



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 97 AND 79

TO FACILITY OPERATING LICENSE NOS. DPR-53 AND DPR-69

BALTIMORE GAS AND ELECTRIC COMPANY

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT NOS. 1 AND 2

DOCKET NOS. 50-317 AND 50-318

Introduction

By applications for license amendments dated April 9, 1984 and June 29, 1984, Baltimore Gas and Electric (BG&E) requested changes to the Technical Specifications (TS) for Calvert Cliffs Units 1 and 2. The proposed amendments would change the Unit 1 and Unit 2 TS to reflect: (1) a change to the surveillance requirements for fire pumps to allow an alternate test method, (2) correction of a typographical error in a Unit 1 fire pump surveillance test, (3) clarification and correction of a typographical error concerning fire hose stations, (4) clarification of operability requirements for the component cooling water system, (5) clarification of valve surveillance for component cooling, service water and salt water systems, and (6) provision for backup instrumentation for the remote shutdown, wide range neutron flux instrumentation.

These changes to the TS are in partial response to the applications dated April 9, 1984 and June 29, 1984. The remaining issues addressed in these applications will be addressed in future correspondence.

Discussion and Evaluation

Calvert Cliffs Units 1 and 2 TS 3/4.7.11, "Fire Suppression Systems," includes operability and surveillance requirements for the electric and diesel powered fire pumps. One such surveillance requirement, applicable to both diesel and electric powered pumps, requires a monthly test by operating these pumps "... on recirculation flow." The term "recirculation" means the establishment of a flow path by which a quantity of fluid discharged from the pump is routed back to the suction side of the pump. BG&E has proposed a change to TS 3/4.7.11 to delete the phrase "... on recirculation flow" to allow for use of an alternate test method for the diesel and electric powered fire pumps.

The National Fire Codes, Volume 2, Chapter 20, Section 26, 1983 requires each fire pump to have a circulation relief valve. The code states that,

Each pump shall be provided with an automatic relief valve set below the shutoff pressure at minimum expected suction pressure. It shall provide circulation of sufficient water to prevent the pump from overheating when operating with no discharge.

BG&E has proposed that these valves be utilized to provide a flow path in lieu of a recirculation flow path.

Our review of the alternate test method, involving the establishment of a fire pump flow path via the circulation relief valve, indicates that it provides an acceptable monthly demonstration of fire pump operability. Since the alternate test method is acceptable, use of this test will continue to demonstrate the reliability of the fire pumps. We therefore conclude that the proposed change to TS 3/4.7.11 is acceptable.

An additional change to Unit 1 TS 3/4.7.11 has been proposed to correct a typographical error. The word "fluch" in TS 4.7.11.1.1.d should actually be "flush." The proposed change has no effect on TS 4.7.11.1.1.d other than to correct a typographical error and therefore we find the proposed change to be acceptable.

BG&E has proposed to correct a typographical error in TS Table 3.7-6, "Fire Hose Stations." Entry number 3 Table 3.7-6 contains the words "... Aux Feed Water Pipe Rooms" which should actually be "Aux Feedwater Pump Rooms." The proposed change to TS Table 3.7-6 has no effect other than the correction of the typographical error and is therefore acceptable.

BG&E has proposed a second change to TS Table 3.7-6. This change involves entry number 2 which describes hose stations on the -10' and -15' levels of the auxiliary buildings. Since these hose stations are common to Units 1 and 2 (the hose stations are situated such that equipment from both units can be reached by the water spray) BG&E has proposed a clarifying footnote to indicate this commonality. The TS entry, as presently worded, could be misinterpreted to mean that these hose stations are located at both Units 1 and 2 and thus would represent 6 hose stations rather than the 3 hose stations actually installed.

We conclude that the addition of the clarifying footnote to TS Table 3.7-6 represents a necessary clarification, does not otherwise affect TS Table 3.7-6, and is therefore acceptable.

BG&E has proposed a change to Unit 1 and 2 TS 3.7.3.1, "Component Cooling Water System." At the present time, TS 3.7.3.1 requires that "At least two component cooling water loops shall be OPERABLE." The licensee has proposed that the following be added to the operability requirements for the component

cooling water (CCW) system: "At least one component cooling water heat exchanger shall be operating and the remaining component cooling water heat exchanger may be in standby." The proposed change to TS 3.7.3.1 has been requested in order to reflect actual operating practices associated with the CCW system.

The CCW system for each Calvert Cliffs Unit consists of 3 motor driven pumps, 2 heat exchangers, a head tank, and associated valves, piping, instrumentation, and controls. Cooling water for the CCW heat exchangers is supplied by the salt water system which discharges its water directly to the ultimate heat sink (Chesapeake Bay). During normal operation, the CCW system supplies cooling water to a number of safety-related components. The Calvert Cliffs FSAR, Section 9.5.2, states that, "During normal plant operation, one of the pumps and one of the heat exchangers are required for cooling service." The remaining CCW heat exchanger is normally maintained in "standby" status with its discharge valve closed. In the event of a Loss of Coolant Accident (LOCA), the CCW system services important safety-related components; however, the CCW system is designed so as not to supply cooling water immediately following a LOCA. During this period, the salt water system supply to the CCW heat exchanger is isolated. After a minimum of 36 minutes, salt water flow to the CCW heat exchangers is automatically reinitiated and CCW cooling begins. Existing emergency procedures instruct the reactor operators to open the outlet valve in the CCW heat exchanger. A time of 36 minutes is judged to be adequate for operators to take manual action in this regard.

