BALTIMORE
GAS AND
ELECTRIC

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GEORGE C. CREEL
VICE PRESIDENT
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March 25, 1992

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit No. 2; Docket No. 50-318
Request for Emergency License Amendment: Surveillance Requirements

Gentlemen:

Baltimore Gas and Electric Company (BG&E) hereby requests an Emergency Amendment to its Operating License No. DPR-69 for Calvert Cliffs Unit No. 2, to allow operation of Unit 2 after completion of modifications to the Containment Spray System, the Iodine Removal System, and the Containment Cooling System. These modifications will change the type of Engineered Safety Features Actuation System (ESFAS) signal that starts these systems. Accordingly, we request a change to the surveillance requirements which addresses the ESFAS signals to these systems, pursuant to 10 CFR 50.90.

DESCRIPTION

During the ongoing Electrical Distribution System Functional Inspection (EDSFI), an unusual , and highly improbable, accident scenario was identified which has the potential to adversely impact the operation of our onsite electrical distribution system during a loss of offsite power. Specifically, it could have resulted in greater than expected voltage drops at the Emergency Diesel Generators (EDG), which could have impacted the proper operation of some engineered safety features. In the interest of safety, all of the EDGs were declared inoperable and both Units were subsequently shut down. Unit 1 has entered a scheduled refueling outage. Modifications are being performed to eliminate the possibility of an excessive voltage drop at the EDGs. These modifications will result in changes to the ESFAS signals supplied to some equipment and will require changes to the surveillance requirements for this equipment.

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BACKGROUND

During accident conditions accompanied by a loss of offsite power, the EDG sequencers will automatically load the EDGs in a controlled manner. The sequencer initially blocks the Safety Injection Actuation Signal (SIAS) and Containment Spray Actuation Signal (CSAS) to the equipment to be sequenced and then unblocks these signals in controlled steps. Engineered Safety features equipment requires two different signals to start; an accident response signal (SIAS, CSAS, etc.) and a permissive signal from the EDG sequencer. This unblocking is the permissive signal from the sequencer, which by itself will not start the equipment. The equipment must have an additional signal (SIAS, CSAS, etc.) to start. Because the loss-of-coolant incident (LOCI) sequencer is initiated upon receipt of a SIAS, equipment which is also started on a SIAS signal will receive both signals and start as soon as the sequencer unblocks it. However, some equipment does not start upon receipt of a SIAS and must have an additional signal present to start. Both the Containment Spray System and the Containment Cooling System must also receive a CSAS in order to start after the sequencer unblocks it. The Iodine Removal System requires a Containment Isolation Signal (CIS) to start after the sequencer unblocks it. These additional signals may not be present at the time the SIAS actuates because of their different initiation setpoints. The additional signals add an element of uncertainty to the actual start time of this equipment. This uncertainty could lead to a situation where equipment which is assumed to start at sequencer step 3 is not started until sequencer step 7, which could lead to the simultaneous starting of the equipment from two different steps. This could cause low voltage conditions in the electrical distribution system and prevent safety equipment from operating properly.

To eliminate the uncertainty associated with the equipment start time, a modification is being performed which will change the start signals of the containment spray pumps, the containment cooler fans and the iodine removal units. After the modifications are performed, these components will receive their start signals from a SIAS only.

REQUESTED CHANGE

The Technical Specifications for this equipment specifies which ESFAS signal must be used to test the equipment during refueling intervals. The proposed changes to the Technical Specifications will change the specific signal name to a requirement that the equipment be tested utilizing "the appropriate ESFAS test signal". The affected Technical Specifications are: 4.6.2.1.b.1, 4.6.2.1.b.2, 4.6.2.2.b, and 4.6.3.1.d.2.

The Technical Specification changes being requested are similar for the four affected Technical Specifications. Technical Specification 4.6.2.1.b.1 and 2 address some of the surveillance requirements for the Containment Spray System. The Technical Specification requires that, ". . . each automatic valve in the flow path actuates to its correct position on Safety Injection Actuation test signal." We propose to change the Technical Specification to, ". . . each automatic valve in the flow path actuates to its correct position on the appropriate ESFAS test signal." The containment spray pump surveillance currently requires that the spray pump start automatically on a containment recirculation test signal. Similar wording has been proposed to require that the spray pump start automatically on receipt of the appropriate ESFAS test signal. Similarly, Technical Specification 4.6.2.2.b addresses the start signals required by the containment cooling units. The proposed change would replace the specific signal name with the generic wording described above. Technical Specification 4.6.3.1.d.2 addresses the surveillance testing for the iodine removal units. It requires that the filter trains start upon receipt of a containment isolation test signal. We are proposing to change the wording of the surveillance to eliminate the reference to a particular ESFAS test signal and substitute the generic wording proposed above.

