance program for PORVs and block valves. We reviewed technical manuals for the PORVs and block valves. Our maintenance program meets and exceeds the vendor recommendations.

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CHANGE NO. 1

DESCRIPTION

The proposed amendment would revise the Technical Specifications for both Units 1 and 2 to improve the reliability of the Reactor Coolant System's power-operated relief valves (PORVs) and their associated block valves for overpressure protection during normal operation and anticipated transients. This requested change is based on the recommendations in Enclosure A of Generic Letter 90-06.

BACKGROUND

The Nuclear Regulatory Commission (NRC) has provided positions resulting from the resolution of Generic Issue 70 (GI-70), "Power-Operated Relief Valve and Block Valve Reliability," in Generic Letter 90-06, issued June 25, 1990. The NRC Staff positions delineated in Enclosure A of the Generic Letter include a request for pressurized water reactor (PWR) licensees that use or could use PORVs to perform any of several identified safety-related functions to submit modifications to their Technical Specifications to improve the reliability of the PORVs and their associated block valves. These Staff positions are based on technical findings and regulatory analysis as discussed in NUREG-1316, "Technical Findings and Regulatory Analysis Related to Generic Issue 70 -- Evaluation of Power-Operated Relief Valve and Block Valve Reliability in PWR Nuclear Plants." This report identifies safety-related functions that may be performed by PORVs and potential improvements to PORVs and block valves. In support of the resolution of GI-70, the Oak Ridge National Laboratory performed a study of PORV and block valve operating experience. Their report was issued as NUREG/CR-4692, "Operating Experience Review of Failures of Power Operated Relief Valves and Block Valves in Nuclear Power Plants," dated October 1987. The NRC Staff concluded from their review that PORV and block valve reliability could be improved and requested that PWRs that use or could use PORVs in safety-related functions revise their Technical Specifications to accomplish this reliability improvement.

On December 20, 1990, BG&E provided its initial response to Generic Letter 90-06 (Reference a). This response indicated that the role of the PORVs as a pressure relief component in Calvert Cliffs safety analyses has not changed from the original design for other than low temperature overpressure protection (LTOP). The response indicated that BG&E would, nonetheless, evaluate the guidance provided in the generic letter and request changes to incorporate the appropriate NRC staff positions. These changes are requested below.

REQUESTED CHANGE

Change Specification 3/4.3 of the Unit 1 and Unit 2 Technical Specifications and the associated Bases as shown on the marked-up pages attached to this transmittal. These changes to Technical Specification 3/4.3 include the following items:

1. Clarification of Actions (a), (c) and (d) by replacing the word "more" with "both" to better reflect the design of Calvert Cliffs, which includes only two PORVs.
2. Action (a) has been divided into new Actions (a), (b), and (c) to provide for different actions when the PORV(s) is (a) isolated due to excessive seat leakage and (b) inoperable for other causes.

3. New Action (a) incorporates the requirement to maintain power to a closed block valve(s) so that the block valve is operable and may be subsequently opened to allow the PORV to be used to control Reactor Coolant System (RCS) pressure.
4. New Action (a) is also clarified to permit continued operation for a limited period of time with the block valve(s) closed and power maintained to the block valve(s). This continued operation is limited to a period not to exceed the next refueling outage to allow maintenance to be performed on the PORVs to eliminate the seat leakage condition.
5. New Action (b) provides the actions that are to be taken when one PORV is inoperable due to causes other than excessive seat leakage. These actions include removing power from the block valve and require that shutdown be initiated if the PORV is not restored to operable status within five days.
6. New Action (c) provides the actions that are to be taken when both PORVs are inoperable due to causes other than excessive seat leakage. These actions are the same as those for one PORV inoperable with the exception that shutdown is required to be started in 72 hours if at least one PORV is not restored to operable status.
7. Actions (b), (c), and (d) have been changed to terminate the required shutdown actions once the RCS temperature is below the temperature for which LTOP is required (the first conditions for which the specification is not applicable). Specification 3/4.4.9.3 is applicable during conditions where LTOP is required. The current actions which require proceeding to cold shutdown are not appropriate since the applicability of the LCO does not extend past the hot standby mode.
8. New Action (d) has been revised to incorporate the proposed action in the generic letter when one or both block valves are inoperable. These actions included placing the associated PORV in override closed and requiring shutdown if both block valves are not restored to operable status within five days.

