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SUBJECT: Comments on util proposal, dtd 941228 to update FSAR of plant by using RHR sys in fuel pool cooling mode to mitigate consequences of seismic events. Comments critical of util technical arguments for FSAR update to plant.

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January 18, 1995

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**SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION UNITS 1 AND 2
DOCKET NOS. 50-387 AND 5-388
COMMENTS ON LICENSEE'S PROPOSED USE OF RHR FUEL POOL COOLING
MODE**

Dear Mr. Shea:

By letter dated December 28, 1994, Pennsylvania Power & Light Company described its intentions for updating the Susquehanna Steam Electric Station (SSES) Final Safety Analysis Report (FSAR) to reflect use of the RHR System in the fuel pool cooling mode to mitigate the consequences of a seismic event which incapacitates the normal fuel pool cooling system(s). This commitment by the licensee is very positive action which will further reduce the risk of a loss of spent fuel pool cooling event at SSES. Documentation of such reliance on the RHR FPC mode in the SSES FSAR should prevent the licensee from discounting or overlooking this important function in the future during design engineering activities and plant operations.

We respectfully offer the following comments on this licensee letter to assist the staff in its evaluation of these issues:

- 1) The final paragraph on page 1 states that the "analysis of the radiological impact of a boiling spent fuel pool (SFP) will be retained in Appendix 9A of the FSAR since it is required by regulations for a Non-Seismic Category I Fuel Pool Cooling system and bounds the radiological impact of a loss of fuel pool cooling." The existing SSES FSAR Appendix 9A analysis is incomplete and inaccurate. It, in fact, does not bound the radiological impact of a loss of fuel pool cooling. While it is true that the licensee's offsite dose calculations for a boiling spent fuel pool did not take any credit for operation of the Standby Gas Treatment System (SGTS), it is totally erroneous to think that the only source terms potentially affecting the public and environment following a seismic event are those coming from the spent fuel pools. When the boiling spent fuel pool renders the SGTS inoperable, and this licensee has clearly shown that the SGTS will mechanically fail as a direct result of the spent fuel pool boiling, then any source terms from other locations within the reactor building (such as from a broken RWCU line) will proceed unfiltered to the atmosphere. Therefore, SSES FSAR Appendix 9A is not bounding. The SSES FSAR should be updated, as an absolute minimum, to reflect all of the ventilation system manual alignments which the licensee has indicated would be implemented to prevent the vapor and temperature from a boiling spent fuel pool from being transported throughout secondary containment.
- 2) On page 2, paragraph (a) states that the RHR FPC mode is designed and operated to provide cooling such that each fuel pool will be maintained at or below 125°F when the Emergency Heat Load (EHL) is resident in an isolated fuel pool and that this temperature can be maintained with an RHRSW inlet temperature of 91°F. It further states that the Technical Specification temperature limit for the spray pond is 88°F in an obvious attempt to imply there is a large temperature margin. However, there is, in fact, no margin. With

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a loss of fuel pool cooling associated with a DBA LOCA, even without considering the additional heat load from the spent fuel pool, the spray pond temperature goes to $\approx 96.5^{\circ}\text{F}$. Therefore, contrary to the licensee's claim, the fuel pool temperature cannot be maintained below 125°F .

This paragraph goes on to state that this function will not change. By letter dated June 1, 1994, the licensee committed to operate SSES with the spent fuel pools normally cross-tied - not isolated. It would therefore appear that SSES FSAR Sections 9.1.3.1.b and 9.1.3.2 do not apply to how the licensee normally conducts business at SSES. These FSAR Sections should be updated to reflect the normal configuration of the plant with the spent fuel pools cross-tied.

- 3) On page 2, paragraph (b) states that "SSES procedures contain instructions to utilize the RHR FPC mode to cool the pools upon loss of the fuel pool cooling." Please recall that while the SSES procedure for loss of fuel pool cooling (ON-135/235-001) specifies that RHR FPC can be used to restore cooling, the RHR operating procedures in effect at the time of the 10 CFR 21 report in November 1992 and for several months thereafter did not provide adequate guidance to the operator to ensure that this mission could be successfully accomplished. Please also recall that the NRC staff determined that the operator training in effect at the time of the 10 CFR 21 report in November 1992 and for several months thereafter did not provide adequate instruction to the operators on how to align the RHR System and the spent fuel pools for RHR FPC mode.
- 4) The final paragraph on page 2 states that proper operation of all active components in the RHR FPC mode is confirmed on a periodic basis. Please recall that the licensee removed the RHR FPC mode valves from its inservice inspection program in 1987/1988 after an engineering evaluation concluded that the RHR FPC mode was not required since the ESW System makeup to a boiling spent fuel pool fulfilled the necessary safety function. Please also recall that these valves had not been used or tested from that time until several months after the 10 CFR 21 report in November 1992.
- 5) The first paragraph on page 3 implies that yet another modification may be necessary to ensure that the RHR FPC mode can be successfully aligned and operated. If this modification is implemented, please note that the PRA results reported by the staff in its draft Safety Evaluation for Susquehanna will be affected. In particular, the difference between the as-found and current plant results should increase since the risk for the as-found configuration will increase and the risk for the current plant configuration will remain the same or decrease.
- 6) In the last paragraph on page 3, please note that the licensee states that the fuel pool instrumentation is qualified only for the Operating Basis Earthquake (OBE). However, equipment such as this instrumentation which performs a safety-related function is required by Regulatory Guide 1.29, to which this licensee is committed, to be qualified for the Safe Shutdown Earthquake (SSE). Therefore, these instruments are deficient with regard to seismic qualification.
- 7) In the first paragraph on page 4, the licensee implies that the system is completely single failure proof because only one loop of RHR per unit is required for long term decay heat removal from the reactor vessels and the spent fuel pools. However, as we have pointed out in previous correspondence and in public meetings, this still does not address the single failure to close of the spray pond spray array bypass valve, a failure which cannot be tolerated without exceeding the design maximum ESW and RHRSW supply temperature.

We would appreciate your consideration of these comments in your continuing evaluation of this issue.

Sincerely,


David A. Lochbaum


for Donald C. Prevatte

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