SAFETY ANALYSIS / JUSTIFICATION

The function of the Containment Spray System is to limit the rise in containment atmosphere pressure and temperature after an accident, and thus reduce the possibility of leakage of airborne radioactivity to the outside environment. As currently designed, the containment spray pumps are started by a CSAS. To prevent an inadvertent actuation of containment spray in the case of an undesired CSAS, the containment spray valves are opened only by a SIAS. The modification that will be performed will reverse this arrangement of signals and equipment; the containment spray pumps will start on a SIAS and the containment spray valves will open on a CSAS. The containment pressure setpoint for a CSAS is 4.25 psig, while the pressure setpoint for a SIAS is 2.8 psig. By changing the signals on the containment spray pumps, the containment spray pumps would be started at the lower setpoint pressure. The containment pressure/temperature response to a Loss-of-Coolant Accident (LOCA), as calculated for Updated Final Safety Analysis Report (UFSAR) Section 14.20 is unchanged by this modification because containment spray is assumed to commence 60 seconds after pressure in the containment reaches 4.75 psig. The opening of the containment spray valves on a CSAS ensures that initiation of containment spray is still bounded by the UFSAR analyses. The function of the containment spray system is unchanged. Because the start signals for the containment spray pumps and valves have been changed, a change to the surveillance requirements which describe the test signals for these components is necessary.

The function of the containment Air Cooling System is to limit the containment atmosphere pressure and temperature after an accident, and thus reduce the possibility of leakage of airborne radioactivity to the outside environment. As currently designed, the air cooler fans receive their low speed start signal from CSAS. Additionally, the service water outlet valves for the air coolers open upon receipt of a CSAS. A modification is being performed which will replace the CSAS start signals with a SIAS start signal. Because SIAS is actuated before CSAS on high containment pressure (2.8 psig versus 4.25 psig), the air coolers would start sooner in a pressurization transient than previously assumed. There is no detrimental effect to starting the air coolers earlier in a transient and it would have no impact on long-term containment response. Because the start signal for the containment air coolers has been modified, a change to the surveillance requirements which address the test signals for the air coolers is necessary.

The iodine removal units are designed to collect the iodine which could be released into the containment atmosphere following a postulated accident. The fans would start on a CIS in the current design. As in the systems described above, the fan start signal is being changed from a CIS to a SIAS. Although both CIS and SIAS are actuated at a containment pressure of 2.8 psig, SIAS can also be actuated by a low pressurizer pressure condition. By switching the signal from CIS to SIAS, the iodine removal units might be actuated during an event which did not result in containment pressurization. There is no detrimental effect to operating the iodine removal units during a transient in which they might not be needed. The effectiveness of the charcoal is tested after every 720 hours of operation to ensure that they still retain the capacity for iodine removal assumed in the accident analyses. Because the start signal for the iodine removal units has been changed, a change to the surveillance requirement which addresses the test signal for the iodine removal units is necessary.

Other systems are being similarly modified, however, there is no impact on the Technical Specifications from these additional modifications.

DETERMINATION OF NO SIGNIFICANT HAZARDS

This proposed change has been evaluated against the standards in 10 CFR 50.92 and has been determined to involve no significant hazards considerations, in that operation of the facility in accordance with the proposed amendment would not:

1. *involve a significant increase in the probability or consequences of an accident previously evaluated; or*

   The changes to the surveillance requirements associated with the Containment Spray System, the Containment Cooling System and the Iodine Removal System reflect the changes made to the Engineered Safety Features Actuation System (ESFAS) signals that this equipment receives. The proposed changes will ensure that the equipment continues to be tested in a manner consistent with its safety function by verifying that the equipment responds as required to the appropriate ESFAS signal. Therefore, there has been no increase in the probability or consequences of a previously evaluated accident.

2. *create the possibility of a new or different type of accident from any accident previously evaluated; or*

   The change in test signal requirements reflects the change made to the ESFAS signals received by the equipment. No new test requirements have been added, nor have any been deleted. The equipment will not be tested in a manner different than the existing test requirements. Therefore, the possibility of a new or different type of accident from any previously evaluated has not been created.

3. *involve a significant reduction in a margin of safety.*

   The proposed Technical Specification changes ensure that the affected equipment will continue to be tested in a manner consistent with its safety function. No additional requirements are being proposed and no existing testing requirements are being removed. Therefore, there is no reduction in the margin of safety associated with these testing requirements.

STATEMENT OF EMERGENCY CIRCUMSTANCES

The Technical Specifications, unless amended, would prevent Unit 2 from starting up on schedule. Therefore, we request that this amendment be treated as an emergency change. This situation occurred as the result of our evaluation of the response of the onsite electrical distribution system to a specific accident scenario. During that evaluation, we determined that the electrical distribution system may not have functioned properly, thus preventing safety equipment from functioning properly. In response, we are undertaking improvements to the onsite electrical distribution system so that it would function properly during this specific accident scenario. These modifications will change the actuation signal for several engineered safety features resulting in a corresponding change in the Technical Specification surveillance requirements. This situation could not have been avoided because it is based on an unusual and highly improbable scenario. Application for an amendment was made as soon as possible after the need was identified.

Unit 2 is currently in a forced outage to perform improvements to the electrical distribution system. Following the modifications, the Containment Spray System, the Containment Cooling System and the Iodine Removal System will be considered inoperable because of their inability to satisfy Surveillance Requirements 4.6.2.1.b.1, 4.6.2.1.b.2, 4.6.2.2.b, and 4.6.3.1.d.2, respectively. Failure to satisfy these requirements would prohibit a Mode change.

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 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.

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 25th day of March, 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 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:

Dora L. McCready
Notary Public

My Commission Expires:

January 1, 1994
Date

GCC/PSF/psf/dlm

Attachments

cc: D. A. Brune, Esquire
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