The above changes are based on the guidance provided in Generic Letter 90-06, Enclosure A, Attachment A-1. Exceptions to this guidance and additional changes are discussed below.

1. Addition - The applicability is revised to exclude Mode 3 at and below the temperature at which low temperature overpressure protection (LTOP) is required, and the Actions are similarly revised to require exiting these applicable conditions. References (c) and (d) issued appropriate Technical Specification revisions for application of Specification 3/4.4.9.3 during conditions where LTOP is required. Limiting the applicability of Specification 3/4.4.3 to above these conditions will prevent overlap and conflict of these requirements.
2. Exception - The new Action (a) is rewritten to better meet the intent of the Generic Letter. As stated in the Generic Letter, the intent is to keep the PORV and block valve operable when the PORV is isolated to control seat leakage. Maintaining power to the block valves allows the operators the flexibility to open the block valves so the PORVs can be used to control reactor pressure. The words inoperable and operable have been removed from the Action Statement to provide this flexibility. The requirement to initiate shutdown has been removed from this action as well. If the seat leakage from the PORV exceeds the Reactor Coolant System leakage limit of Technical Specification 3/4.4.6, the applicable Action Statement of Technical Specification 3/4.4.6 would be followed. If the block valve fails to function as required, Action (d) would be applicable.

3. Exception - Generic Letter 90-06 proposed an allowed out-of-service time (AOT) for one PORV inoperable due to causes other than excessive seat leakage to be 72 hours before unit shutdown is required to be started. The AOT we propose is five days to be consistent with the AOT required while in the LTOP region. Also, Generic Letter 90-06 proposed an AOT for when both PORVs are inoperable due to causes other than excessive seat leakage to be one hour. We have proposed an AOT of 72 hours to allow for possible PORV repairs, thereby avoiding unnecessary shutdowns and entering the region when PORVs are depended upon for LTOP. We have concluded that it would be safer to attempt repairs at Modes where the PORVs are not needed. The PORVs are not relied upon to mitigate the consequences of any design basis events.
4. Exception - Generic Letter 90-06 proposed a surveillance requirement to test the air control system by operating the solenoid air control valve and check valves on associated air accumulators. The specifications related to air-operated PORVs are not included since Calvert Cliffs PORVs are electrically powered. The design of the PORVs is discussed in the Updated Final Safety Analysis Report, Section 4.2.
5. Exception - The Generic Letter 90-06 proposed Surveillance Requirement 4.4.4.3 which would require testing of the emergency power supply for the motive and control power of the PORVs and their block valves has not been incorporated. This additional testing was intended to provide additional assurance that the PORVs and the block valves will function when required. However, at Calvert Cliffs, the electrical power supply for the PORVs and their block valves are supplied by a bus which is backed by an Emergency Diesel Generator (EDG). The transfer from the normal power supply to the EDG power supply for this bus occurs on an under-voltage condition. This transfer is already tested under Technical Specification 4.8.1.1.2.d.3. Therefore, no additional surveillance is needed to assure appropriate transfer of the power supply of either the PORVs or the block valves. This basis for not including the proposed Surveillance Requirement has been previously accepted in a Calvert Cliffs License Amendment [Reference (c)].
6. Exception - A surveillance requirement was proposed in Generic Letter 90-06 to require operation of the PORVs through the complete cycle of full travel in Mode 3 or 4. This testing is intended to provide additional assurance that the PORVs will function when required under LTOP conditions. However, the design of our PORVs is such that the valve opens more efficiently at higher pressures. Also, the valve manufacturer has stated that the PORVs used at Calvert Cliffs do not experience significant changes due to thermal effects. The manufacturer has stated that our PORVs will respond more quickly at the higher RCS pressure, therefore the testing done at higher than LTOP pressure may not actually prove the operability of the valve for LTOP conditions. Furthermore, testing the PORV in Mode 3, as would be required at Calvert Cliffs to meet the requirements of the Generic Letter, would increase the probability of a loss-of-coolant accident (LOCA) under conditions of a high core decay heat content. Currently, we test the LTOP circuitry in Mode 3 and prior to LTOP conditions to provide assurance that the PORVs will operate in LTOP mode. Also, the valves are stroke-time tested in Mode 5 with a frequency equal to that recommended by Generic Letter 90-06. Stroke testing under these reduced pressure conditions is a better indicator of valve condition, and allows for better control of plant safety in the event of a stuck-open valve. Also, the PORVs remain in service and operable during power operation following the last stroke test at Mode 5. Therefore, an additional stroke test is not needed to demonstrate the operability of the PORV before entry into the LTOP region during a

