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SUBJECT: Provides suppl response to NRC 940307 RAI re standby gas treatment sys performance for loss of spent fuel pool cooling following seismic event.

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APR 29 1994

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**SUSQUEHANNA STEAM ELECTRIC STATION
FOLLOW-UP RESPONSE TO REQUEST FOR
ADDITIONAL INFORMATION CONCERNING
STANDBY GAS TREATMENT SYSTEM
PLA-4128 FILE R41-2**

Docket No. 50-387
& 50-388

- Reference:*
- 1) *NRC Letter, J. W. Shea to R. G. Byram "Request for Additional Information (RAI) concerning Standby Gas Treatment System Performance, Susquehanna Steam Electric Station, Units 1 and 2 (TAC NO. 85337)," dated March 7, 1994.*
 - 2) *PLA-4112, R. G. Byram to C. L. Miller "Response to Request for Additional Information Concerning Standby Gas Treatment System" dated March 25, 1994.*

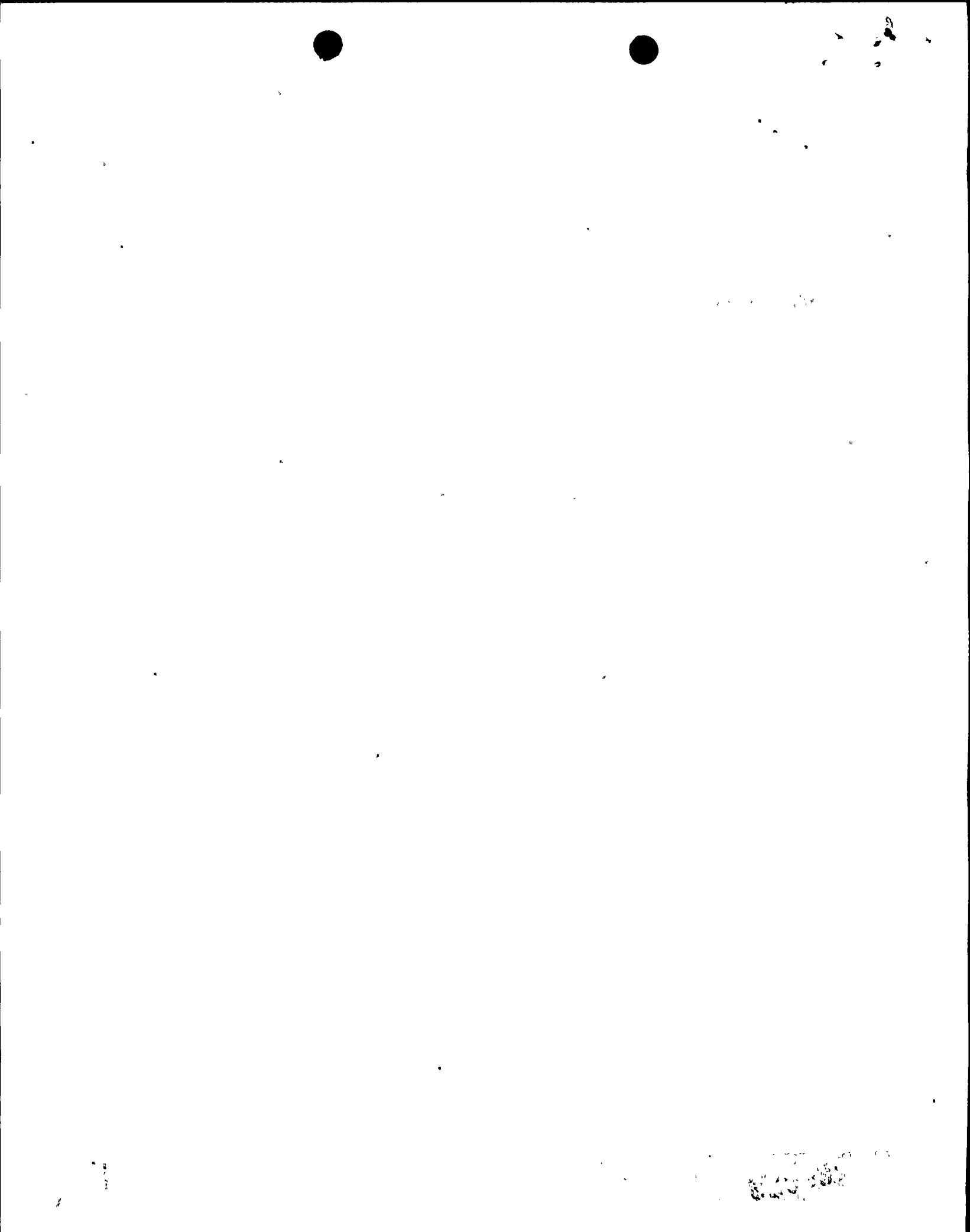
Dear Mr. Miller:

