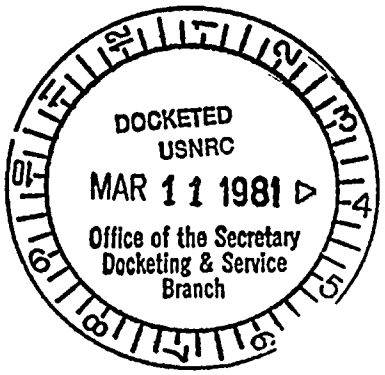
March 9, 1981



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
PENNSYLVANIA POWER & LIGHT COMPANY	)	
	)	
and	)	Docket Nos. 50-387
	)	50-388
ALLEGHENY ELECTRIC COOPERATIVE INC.	)	
	)	
(Susquehanna Steam Electric Station, Units 1 and 2)	)	

APPLICANTS' STATEMENT OF MATERIAL FACTS AS TO WHICH THERE IS NO GENUINE ISSUE TO BE HEARD (CONTENTION 12)

Pursuant to 10 C.F.R § 2.749(a) Applicants state, in support of their Motion for Summary Disposition of Contention 12 in this proceeding, that there is no genuine issue to be heard with respect to the following material facts:

1. Feedwater enters the reactor pressure vessel of a boiling water reactor ("BWR"), such as will be utilized in the Susquehanna units, through the feedwater nozzles. Components known as "feedwater spargers" are located inside the vessel and fitted into each feedwater nozzle. The feedwater sparger fits into the nozzle by means of a thermal sleeve. Affidavit of Howard T. Watanabe In Support Of Summary Disposition of Contention 12 ("Watanabe Aff."), paras. 3, 4.

2. The function of the feedwater sparger is to distribute the flow of feedwater uniformly within the annulus of the vessel so that feedwater will form a homogeneous mixture with

reactor recirculation coolant water. The resulting uniform distribution of feedwater assures proper subcooling of the inlet of the jet pumps and a uniform temperature of the water entering the reactor core in order to maintain proper core power distribution. Watanabe Aff., para. 3.

3. Early BWRs employed spargers in which the thermal sleeve did not fit tightly against the nozzle bore. As a result, there was a leakage flow of feedwater through the gap between the thermal sleeve and the nozzle. The leakage flow of feedwater through the gap between the thermal sleeve and the nozzle caused vibration of the sparger, leading to the formation of cracks at the junction of the sparger arms and the thermal sleeve. Watanabe Aff., para. 4.

4. Contrary to the statement in Contention 12, this flow-induced vibration did not occur in the reactor core, but rather in the reactor vessel annulus. Watanabe Aff., para. 4.

5. As a consequence of some feedwater sparger failures in early BWR designs, the General Electric Company ("GE") built in 1973 a full scale sparger test facility. Tests conducted at that facility determined that the leakage flow between the sparger thermal sleeve and the feedwater nozzle was causing the vibration problem, and that elimination of the leakage flow would end sparger vibration. Watanabe Aff., para. 5.

6. Based on these tests, GE developed an "improved interference fit sparger". The new design utilizes three concentric thermal sleeves which fit tightly against the feedwater nozzle and reduce potential leakage flow to essentially zero. Watanabe Aff., para. 6.

7. Confirmatory tests of the new design were conducted in a facility that duplicated actual reactor operating conditions, over the range of flows experienced in the reactor. In none of the tests was any significant vibration measured. Watanabe Aff., para. 7.

8. Since 1977, the improved interference fit sparger design has been implemented in eight GE plants. Operating experience of this sparger design in those plants has been excellent with no sparger vibration problems or sparger failures reported to date. Watanabe Aff., para. 8.

9. The NRC Staff has reviewed in detail the sparger vibration problem and has concluded that the improved interference fit design acceptably solves the problem. Watanabe Aff., para. 9.

10. The design of Susquehanna Units 1 and 2 employs the improved interference fit sparger. Based on analysis, testing and operational experience, the possibility of sparger failure at Susquehanna due to flow-induced vibrations is remote. Watanabe Aff., para. 10.

11. No evidence has ever been found of sparger failure due to flow-induced vibration in the core. Watanabe Aff., para. 11.

12. Should a feedwater sparger fail for whatever reason at Susquehanna there would be no adverse consequences external to the reactor, since the sparger is not a pressure boundary and is contained entirely within the reactor pressure vessel. Watanabe Aff., para. 12. Complete failure of the feedwater sparger would result at most in cavitation of the jet pumps and/or asymmetry in the neutron flux in the core due to non-uniform water temperature. Either of these effects would be

detectable by existing instrumentation. Id.

13. None of the consequences of a hypothetical sparger failure at one of the Susquehanna reactors would affect the ability to achieve and maintain the safe shut-down of the reactor, and none would result in the release of radiation to the environment outside the reactor. Watanabe Aff., para. 12.

Dated: March 9, 1981

Respectfully submitted,

SHAW, PITTMAN, POTTS & TROWBRIDGE

Jay E. Silberg
Matias F. Travieso-Diaz

Counsel for Applicants

1800 M Street, N.W.
Washington, D.C. 20036
(202) 822-1000