cooldown. In addition, as stated in Reference (f) and approved in Reference (g), the status of the PORVs has been upgraded to ASME Section XI, Category B cold shutdown exercised valves.

Finally, the current plant configuration does not provide a means for the operator to open the PORV from the Control Room. Specifically, there exists no switch on the control panel to remotely open the PORVs. To test the PORVs as recommended in the Generic Letter would require us to perform this test from the back of the control board using jumpers. There is also no means for the operator to close the PORV from the Control Room if the valve were to stick open following this test. Substantial modifications to the PORV control system and Control Room panel would be required to provide the means to do this test safely. Baltimore Gas and Electric Company does not believe the proposed additional requirement for PORV stroke testing provides sufficient, if any, benefit to offset the attendant increase in potential for a LOCA, or the cost in achieving the capability to perform the test. The current testing performed at Calvert Cliffs, when considered in light of the design features of our PORVs, provides adequate assurance that the PORVs will reliably perform their design function during LTOP events.

7. Exception - Current Technical Specifications require that the block valves be cycled at least once per 92 days unless they are closed to isolate an inoperable PORV. Generic Letter 90-06 proposed exempting the block valve from the cycling requirement when the PORV is inoperable for causes other than excessive seat leakage. The Generic Letter would add to the Technical Specifications the requirement to cycle the block valves if they are closed to isolate a PORV with excessive seat leakage. We have not incorporated this proposed modification. We propose to exempt the block valves from the surveillance requirement when they are closed to either isolate a PORV that has excessive seat leakage or a PORV that is inoperable for other reasons. Cycling the block valve when it is closed to isolate a PORV with excessive seat leakage could result in degrading the PORV seat further. Opening the block valve would allow steam to cut the PORV seat. By exempting the block valves from this requirement also precludes the need to cycle the valves with full system differential pressure or when maintenance is being performed to restore an inoperable PORV to operable status.

Additional Bases are also included to supplement the requested changes to the Technical Specifications.

SAFETY ANALYSES/JUSTIFICATION

The PORVs provide overpressure protection for normal operation and for limiting the number of challenges to the pressurizer code safety valves. However, the safety analysis for Calvert Cliffs presented in the Updated Final Safety Analysis Report (UFSAR) Chapter 14 does not credit the PORVs in mitigation of the consequences of any design basis events. Events which could result in high reactor coolant system pressure, such as loss of feedwater flow or control element assembly withdrawal, are analyzed assuming the PORVs to be inoperable. These events depend on the pressurizer code safety valves to control overpressure conditions.

The Generic Letter indicates that the role of PORVs has evolved at many nuclear power plants such that PORVs are now relied on to perform various safety functions. However, the function of the PORVs has not changed at Calvert Cliffs from the original design and the valves remain classified

non-safety related. The PORVs continue to provide only backup pressure relief capability for events which challenge the code safety valves.

