May 6, 2002

MEMORANDUM TO: A. Randolph Blough, Director
Division of Reactor Projects
Region I

FROM: Ledyard B. Marsh, Acting Deputy Director ***/RA/***
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: RESPONSE TO TASK INTERFACE AGREEMENT - TIA 2001-12, REGARDING SUSQUEHANNA STEAM ELECTRIC STATION (SSES), UNITS 1 AND 2, DESIGN AND LICENSING BASES FOR THE STANDBY LIQUID CONTROL SYSTEM (TAC NOS. MB2764 AND MB2844)

1.0 INTRODUCTION

The Office of Nuclear Reactor Regulation (NRR) staff has reviewed your request for technical assistance, dated August 30, 2001. You were concerned that the licensee did not consider the standby liquid control (SLC) system subsystem inoperable in accordance with Technical Specification (TS) 3.1.7, Condition (B) or (C), even though each one of the subsystems could not alone deliver the required flowrate during an anticipated transient without scram (ATWS) concurrent with a main steam isolation valve (MSIV) closure and/or a loss-of-offsite power (LOOP). You requested that NRR review the SSES Units 1 and 2 design and licensing bases for the SLC system and evaluate the licensee's response to a recent inspection finding. Specifically, you requested a response to the two questions evaluated below.

2.0 EVALUATION

Question 1. Are the SLC system functional requirements needed to meet the ATWS rule [Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.62(c)(4)] part of the Susquehanna [SSES Units 1 and 2] SLC system design bases per [10 CFR] 50.2?

Yes. The SSES Units 1 and 2 SLC system design bases, per 10 CFR 50.2, include those functions that are required to meet the ATWS rule.

As noted in TIA 2001-12, the Nuclear Regulatory Commission (NRC) recently endorsed industry guidance and examples for identifying 10 CFR 50.2 design bases. Regulatory Guide 1.186 was issued in December 2000 and endorsed Appendix B to NEI 97-04, "Design Bases Program Guidelines." The general guidance in Appendix B to NEI 97-04 states that design-bases functions are:

> Functions performed by systems, structures and components that are (1) required by, or otherwise necessary to comply with, regulations, license conditions, orders or technical specifications, or (2) credited in licensee safety analyses to meet NRC requirements.

The consensus of the industry and NRC staff working groups that developed this guidance is that the ATWS rule is a regulation that imposes design requirements that must be complied with. In fact, Section (a) of the specific guidance portion of Appendix B to NEI 97-04 includes the ATWS rule as an event specifically addressed in the regulations from which bounding conditions may be derived. We would, therefore, disagree with the characterization of the ATWS scenario in the first paragraph of TIA 2001-12 as "beyond design basis."

The issue of whether a plant's design basis can change is dealt with in the section of the guidance entitled "Relationship of 10 CFR 50.2 Design Bases to Updated FSARs." This section states, in part, that "10 CFR 50.2 design bases for a plant may change as a result of new NRC requirements subsequent to the initial operating license and as a result of licensee changes to ensure compliance with NRC requirements." Thus, even though the original SSES Units 1 and 2 design bases did not include ATWS events, they must now be included.

Question 2. Are the SLC system functional requirements needed to meet the ATWS rule required to assess system operability as defined in the Susquehanna [SSES Units 1 and 2] Technical Specifications?

In its discussion of Question 1 above, the staff concluded that the capability to meet the functional requirements of 10 CFR 50.62 is a part of the SSES Units 1 and 2 SLC system design bases. Whether the SLC system capability to meet the ATWS rule requirements is a part of the SLC system's design basis, however, is not necessarily related to SLC system operability requirements. The standard technical specifications (STS), NUREG-1433, Specification 3.1.7 does not require meeting 10 CFR 50.62 functional requirements to meet Limiting Condition for Operation (LCO) 3.1.7. However, in its application dated August 1, 1996, to adopt the improved TSs (ITS), which were based on the STS, the SSES Units 1 and 2 licensee proposed a deviation from STS 3.1.7, in that it modified STS LCO 3.1.7, Condition A, associated SRs, and Bases "to establish requirements for meeting 10 CFR 50.62 into [SSES Units 1 and 2] ITS" (see Discussion of Deviation 3.1.7-P.3). The licensee's ITS submittal further stated that "This change is needed to ensure that improved technical specifications account for the [SSES Units 1 and 2] design." The NRC staff approved the ITS for SSES Units 1 and 2, Amendments 178 and 151, respectively, on July 30, 1998. Thus, the Susquehanna current TSs do require the capability to meet the ATWS rule functional requirements; that is, meeting ATWS rule functional requirements is one of the SLC system's "specified safety functions," for current TS 3.1.7. The SSES Units 1 and 2 current TS definition of operability states,

> A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its **specified safety function(s)** (emphasis added) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

Based on the above and its review of SSES Units 1 and 2's current TS 3.1.7, LCO, Actions, and SRs, and the information in the associated Bases, the NRR staff concludes that current TS 3.1.7 does require the SLC system to be capable of meeting the ATWS rule functional requirements to be operable. This is reflected in the Bases for TS 3.1.7 which states in part, "The minimum concentration of 13.6 weight percent ensures compliance with the requirements of 10 CFR 50.62...The OPERABILITY of the SLC system is based on the conditions of the borated solution in the storage tank and the availability of a flow path to the RPV, including OPERABILITY of the pumps and valves. Two SLC subsystems are required to be OPERABLE..."

The NRR staff also acknowledges the apparent inconsistency pointed out in the TIA which identifies a 72-hour completion time for failure to meet the boron concentration requirement of Condition A, and a 7-day completion time for failure to meet the subsystem OPERABILITY requirements of Condition B. Inasmuch as either of these Conditions would result in a loss of ability to meet the ATWS Rule, it would seem appropriate to have similar completion times. However, as the ability to correct a concentration problem may take less time than restoration of active components in an SLC subsystem, the lesser completion time for Condition A may still be appropriate. Also, as you pointed out, Condition C may have little meaning as Condition B already establishes an INOPERABILITY of the SLC system. We recommend you forward these comments to the licensee for its consideration of potential TS changes per NRC Administrative Letter 98-10, "Disposition of Technical Specifications That Are Insufficient to Assure Plant Safety," dated December 29, 1998.

3.0 CONCLUSION

Based on our review of your August 30, 2001, request for technical assistance and its supporting documentation, the NRR staff has concluded that the licensee must consider the ATWS rule functional requirements as part of the SSES Units 1 and 2 SLC system design bases and must consider the ATWS rule functional requirements for assessing SLC system operability.

cc: L. Plisco, Region II
G. Grant, Region III
K. Brockman, Region IV

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