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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 149 TO FACILITY OPERATING LICENSE NO. DPR-53

AND AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. DPR-69

BALTIMORE GAS AND ELECTRIC COMPANY

CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-317 AND 50-318

1.0 INTRODUCTION

By letter dated January 20, 1989, as supplemented on June 30, 1989, and October 4, 1990, the Baltimore Gas and Electric Company (the licensee) proposed to amend the Technical Specifications (TS) of the Calvert Cliffs Nuclear Power Plant, Units 1 and 2. The proposed change would increase the response time, upon an initiating signal, of the steam and motor-driven auxiliary feedwater (AFW) pumps. The licensee provided a responses to our requests for additional information by letters dated June 30, 1989, and October 4, 1990.

2.0 EVALUATION

The current TS, items 10a and b in TS Table 3.3-5, have a response time of 54.5 seconds for the steam-driven and motor-driven AFW pumps. The TS value is based upon the response time of the steam-driven pumps to an initiation signal as detailed in the Updated Final Safety Analysis Report (UFSAR), Chapter 14, which includes: 50 seconds to open the steam admission valves and 4.5 seconds for the pumps to accelerate to full speed. The travel time, 3.5 seconds, required for the water to travel through the piping to the steam generators is not included in the TS.

The licensee has stated that an increase in the response time for the steam-driven AFW pumps would allow for modifications necessary to prevent or minimize dynamic damage to the governor linkages. Also, the present emergency diesel generators (EDGs) loading is approaching the machine's capacity limits and an increase in the response time for the motor-driven AFW pumps would provide greater flexibility with regard to the loading of the EDGs. The modifications to the AFW systems and changes in the load sequences for the EDGs will provide an overall enhancement to the reliability of the AFW systems. The licensee indicated in its October 4, 1990, response that post modification testing will be performed to determine the actual AFW systems response times. Future surveillance testing will include trending of the AFW systems response times and an evaluation of any adverse trending will be performed so that appropriate corrective actions can be taken.

The major concern associated with the proposed TS change is that the steam generators could go dry, thereby causing their loss as a heat sink. This could occur during a loss of feedwater event. Combustion Engineering (CE),

the Nuclear Steam Supply System vendor, reanalyzed the event for the licensee using the NRC-approved CESEC computer code. Major assumptions were introduced such as new low steam generator level trip setpoints and an increased delay time (218.5 seconds) for the delivery of AFW flow. The results demonstrated that the steam generator inventories were maintained without loss of the steam generators as a heat sink.

The licensee proposed to change the TS AFW response time to 180 seconds, which is much lower than the delay time used in the CE analysis. As no change in the level setpoints have been requested, the licensee's proposal is more conservative than the CE analysis. The proposed TS response time, however, is based on Table 2 in the January 20, 1989, submittal and includes the 3.5 second water travel time. Thus, the proposed TS change and Table 2 are inconsistent. However, due to the large margin demonstrated by the CE analysis, the staff finds the proposed TS value acceptable. The licensee should revise the UFSAR, Chapter 14, to reflect consistency in the application of the water travel time.

3.0 SUMMARY

We have reviewed the results of the supporting analyses for the proposed TS changes and have concluded that the changes are acceptable. However, as noted, the UFSAR should be updated to reflect consistency with TS Table 3.3-5 in the application of water travel time.

4.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change to a requirement with respect to the installation or use of the facilities' components located within the restricted areas as defined in 10 CFR Part 20. The staff has determined that these 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, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 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.

5.0 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

PRINCIPAL CONTRIBUTORS:

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Dated: December 4, 1990