One of the evolving safety-related functions discussed in Generic Letter 90-06 is the mitigation of a steam generator tube rupture. In this event, leakage of reactor coolant from the primary system to the secondary system eventually results in secondary system pressurization. This pressurization results in secondary system safety valves lifting, allowing the leaked reactor coolant to escape to the atmosphere. To prevent this release, the primary system pressure can be rapidly decreased by either the normal pressurizer sprays, the auxiliary pressurizer sprays, or the PORVs. While Calvert Cliffs may use any of these methods, none are assumed to be used in the UFSAR Chapter 14.15 analysis of steam generator tube rupture. This assumption maximizes the analyzed radiological consequences of the event which are shown to be within the acceptance criteria of 10 CFR Part 100.

Another evolving safety-related function of the PORVs discussed in Generic Letter 90-06 is mitigation of low temperature overpressure events. These events occur outside the applicable modes of operation for this Technical Specification, but the proposed revisions will improve the availability of the PORVs for modes of operation when LTOP is required. Change No. 2 discusses changes to the Overpressure Protection Systems Technical Specification.

The third evolving safety function of the PORVs discussed in Generic Letter 90-06 is plant cooldown capability pursuant to compliance with Branch Technical Position RSB 5-1. However, Calvert Cliffs does not rely on the PORVs for this decay heat removal function. Calvert Cliffs performed "Post-TMI" analysis and testing to demonstrate the capabilities of the PORVs, however, these capabilities are not credited in the safety analysis and are only credited for the mitigation of "beyond design basis" events.

Several other "beyond design basis" functions are also mentioned in the Generic Letter, such as reactor coolant system venting, feed and bleed cooling, and mitigation of anticipated transients without scram. The capability to perform these functions, though "beyond design basis", could be improved by increasing the availability of the PORVs and their associated block valves. The proposed changes improve PORV availability by maintaining power to a closed block valve when that block valve is only closed to control PORV seat leakage and by requiring shutdown if a PORV(s) is inoperable for reasons other than excessive seat leakage. There is also an improvement in the availability of the LTOP system by requiring shutdown if the block valves cannot be restored to operable status.

Action Statement (a) was rewritten to better meet the intent of the Generic Letter. As stated in the Generic Letter, the intent is to keep the PORV and block valve operable when the PORV is isolated to control seat leakage. Closure of the block valve establishes reactor coolant pressure boundary integrity with a PORV that has excessive seat leakage. Maintaining power to the block valves allows the operators the flexibility to open the block valves so the PORVs can be used to control reactor pressure. The words inoperable and operable have been removed from the Action Statement to provide this flexibility. The requirement to initiate shutdown has been removed from this Action as well. If the seat leakage from the PORV exceeds the Reactor Coolant System leakage limit of Technical Specification 3/4.4.6, the applicable Action Statement of Technical Specification 3/4.4.6 would be followed. If the block valve fails to function as required, Action (d) would be applicable.

The removal of power from a closed block valve for a PORV inoperable due to causes other than excessive PORV seat leakage [Action Statements (b) and (c)] provides additional assurance that the block valve will not be inadvertently opened when the condition of the PORV is uncertain. In addition, the AOT for the PORVs has been increased from the proposed times in the Generic Letter

to five days for one PORV inoperable and 72 hours for when both PORVs are inoperable due to causes other than excessive seat leakage. At Calvert Cliffs, the PORVs have no safety-related function in Modes 1, 2 and 3 above the LTOP region. They do have an LTOP safety function when the unit is in the LTOP region. Therefore, we propose that the AOT required for Action (b) be consistent with the AOT allowed for when the unit is in the LTOP region. The proposed AOT of 72 hours when both PORVs are inoperable for causes other than excessive seat leakage will allow possible PORV repairs, thereby avoiding unnecessary shutdowns. We have concluded that it would be safer to attempt repairs at Modes where the PORVs are not needed. The PORVs are not relied upon to mitigate the consequences of any design basis events. Therefore, there is no challenge to plant safety during the proposed 72 hour AOT.

