

UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

January 3, 1984

NOTE TO: Joe Scinto

R. L. Perch FROM:

SUBJECT: SUSQUEHANNA 1 SPRAY POND OPERABILITY

In the Susquehanna SER (4/81) (Section 2.4.4) the NRC staff noted that, based on computer model calculations, the existing as-designed pond should be able to perform ultimate heat sink duty for both units (a LOCA in one unit and normal shutdown cooling loads for the other unit) without exceeding a 30 day heatup temperature of 95°F. While the NRC staff called for a confirmatory test of the as-built pond heat rejection capability, we concluded that there was sufficient margin to allow one unit operation based on the design calculations alone.

The Technical Specifications on the spray pond in the Unit 1 license were based on two unit performance and assumed that at LOCA plus other unit shutdown loads could be rejected for up to 30 days with no makeup water provided the starting conditions in the pond included keeping the average water temperature at 88°F or below and the inventory at 19.95 million gallons or higher (represented by a pond level of 677 feet above mean sea level (MSL)). Had the tests that were subsequently ran on the as-built spray pond indeed confirmed the design calculations, the Unit 2 Technical Specifications would have used the same limits as are now in the Unit 1 Technical Specifications.

Unfortunately, the tests did not confirm the performance predicted by design and computer model calculations.

However, by conservatively applying the results of the tests, the licensee has concluded that, by the simple expedience of making sure that there is more water in the pond than now required by the Unit 1 Technical Specifications (23 million gallons, up 15% from the 19.95 gallons now required) and that the average pond water is kept at a lower level (81°F, down 7°F from the 88°F now allowed - which allowed for a 7°F heatup to the accident design limit of 95°F after 30 days with no makeup), no physical changes will be required in the spray pond itself in order to handle the heat rejection losses resulting from a LOCA in one unit and a normal shutdown in the other unit. As you can imagine, requiring an average pond temperature of 81°F during the summer months may result in an occasional plant shutdown. Therefore, at a future date, the licensee may desire to justify and take alternate measures.

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