



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

August 7, 1992

Docket Nos. 50-317 and 50-318
License Nos. DPR-53 and DPR-69
EA 92-095

Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
ATTN: Mr. George C. Creel
Vice President - Nuclear Energy
MD Rts 2 and 4, Post Office Box 1535
Lusby, Maryland 20657

Dear Mr. Creel:

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL
PENALTY - \$50,000
(Combined NRC Inspection Report Nos. 50-317/92-80 and
50-318/92-80)

This letter refers to an NRC Electrical Distribution System Functional Inspection (EDSFI) conducted between March 2 and April 3, 1992, at Calvert Cliffs Units 1 and 2, in Lusby, Maryland. The inspection report was sent to you on June 5, 1992. The inspection included a review of the circumstances surrounding the failure to ensure adequate emergency core cooling system (ECCS) cooling performance for a number of postulated loss-of-coolant accidents (LOCAs). In addition, the inspection reviewed the improper dispositioning of the potential for the problem when it was identified by the plant staff in 1987. As a result of this inspection, a number of violations of NRC requirements were identified. On June 17, 1992, an enforcement conference was held with you and members of your staff to discuss these occurrences, the apparent violations, their causes, and your corrective actions.

The violations, which are described in the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice), involved the failure to ensure adequate ECCS cooling performance for a number of postulated LOCAs, as well as the failure to promptly correct a condition adverse to quality when first identified in 1987. Specifically, the potential existed for a common mode failure of the emergency diesel generators (EDGs) and the associated ECCS loads during a range of small break LOCA events coincident with a loss of offsite power (LOOP) for which ECCS cooling performance had not been demonstrated. This situation could occur as a result of the EDG load sequencer unit allowing unsequenced loads to start at the same time as a large load is started, due to a process-controlled signal (i.e. containment pressure) being present.

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The NRC is concerned that in January 1987, your staff, after receiving information concerning the potential for severe voltage and frequency deviations on emergency busses, performed a calculation (E-87-1) which determined that the EDG loads could be sequenced on to the EDG in a fashion different from that intended and that as a result, an excessive voltage drop would be seen. In response to the calculation, which was presented to the plant operating event assessment committee (POEAC) and the plant operations and safety review committee (POSRC), your staff concluded that the event was not reportable, and that no further corrective action was necessary since the contribution to core melt frequency for this event was concluded to be insignificant. There was apparently no recognition that the event was required to be considered as a part of the 10 CFR 50.46 analysis. However, following additional evaluation of this issue in response to concerns raised by the NRC EDSFI team in March 1992, your staff determined that the loads could be loaded in a sequence not previously analyzed and, if such a misapplication of loads were to occur, the voltage drop on the EDGs might be unacceptable. At that time, your staff determined that the existing plant conditions placed the units outside of their design bases (with respect to having two operable EDGs to mitigate the consequences of a LOOP/LOCA), and you declared all three EDGs inoperable and shut down both units.

The NRC is particularly concerned that the safety and regulatory significance of this issue was not recognized by your safety review committees (POEAC and POSRC) when this condition was initially identified to them in March 1987 and that adequate corrective actions were not taken and no report was made to the NRC until this issue was identified by the NRC EDSFI team. When the electrical system vulnerability was first identified, the need to thoroughly evaluate the effect on the ECCS system performance should have been recognized by your staff.

The loading of the EDGs in excess of their designed capability could degrade the EDG electrical bus voltage or stall the EDGs. This would, in turn, prevent the EDGs from automatically reenergizing the affected buses and safeguards loads in the event of a LOOP, significantly impacting the ECCS's ability to mitigate the consequences of an accident. In addition, the failure to properly disposition this issue when it was recognized in 1987 was a significant corrective action violation. Accordingly, these violations are classified as a Severity Level III problem in accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (Enforcement Policy). The violations are described in the enclosed Notice.

The NRC acknowledges that a subsequent analysis may conclude that the consequences of any unsequenced loading of the EDGs during LOCAs, involving a break of the sizes of concern, would not adversely affect the ability of the ECCS to mitigate the consequences of the accident. However, the purpose of this enforcement action is not to debate the merits of an after-the-fact analysis, but rather to emphasize that the NRC regulations require licensees to have prior assurance of the ECCS's ability to mitigate the consequences of any accident of concern.

The NRC recognizes that actions were taken to correct these violations and prevent recurrence. These actions included, but were not limited to: (1) designing and installing system modifications to prevent out of sequence EDG loading; (2) improving the process for reviewing industry operating experiences; (3) requiring that all incident reports be reviewed for operability, reportability, and design impact; and (4) continuing staff training (since 1987) in the areas of 10 CFR 50.59 review and operability determinations.

To emphasize the importance of ensuring that equipment designed to mitigate serious safety events is able to perform its safety function under all required scenarios and to emphasize the need to promptly analyze, correct, and, if required, report conditions that could adversely impact that ability, I have been authorized, after consultation with the Director, Office of Enforcement, and the Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice) in the amount of \$50,000 for the violations set forth in the enclosed Notice.

The base civil penalty amount for a Severity Level III problem is \$50,000. The escalation and mitigation factors set forth in the enforcement policy were considered. The violations, were identified by the NRC, therefore, 50 percent escalation of the base civil penalty on this factor is warranted. Your corrective actions, including the declaration of all three EDGs inoperable and the shut down of both units, were considered prompt and comprehensive, therefore, 50 percent mitigation of the base civil penalty on this factor is warranted. With respect to your overall past performance, the last SALP assigned a Category 2 rating in the areas of operations, engineering/ technical support, and safety assessment/quality verification areas, therefore, no adjustment was made based on this factor.

Finally, we note that the inspection report also described a design violation that contributed to the failure to meet 10 CFR 50.46. Since a citation is included for the 10 CFR 50.46 violation a separate citation is not being proposed for the contributing violation. Similarly, the reporting violation discussed above is not being cited because once the improper decision was made in 1987 that no further corrective actions were necessary it followed that a report would not be found appropriate.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken and any additional actions you plan to prevent recurrence. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether further NRC enforcement action is necessary to ensure compliance with NRC regulatory requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

Baltimore Gas & Electric Company

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The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Pub. L. No. 96-511.

Sincerely,



Thomas T. Martin
Regional Administrator

Enclosure: Notice of Violation and Proposed
Imposition of Civil Penalty

cc w/encl:

G. Detter, Director, Nuclear Regulatory Matters (CCNPP)
R. McLean, Administrator, Nuclear Evaluations
J. Walter, Engineering Division, Public Service Commission of Maryland
K. Burger, Esquire, Maryland People's Counsel
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K. Abraham, PAO (2)
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