Action Statement (d) has been revised to establish remedial measures that are consistent with the function of the block valves. The primary function of a block valve is to isolate a stuck-open PORV. Therefore, if the block valve cannot be restored to operable status within one hour, the remedial action is to place the PORV in override closed to preclude its automatic opening for an overpressure event and to avoid the potential for a stuck-open PORV at a time that the block valve is inoperable. The time allowed to restore the block valve(s) to operable status is based upon the remedial action time limits for inoperable PORVs per Action Statements (b) and (c) since the PORVs are not capable of automatic mitigation of an overpressure event when placed in override closed. When the block valve is inoperable, placing the PORV in override closed is sufficient to preclude the potential for a stuck-open PORV that could not be isolated because of an inoperable block valve.

The proposed surveillance requirement for testing the air control system for the PORVs was not included since the PORVs used at Calvert Cliffs are electrically powered. Also, the proposed requirement in Generic Letter 90-06 for testing the transfer from the normal to the emergency power supply for the motive and control power of the PORVs and their block valves has not been incorporated. The power for the PORVs and their block valves is supplied by a bus which is backed by an EDG. The transfer from the normal power supply to the EDG power supply for this bus occurs on an under-voltage condition. The bus transfer from normal to emergency power is already tested on a refueling basis during the loss of offsite power testing conducted under Technical Specification 4.8.1.1.2.d.3.

The requirement to operate the PORVs through a complete cycle of full travel in Mode 3 has not been incorporated for several reasons. First, the design of our PORVs is such that the valve opens more efficiently at high pressures and the valve manufacturer has stated that the PORVs used at Calvert Cliffs do not experience significant changes due to thermal effects. Therefore, testing the PORVs at a pressure higher than the LTOP pressure may not actually prove that the valve would be operable under LTOP conditions. Second, the PORVs remain in service and operable after stroke testing and, therefore, do not require an additional stroke test to demonstrate operability of the PORV before entry into the LTOP region. Third, testing the PORVs in Mode 3 may increase the probability of a LOCA under conditions of high core decay heat. We do not believe the proposed change to the PORV stroke testing provides sufficient benefit to offset the attendant increase in the potential for a LOCA. Also, the status of the PORVs has been upgraded to ASME Section XI, Category B cold shutdown exercised valves, as stated in Reference (f) and approved in Reference (g). Lastly, the current practice of testing the LTOP circuitry in Mode 3 prior to reaching LTOP conditions on a shutdown, and stroke testing the PORVs in Mode 5 with a frequency equal to that recommended in the Generic Letter, provides assurance that the PORVs will operate in LTOP conditions. The current plant configuration does not provide a means for the operator to lift the PORV from a switch in the Control Room. To test the PORVs as recommended in the Generic Letter would require us to perform this test from the back of the control board using jumpers. There is no means for the operator to close the PORV from the Control Room if the valve were to stick

open following this test. Substantial modifications to the PORV control circuit and Control Room panels would be required to provide the means to do this test safely.

The proposed modification to the surveillance requirement for the block valves has not been incorporated. We propose to exempt the block valves from the surveillance requirement when they are closed to either isolate a PORV that has excessive seat leakage or a PORV that is inoperable for other reasons. Cycling the block valve when it is closed to isolate a PORV with excessive seat leakage could result in degrading the PORV seat further. Opening the block valve would allow steam to cut the PORV seat. By exempting the block valves from this requirement also precludes the need to cycle the valves with full system differential pressure or when maintenance is being performed to restore an inoperable PORV to operable status.

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 amendment:

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

Implementation of these changes will increase the availability of the power-operated relief valves (PORVs) and their associated block valves. The increased availability is obtained through maintaining power to the block valves which are closed to control PORV seat leakage and by requiring shutdown and repairing the PORV(s) if the PORV(s) is inoperable for reasons other than excessive seat leakage. There is also an improvement in the availability of the LTOP system by requiring shutdown if the block valves cannot be restored to operable status. Closing the block valves to control excessive PORV seat leakage establishes reactor coolant pressure boundary integrity. Maintaining power to the block valve provides the flexibility of reopening the valves to allow the PORV to be used to control reactor pressure.