The purpose of this letter is to provide Pennsylvania Power & Light Company's (PP&L) supplemental response to the above referenced Request for Additional Information (RAI) concerning the Standby Gas Treatment System (SGTS) performance for a loss of Spent Fuel Pool (SFP) Cooling following a seismic event. Specifically, this response partially addresses the remaining issue regarding the need for SGTS for a design basis seismic event with both Spent Fuel Pools boiling for an extended duration. The questions raised in the April 21, 1994 RAI associated with SGTS and RHR operation will be provided in PP&L's response on May 2, 1994 as well as the results of our review of the capability of SGTS to operate in a boiling pool environment.

As highlighted in the March 7, 1994 RAI, the staff questioned the original acceptance of a non-seismic Category I spent fuel pool cooling system for SSES as being based upon "the provision of the seismic Category I make-up system and the provision of the seismic Category I Standby Gas Treatment System, which has engineered safety feature filters that meet the recommendations

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of Regulatory Guide (RG) 1.52." [Section 3.2.1 of the SSES Safety Evaluation Report (SER), NUREG - 0776].

The staff concluded that boiling of both spent fuel pools following a seismic event constituted a design basis accident. This conclusion is based on their review of the offsite dose consequences of a total loss of SFP cooling caused by a seismic event as analyzed in Appendix 9A of the SSES Final Safety Analysis Report (FSAR).

The FSAR Appendix 9A analysis was performed (by PP&L) to examine the offsite dose consequences of a postulated loss of fuel pool cooling resulting from a seismic event, and contained all the assumptions consistently chosen to be "worst case" design assumptions for the purposes of maximizing the calculated offsite dose. No credit was taken for restoration of systems or operator actions to restore fuel pool cooling. The analysis conservatively assumed that the residual heat removal (RHR) system was not available for spent fuel pool cooling, and allowed both spent fuel pools to boil. Additionally, although not explicitly stated in the FSAR, no credit was taken for the operation of the Standby Gas Treatment System as the analysis determined the offsite dose to be within regulatory limits without its operation. It should be noted that the Final Safety Analysis Report has been updated to include the clarification that the operation of the Standby Gas Treatment System was not taken credit for in the Appendix 9A analysis and is not required to be operational for an extended duration to mitigate the consequences of this design basis accident. Thus, at the time of the development of the SER (NUREG-0776) it was not established that the Appendix 9A analysis did not rely on SGTS to mitigate the off-site dose consequences of the seismic event.

A review of the applicable regulations reveals that the SGTS is not needed to mitigate the consequences of this particular accident analyzed in Appendix 9A of the SSES FSAR. Specifically, Standard Review Plan (SRP) 9.4.2 defines that, "the spent fuel pool area ventilation system includes all components and ductwork from air intake to the point of discharge where the system connects to the gaseous cleanup and treatment system or station vents. All portions of the system whose failure may result in release of radioactivity which causes offsite dose of more than 0.5 rem to the whole body or its equivalent to any part of the body shall be classified as seismic Category I and safety related." The Appendix 9A analysis determined the maximum offsite dose to be well within the regulatory limits. Since no credit is taken for SGTS in this analysis, its failure to operate during such an event would not result in offsite doses of more than 0.5 rem to the whole body. In addition, PP&L maintains that, in a seismic event, cooling to the fuel pool can be restored prior to boiling through use of RHR in the fuel pool cooling mode of operation.

The RHR Fuel Pool Cooling mode is a means of cooling the SFP, utilizing safety-related and Seismic Category I equipment. Either loop of RHR in a unit may be used in this mode and the installation of a spool piece is not required, since the connection at SSES is completely "hardpiped". The RHR fuel pool cooling mode is also diesel generator backed, so that it will be available in the event of a Loss Of Offsite Power (LOOP). A detailed evaluation of the ability to use RHR in the Fuel Pool Cooling mode, with single failure considerations, will be provided in PP&L's response to the April 21, 1994 RAI.

Details of the evaluation of the plant response to a postulated dual SFP boil event following a seismic event will be provided in PP&L's May 2, 1994 response. This evaluation will contain a discussion of offsite dose consequences, the impact on operability of SGTS, the impact on equipment qualification within the reactor building and control structure, as well as, a discussion of actions necessary to mitigate a dual fuel pool boiling event.

Questions regarding this follow-up response should be directed to Mr. J. M. Kenny at (610) 774-7904.

Very truly yours,


R. G. Byram

cc: NRC Document Control Desk (original)
NRC Region I
Mr. G. S. Barber, NRC Sr. Resident Inspector
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