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March 27, 1997

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Office of Nuclear Reactor Research

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Preliminary Comments on Draft NUREG-1560 "Individual Plant Examination
Program: Perspectives on Reactor Safety and Plant Performance"

REFERENCES: (a) SECY-90-104 "Role of Individual Plant Examinations (IPE) in
Assessing Industry Status with Respect to the Commission's Safety Goal
Policy," from James M. Taylor, Executive Director for Operations to
The Commissioners, dated March 20, 1990

Baltimore Gas and Electric Company strongly objects to the contents of the draft NUREG.

Specifically, the NUREG directly compares the core damage frequency (CDF) of plants and uses the results of the comparison to draw conclusions. Although the NUREG notes the difficulties of making such a comparison, the results of these comparisons are stated as if they are a factual representation of the differences in plant risk. This is clearly not true.

SECY-90-104 [Reference (a)] states that in order to meaningfully compare the Individual Plant Examinations (IPE) results directly to the safety goals, the staff would have to review the IPEs in sufficient detail to obtain confidence in the bottom-line numbers resulting from the IPE. It further states that such reviews would require extensive resources which have not been budgeted or scheduled. The SECY's assessment is consistent with our understanding of the IPE review process.

However, the conclusions contained in Section 3.3.2, Combustion Engineering (CE) Plant Perspectives, imply that such a review has been performed. It is Baltimore Gas and Electric Company's position that until such reviews are performed and the appropriate risk model corrections are made, comparison of CDFs between plants is misleading.

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We therefore strongly recommend that comparison between plants be completely eliminated from NUREG-1560.

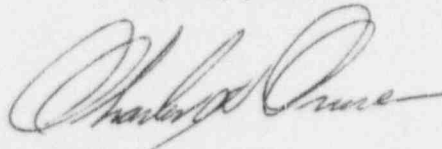
Baltimore Gas and Electric Company has invested considerable resources to thoroughly assess the risk of Calvert Cliffs Units 1 and 2. We are continuing to improve our risk assessment tools and to aggressively apply risk insights into the operation and maintenance of Calvert Cliffs. We believe this is good business and is important to the safe operation of our plant.

Baltimore Gas and Electric Company has gained significant insight through the cross comparison activities of the CE Owners Group and has found that many of the differences in CDF are due to modeling differences. We believe that these activities are an appropriate means of achieving an in-depth risk comparison between the CE plants and ultimately a means of achieving consistency between the models.

Baltimore Gas and Electric Company plans to submit additional comments prior to the final due date of May 9, 1997.

Should you have questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



CHC/SJR/dlm

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6730-97-2137

Nuclear Regulatory Commission
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Washington, DC 20555

Gentlemen:

Subject: Comments on NUREG 1560 "Individual Plant Examination
Program: Perspectives on Reactor Safety and Plant Performance"

This letter contains GPU Nuclear's comments on the referenced NUREG. The comments will be specific to GPU Nuclear's plants in that general comments on the NUREG's organization and contents have been provided by NEI and the various Owners Groups.

One comment of a general nature applies to both plants: the indices provided at the back of both Volumes are of little value, at least with reference to TMI-1 and Oyster Creek. For example, in Vol. 1 nine page references are provided for TMI-1. Of the nine, one page does not exist, TMI-1 is not mentioned on two others and one reference is inaccurate by one page. For Oyster Creek, three of the eight references are inaccurate by one page.

The index for Vol. 2 has similar problems. Of the 25 page references to TMI-1, three pages (including both references in Chapter 9) do not reference TMI-1, and one other page reference is inaccurate by one page. Furthermore, TMI-1 is mentioned on two additional pages in Chapter 9 (9-26 and 9-27) which are not noted in the index. The situation in regard to Oyster Creek is worse. The index lists 32 page references for Oyster Creek including 9 in Chapter 9. Of those 9 references only 1 is correct, and two referenced pages do not exist in the draft NUREG. In addition, Oyster Creek is cited on four pages in Chapter 9 (9-4, 9-8, 9-22 and 9-23) which are not included in the index. It appears that the NUREG, particularly Chapter 9, was edited after the indices were created and they should be recreated prior to issuance.

Of a more specific and technical nature is the categorization of plants relative to the criteria used to define "vulnerabilities". Section 3.2 of the TMI IPE submittal of March 1993 states the following:

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"A vulnerability is defined as any core damage sequence that exceeds 1×10^{-4} per reactor year, or any containment bypass sequence or large early containment failure sequence that exceeds 1×10^{-6} per reactor year."