An inadvertent opening of both PORVs is considered as an initiator for a Reactor Coolant System (RCS) depressurization transient in Updated Final Safety Analysis Report (UFSAR), Section 14.8. This transient, if not terminated, would be considered a small break loss of coolant accident (LOCA). The small break LOCA analyses results are provided in Section 14.17. However, the RCS depressurization transient is considered to occur during power operation. Closing the block valve for a PORV that is inoperable due to causes other than excessive seat leakage and removing power to the block valves assures that the valve will not be inadvertently opened when the condition of the PORV is uncertain. Since this change does not propose opening the PORVs during power operation, and the power is removed from the closed block valve, there is no increase in the probability of this event. The change to the Action Statement to close the block valve to isolate a PORV that has excessive seat leakage and maintain power to the block valve does not significantly increase the probability of a small break LOCA. This revision will allow the block valve to remain operable and to be subsequently opened to allow the PORV to be used to control reactor pressure. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Placing the PORV in override closed when the block valve is inoperable establishes remedial measures to preclude the potential for having a stuck-open PORV that could not be isolated because of an inoperable block valve. The time allowed to restore the block valve(s) to operable status is based upon the remedial action time limits for an inoperable PORV.

The allowed out-of-service times (AOT) have been revised to provide adequate time to reach the non-applicable condition. The AOT for inoperable PORV(s) due to causes other than excessive seat leakage have been established to be consistent with their LTOP safety function.

These proposed changes will increase the availability of the PORVs and their associated block valves for overpressure protection during normal operation and anticipated transients. Additionally, there is no change in the function of the PORVs or the block valves in response to any previously evaluated accidents. Therefore, the proposed changes will not include 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 changes to the Action Statements for the PORVs and the associated block valves will improve the availability of these valves for overpressure protection during normal operation and anticipated transients. These proposed changes do not involve a change in the design of the PORVs or the block valves and do not make a change in the function of these valves. Therefore, the proposed changes would 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 proposed changes will improve the availability of the PORVs and the block valves for overpressure protection during normal operation and anticipated transients and will ensure that the margin of safety for overpressure protection events is maintained for the LTOP region. The proposed changes do not impact the setpoints or response of the PORVs or block valves. Therefore, the changes would not involve a significant reduction in a margin of safety.

CHANGE NO. 2

DESCRIPTION

The proposed amendment would revise the Technical Specifications for both Units 1 and 2 to improve the availability of the Reactor Coolant System's power-operated relief valves (PORVs) for low temperature overpressure protection. This requested change is based on the recommendations in Enclosure B of Generic Letter 90-06.

BACKGROUND

The Nuclear Regulatory Commission (NRC) has provided positions resulting from the resolution of Generic Issue 94 (GI-94), "Additional Low Temperature Overpressure Protection for Light Water Reactors," in Generic Letter 90-06, issued June 25, 1990. The NRC Staff positions delineated in

Enclosure B of the Generic Letter includes a request for licensees operating Combustion Engineering pressurized water reactors to submit modifications to their Technical Specifications to improve the availability of the PORVs for low temperature overpressure protection. These Staff positions are based on technical findings and regulatory analysis as discussed in NUREG-1326, "Regulatory Analysis for the Resolution of Generic Issue 94, Additional Low Temperature Overpressure Protection for Light Water Reactors." This report is based on a study performed by Battelle Pacific Northwest Laboratories of actual operating reactor experience to determine the risks associated with current low temperature overpressure protection systems. Their report was issued as NUREG/CR-5186, "Value/Impact Analysis of Generic Issue 94, Additional Low Temperature Overpressure Protection for Light Water Reactors."