The proposed change to TS 3.7.3.1 serves to further document an operating mode, involving use of a single CCW heat exchanger during normal operation, that has been previously used and is described in the FSAR. In the event of LOCA, starting from operation with one CCW heat exchanger, a combination of manual actions and automatic features assure proper postaccident functioning of the CCW system. Accordingly, the proposed change to TS 3.7.3.1 is acceptable.

BG&E has proposed a change to Unit 1 and 2 TS 4.7.3.1., 4.7.4.1, and 4.7.5.1 which provide Surveillance Requirements for the component cooling water, service water, and salt water systems, respectively. At the present time each of these TS contains a surveillance requiring that,

At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed or otherwise secured in position, is in its correct position.

BG&E has proposed replacing the phrase "... servicing safety related equipment..." with the phrase "... in the flowpath ...". This proposed change would clearly identify the class of valves which require monthly verification.

Systems such as the component cooling water, service water, and salt water systems contain a considerable number of valves. Not all of these valves have the same safety significance and thus need not be subjected to the same

type or frequency of surveillance. One class of valves performs functions which are minor from a safety standpoint. These functions include: drains vents, and instrument isolation (root) valves. Mispositioning of these valves would either be obvious during routine operation (i.e. a closed instrument root valve would cause the associated instrument to be inoperable) or perform functions which are minor with regard to the completion of the safety function of the system. These types of valves are typically quite numerous and monthly surveillance, with regard to position, is unnecessary.

At the present time Unit 1 and 2 TS 4.5.2 requires the following monthly test of valves in the emergency core cooling system (ECCS):

Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

The above wording appropriately excludes valves outside the flow path (valves with minor safety significance) from this routine surveillance. BG&E has proposed adopting this same surveillance requirement for the component cooling water, service water, and salt water cooling systems (TS 4.7.3.1, 4.7.4.1, and 4.7.5.1); thus, the valve surveillance requirements of these systems would be consistent with similar requirements for the ECCS. Moreover unsecured valves in the main flow paths of these systems, whose misposition would prevent these systems from completing their safety function, would still require periodic surveillance. For this reason, a high degree of assurance is maintained that these systems will be capable of performing their safety functions. Accordingly, the proposed changes to TS 4.7.3.1, 4.7.4.1 and 4.7.5.1 are acceptable.

BG&E has requested a change to Units 1 and 2 TS 3/4.3.3.5, "Remote Shutdown Instrumentation," to allow the use of alternate wide range neutron flux instrumentation. BG&E has installed new remote shutdown panels in the Unit 1 and 2 switch gear rooms (1C43 and 2C43). The remote shutdown panels had been located in the Unit 1 and 2 auxiliary feedwater pump (AFWP) rooms. The use of the new wide range neutron flux instrumentation, incorporated into the new remote shutdown panels, was approved by changes to TS 3.4.3.3.5 issued on June 6, 1984 (Unit 2, Amendment No. 75) and November 17, 1983 (Unit 1, Amendment No. 88).

On March 19, 1984, the new Unit 1 wide range neutron flux instrumentation began showing evidence of possible impending failure and was subsequently declared inoperable. On April 19, 1984 the NRC issued a change to TS 3.4.3.3.5 (Unit 1, Amendment No. 91) to allow the use of the wide range neutron flux instrumentation, still located in the Unit 1 AFWP room, until such time as the new instrumentation could be repaired. BG&E subsequently requested, by application dated June 29, 1984, a change to the Unit 1 and 2 TS 3/4.3.3.5 to allow use of the wide range neutron flux instrumentation, located in the Units 1 and 2 AFWP rooms, at any time when the wide range neutron flux instrumentation at the new remote shutdown panels becomes inoperable.

The wide range neutron flux instrumentation located in the AFWP rooms has

been shown by prior service to be reliable equipment. During the period when they would be required, when the primary wide range neutron flux instrumentation (located at 1C43 and 2C43) are inoperable, the instrumentation in the AFWP would be required to undergo routine surveillance. In addition, in the event that the wide range neutron flux instrumentation in the AFWP rooms are required to be operable under emergency conditions, communications can be established between the AFWP rooms and the remainder of the remote shutdown instrumentation located at 1(2)C43. Based upon the above, we find that the proposed change to TS 3/4.3.3.5 is acceptable.

Environmental Consideration

Changes (2) and (3) of the amendments involve changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, with respect to these items, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec. 51.22(c)(10). Changes (1), (4), (5), and (6) of the amendments involve a change in the installation or use of a facility component located within the restricted area and a change in surveillance requirements. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, with respect to changes (1), (4), (5), and (6), these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec. 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: January 14, 1985

Principal Contribution:
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