

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



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

Docket Nos. 50-387  
50-388

APPLICANTS' STATEMENT OF MATERIAL FACTS  
AS TO WHICH THERE IS NO GENUINE ISSUE  
TO BE HEARD (CONTENTION 7C)

Pursuant to 10 C.F.R. § 2.749(a) Applicants state, in support of their Motion for Summary Disposition of Contention 7C in this proceeding, that there is no genuine issue to be heard with respect to the following material facts:

1. The BWR core spray system for the Susquehanna Steam Electric Station ("Susquehanna") consists of a number of distinct components: external piping; a transition between the piping and the vessel (the core spray safe end); a thermal sleeve; an internal core spray line; and the core spray sparger. The entire system is duplicated by means of a redundant and separate loop which contains the same components. Affidavit of Joseph C. Lemaire in Support of Summary Disposition of Contention 7C ("Lemaire 7C Aff."), para. 3.

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2. No cracking of core spray nozzles has ever been reported to General Electric Co. ("GE"), nor is GE aware of any such cracking. Cracking of these nozzles would not be expected in view of the relatively low cyclic thermal stresses in them and their successful overall performance throughout four hundred reactor years of service. Lemaire 7C Aff., para. 4.

3. Other portions of the core spray system have experienced a low frequency of cracking in operating BWR's. External core spray line cracking has occurred in BWR's using high carbon type 304 stainless steel. The cracking in these cases was intergranular stress corrosion cracking (IGSCC). Since Susquehanna uses carbon-limited stainless steel in the external core spray lines, cracking is not expected. Id., para. 5.

4. Type 304 stainless steel core spray safe ends have also experienced IGSCC. In Susquehanna, Alloy 600 is used in the core spray safe ends and thermal sleeves, instead of type 304 stainless steel. Alloy 600 is more resistant to IGSCC and has never been reported to crack in core spray system safe ends or thermal sleeves of similar design. Id., para. 6.

5. IGSCC cracking has been verified in internal core spray system piping of one operating reactor which utilized high carbon Type 304 stainless steel. Since the Susquehanna Units utilize Type 304L stainless steel in the internal core spray line, cracking of internal core spray system piping is not expected. Id., para. 7.

6. Core spray sparger cracking has been reported in three operating reactors using higher carbon Type 304 stainless steel. Since the sparger cracking has not resulted in loose parts, NRC has approved continued operation of these reactors with spargers in this condition. The core spray spargers at Susquehanna are low carbon Type 304L stainless steel, which is known to resist the sensitization-related mechanism of cracking. Id., para. 8.

7. In summary, cracking has not been reported in BWR core spray nozzles. Infrequent cracking has occurred in other portions of the core spray system, but only in materials substantially different from those used at susquehanna. Id., para. 9.

Dated: August 31, 1981.

Respectfully submitted,

SHAW, PITTMAN, POTTS & TROWBRIDGE

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