On December 20, 1990, BG&E provided its initial response to Generic Letter 90-06 [Reference (a)]. This response indicated that BG&E would evaluate the guidance provided in the Generic Letter and request license changes to incorporate the appropriate NRC staff positions. These changes are requested below.

REQUESTED CHANGE

Change Specification 3/4.4.9.3 of the Unit 1 and Unit 2 Technical Specifications as shown on the marked-up pages attached to this transmittal. These changes to Technical Specification 3/4.4.9.3 include the following items:

1. The new Action (b) is incorporated to reduce the allowed out-of-service-time (AOT) for one inoperable PORV in Modes 5 and 6.
2. The remaining actions are renumbered.

As indicated in Generic Letter 90-06, Enclosure B, Attachment B-2, Item 1 above was the only required change. These changes are taken directly from the guidance of the Generic Letter with the following additions and exceptions.

1. Addition - Action (a) is revised to include that portion of Mode 3 during which low temperature overpressure protection is required for Calvert Cliffs. This is necessary to provide an appropriate Action statement for operation in Mode 3 at temperatures less than the LTOP entry conditions. The LTOP entry conditions are fully discussed in the LTOP System Descriptions provided in our submittals of August 13, 1990 [Reference (h)], and October 22, 1990 [Reference (i)].
2. Exception - The time allowed to depressurize and vent after attempts to restore the overpressure protection systems is increased from the Generic Letter proposed 8 hours to 48 hours. As discussed in our submittals of May 14, 1990 [Reference (j)], and October 22, 1990 [Reference (i)], and subsequently approved as Amendments 145 (Unit 1) [Reference (k)] and 131 (Unit 2) [Reference (l)], 48 hours is considered to be the appropriate practical time to complete a controlled, deliberate cooldown, and orderly depressurization and venting of the RCS from the low temperature overpressure protection (LTOP) entry conditions.
3. Addition - The LCOs (3.4.9.3.a.1 & 2) have been revised to require the block valve to be open when in Minimum Pressurization Temperature (MPT) Enable. To meet the

assumptions of PORV operability in the LTOP calculations, the block valves must be open when the plant is in MPT Enable.

4. Addition - Surveillance Requirement 4.4.9.3.1.c has been clarified by replacing the word "isolation" with "block." This revision will make the discussion of the valve consistent throughout the Technical Specifications.

Changes to the Bases are provided to reference the origin of the new Action (b) and to explain the extended time for depressurization and venting.

SAFETY ANALYSES/JUSTIFICATION

Low temperature overpressure protection capability at Calvert Cliffs is discussed in the Updated Final Safety Analysis Report, Section 4.1.4.3.3. Also discussed there are the design basis events and criteria used in the analysis to assure the capability of the plant to withstand such an event. Baltimore Gas and Electric Company has put in place additional controls to ensure adequate protection exists for all postulated events. Part of the administrative control put in place is to maintain a steam bubble whenever practical. Therefore, we spend very little time water solid. The requested change does not impact that description or its results in any way. The requested change would only decrease the AOT for degraded overpressure protection systems while in Modes 5 and 6 and in a condition which requires LTOP. This decrease in the AOT will increase availability of the overpressure protection systems for LTOP.

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 amendment:

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

Implementation of the shortened allowed out-of-service time (AOT) for the low temperature overpressure protection (LTOP) systems in Modes 5 and 6 will increase the availability of this system. The plant is at the highest risk from low temperature overpressure transients with the reactor coolant temperature less than or equal to 200°F, especially when in a water-solid condition. The additional administrative restriction provides assurance that the LTOP system is available if needed for a low temperature overpressure transient. Requiring the block valves to be opened when in the LTOP region will allow the power-operated relief valves (PORVs) to perform their LTOP safety function.

The proposed changes do not impact the current design or analysis for a low-temperature overpressure event. There is no change in the function of the low temperature overpressure protection system in response to any previously evaluated event so there is no change in the probability or consequences. Therefore, these changes would not involve a significant increase in the probability or consequences of any accident previously evaluated.