Given the above definition, TMI was inappropriately excluded from the first group of plants contained in Table 9.3 on page 9-4 of Volume 2. In contrast, TMI-1 is included in the group of plants which do not define the criteria for "vulnerabilities" in Table 9.5 on page 9-7 of Volume 2. In both cases the categorization is incorrect.

There is a related concern relative to Oyster Creek. On page 9-4 of Volume 2, the NUREG states: "One plant (Oyster Creek) applies the criteria at the systemic sequence level instead of for the total plant CDF." GPU Nuclear can not understand the basis of this statement in that Section 3.2 of the Oyster Creek IPE, "Vulnerability Screening", contains the same definition as the one given above from the TMI IPE.

GPU Nuclear believes that the utilities' interpretation of the IPE submittal requirements resulted in varying levels of documentation detail. As a consequence, there are several instances in the NUREG where the authors seem to draw conclusions about what plants should do, or not do, without sufficient investigation. For example, on page 5-6 of Volume 1 there is a discussion about manual actuation of the isolation condenser (IC) before the safety relief valves (SRV) open. Later in the same section the NUREG states, "There is no apparent reason why modeling of this human action is unique to Millstone 1 and why it would not apply to other IC plants." This statement implies that the potential of manual initiation of the ICs before the SRVs open was not investigated for the other IC plants. At least in the case of Oyster Creek, that implication is incorrect. At Oyster Creek, it was determined that manual initiation of the IC is not possible before SRV actuation due to the timing of the post trip pressure rise, the closeness of high pressure set points of the SRVs and ICs, and the time required for IC valve stroke. Since consideration of this phenomena was not documented in the submittal, the authors assumed it was not considered.

Another example which illustrates the point that inaccurate conclusions can be drawn from the NUREG, is the treatment of recirculation pump seal cartridges. Nine Mile Point 1 in its submittal "implemented and credited recirculation pump seal cartridges to lessen recirculation pump seal effects" (page 9-23). Although not specifically stated in the IPE submittal, Oyster Creek has the same seal cartridges as Nine Mile Point 1 and cited Nine Mile Point 1 documents in response to a Request for Information (RAI) from the NRC on this very point. An individual unaware of that information could draw an inaccurate conclusion from reading the applicable sections of the NUREG.

It is even more puzzling, however, when information that is explicitly provided is not referenced. On page 11-17 of Volume 2, the NUREG states "It is not clear from the other submittals for this plant group if failure to control vessel water level is considered a failure mode of the isolation condensers as it is in the Nine Mile Point 1 submittal." Section 7.6 of the Oyster Creek PRA "Loss of Feedwater Control Module (High Level Excursion)", which was submitted as part of the IPE, is entirely devoted to the potential effects of high level excursions in the reactor vessel and its effects, including the impact on IC operation.

In another instance, the NUREG assigns Oyster Creek to "Category f" in Table 17.2 on page 17-4. That category is for those plants which, although the Station Blackout Rule (SOBR) coping method is directly or indirectly referred to in the submittal, the information is "insufficient, inconsistent or incomplete". In GPU Nuclear's opinion, all the pertinent information on the modeling of station blackout is contained in Appendix C and/or Appendix B of the Oyster Creek PRA. Once again, the lack of specificity in the submittal requirements played a role in this categorization.

There are also several simple factual errors contained in the NUREG. For example, it is stated on page 11-3 "The other plants in the group require that makeup be provided to the isolation condenser secondaries in approximately 20 to 30 minutes." This is not the case at Oyster Creek where each isolation condenser can operate for up to 45 minutes without shell side makeup. The operators could, of course, decide to fill the shell earlier in the transient response depending on the type of transient. Similarly, Table 12.4 on page 12-7 in the column "Containment design pressure", the value provided for Oyster Creek is 35 which is the torus design pressure. The value provided for Nine Mile Point 1 is 62 which is the drywell pressure. Given the other values in the column, it appears that the values represent drywell design pressure which, in the case of Oyster Creek, is 65 psig.

Overall, GPU Nuclear believes that NUREG 1560 is a valuable and interesting comparison of IPE submittal results which represents the culmination of an enormous task. There is, however, a degree of subjectivity involved which GPU Nuclear believes is unwarranted given the wide latitude permitted in the submittals. One example was cited above in relation to the ICs and SRVs. Similar subjectivity can be seen in the categorization of selected issues which the authors suggest that other plants in the same group should address versus those it dismisses as unique treatments. Additional research or investigation may have led to different conclusions.

Should you require additional information regarding these comments please contact me at (201) 316-7334.

Sincerely,



J. C. Fornicola

Director, Licensing & Regulatory Affairs

JCF/DPK

cc: Administrator, Region 1
TMI Senior Resident Inspector
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