



CHARLES CENTER • P.O. BOX 1475 • BALTIMORE, MARYLAND 21203-1475

GEORGE C. CREEL  
VICE PRESIDENT  
NUCLEAR ENERGY  
(301) 260-4455

February 8, 1991

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit No. 1; Docket No. 50-317  
Request for Waiver of Compliance

REFERENCE: (a) Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated February 8, 1991, Request for Emergency License Amendment; CEA Operability

Gentlemen:

Baltimore Gas and Electric (BG&E) Company requests a waiver of compliance from all the operability and surveillance requirements for the center Control Element Assembly (CEA). These requirements are Technical Specifications 4.1.1.1, 4.1.1.2, 3.1.3.1, 4.1.3.1.1, 4.1.3.1.2, 4.1.3.1.3, 3.1.3.3, 4.1.3.3.1, 4.1.3.3.2, 3.1.3.4, 4.1.3.4, 4.1.3.5, 3.1.3.6, 4.1.3.6, 3.10.1, 4.10.1.1, 4.10.1.2, 3.2.2.1, 4.2.1.3, 4.2.2.1.3, 4.2.2.3, 3.2.3 and 4.2.3.3. The center CEA has been declared inoperable because of our inability to determine that it will continue to satisfy the rod drop time surveillance requirements. Because of this, we do not meet the LCO of Technical Specification 3.1.3.4 and the Unit cannot enter MODE 2. Unit 1 is currently shutdown for unrelated reasons and is scheduled to enter MODE 2 on February 9, 1991. We could not have avoided this situation because the Unit was already operating in the current cycle when the swelling problem was discovered. The only way to avoid the problem would be to remove the CEA, which will occur during the next refueling outage. We request this waiver be granted for the period required for the NRC to review our emergency Technical Specification submittal on the same subject (Reference a).

Unit 1 was shut down on February 2, 1991, for unrelated reasons. While the shutdown was underway, it was noted that the rod bottom light and lower electric limit light had not come on for the center CEA after it had been driven into the core. The CEA was withdrawn approximately 4-6 inches and dropped back into the core to see if it would seat. It did not seat again, although the lower electrical limit indication came on. At this time, commencement of the Unit 1 cooldown was delayed to allow for more testing. Readings of the CEDM coil traces were taken to determine the existence of control rod binding. These readings indicate that the control rod is binding in the buffer region of the guide tube. We believe that this binding is due to swelling in the zircaloy slugs of the control rod. Similar swelling has been experienced on three previously used CEAs. We request that Unit operation be allowed to resume with this swollen CEA, since the CEA reactivity is sufficiently low that it does not impact the safety analysis.

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### BASIS FOR NO SIGNIFICANT HAZARDS DETERMINATION

As described in Reference (a), evaluations have been performed to determine the effect of the center CEA being misaligned on the results of the safety analyses. These evaluations have considered power distribution effects, shutdown margin, and the CEA ejection accident. The evaluations concluded that the misalignment of the center CEA would not significantly affect the results of the analyses. All safety analyses remain valid for the remainder of Unit 1 Cycle 10 operation. The center CEA was designed for power distribution control early in the life of the core and now provides very little reactivity control. In fact, only one of the five fingers, the center one, serves any reactivity function. More detail of the safety analysis evaluation is contained in Reference (a). Compensatory measures are not required during the waiver period because any misalignment of the center CEA has been shown to have no impact on the safety analyses.

Reference (a) also discusses the basis for our determination that this waiver does not constitute a significant hazard. Because the center CEA has been shown to provide no significant reactivity control, its removal from the Technical Specification operability requirements does not affect the consequences of previously evaluated accidents. Also, the CEA will not be operated differently than before. We plan to continue to operate the CEA aligned with its group unless it swells to the point where it begins to interfere with the control rod guide tube sleeve. At that time, we may choose to operate with it misaligned from the rest of its group. Further details concerning our determination of no significant hazards may be found in Reference (a).

### ENVIRONMENTAL CONSEQUENCES

This waiver will not result in irreversible environmental consequences. We will not operate the control rods any differently than we have in the past, with the possible exception of the center one becoming misaligned. Based on the evaluation of the safety analyses for this waiver, there is no increase in the consequences of any accident previously evaluated and no new accidents are created. This waiver will not result in any increases in routine or post accident radiological releases or occupational exposures. Therefore, the environment will not be adversely impacted.