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

The proposed changes do not involve a change in the design or operation of the low temperature overpressure protection systems. The decrease in the AOT for a PORV inoperable in Modes 5 and 6 will provide additional availability of the LTOP system. Requiring the block valves to be open while in the LTOP region will ensure that the PORVs will function as required. Therefore, this change would 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 changes do not impact the setpoints or response of the LTOP systems, but increase the availability of the systems by decreasing the AOT for a PORV in Modes 5 and 6. Having the block valves open will ensure that the margin of safety that the LTOP system provides for low temperature overpressure transients is maintained. Therefore, the changes would not involve a significant reduction in the margin of safety.

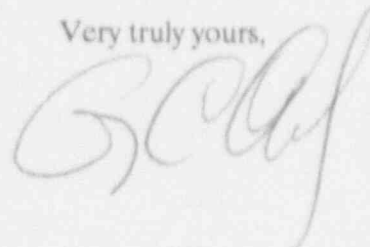
SCHEDULE

These changes are requested to be approved and issued by June 1, 1993. However, issuance of this amendment is not currently identified as having an impact on 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 our Off-Site Safety Review Committee, and they have concluded that implementation of these changes will not result in an undue risk to the health and safety of the public.


Very truly yours,



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

I hereby certify that on the 1st day of September, 1992, before me, the subscriber, a Notary Public of the State of Maryland in and for Calvert County, personally appeared George C. Creel, 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 information 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 information on behalf of said Corporation.

WITNESS my Hand and Notarial Seal:


Notary Public

My Commission Expires:

February 2, 1994
Date

GCC/ERG/DJM/erg/dlm

Attachments 1) Unit 1 Revised Technical Specification and Bases Pages
2) Unit 2 Revised Technical Specification and Bases Pages

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

REFERENCES:

- (a) Letter from Mr. G. C. Creel (BG&E) to the NRC Document Control Desk, dated December 20, 1990, "Response to Generic Letter 90-06" (TAC Nos. M77337 and M77338)
- (b) Letter from Mr. D. G. McDonald (NRC) to Mr. G. C. Creel (BG&E), dated July 30, 1992, Staff Review of Generic Letter 90-06 (Unit 1 TAC Nos. M77337/M77407 and Unit 2 TAC Nos. M77338/M77408)
- (c) Letter from Mr. D. G. McDonald (NRC) to Mr. G. C. Creel (BG&E), dated September 18, 1990, Issuance of Unit 1 Amendment No. 146 (TAC No. M77292)
- (d) Letter from Mr. D. G. McDonald (NRC) to Mr. G. C. Creel (BG&E), dated December 18, 1990, Issuance of Unit 2 Amendment No. 131 (TAC No. M77840)
- (e) Letter from Mr. R. A. Clark (NRC) to Mr. A. E. Lundvall, Jr. (BG&E), dated April 21, 1981, Issuance of Unit 1 Amendment No. 53 and Unit 2 Amendment No. 36
- (f) Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated August 1991, "Requests for Relief from ASME Section XI Requirements" (TAC Nos. M76786 and M76787)
- (g) Letter from Mr. R. A. Capra (NRC) to Mr. G. C. Creel (BG&E), dated September 11, 1991, "Relief Requests from the ASME Code Requirements, Calvert Cliffs Nuclear Power Plant, Unit 1 (TAC No. M80484) and Unit 2 (TAC No. M80485)"
- (h) Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated August 13, 1990, License Amendment Request
- (i) Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated October 22, 1990, License Amendment Request
- (j) Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated May 14, 1990, License Amendment Request (TAC No. 76129)
- (k) Letter from Mr. D. G. McDonald (NRC) to Mr. G. C. Creel (BG&E), dated July 24, 1990, Issuance of Unit 1 Amendment No. 145 (TAC No. M76130)
- (l) Letter from Mr. D. G. McDonald (NRC) to Mr. G. C. Creel (BG&E), dated December 18, 1990, Issuance of Unit 2 Amendment No. 131 (TAC No. M77840)