



Public Service Electric and Gas Company P.O. Box E Hancocks Bridge, New Jersey 08038

Salem Generating Station

January 27, 1986

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Dear Sir:

SALEM GENERATING STATION  
LICENSE NO. DPR-75  
DOCKET NO. 50-311  
UNIT NO. 2

At 1040 hours, December 15, 1985, PSE&G notified the NRC Operations Center, in accordance with 10CFR 50.72, of an apparent violation of Technical Specification requirements which resulted in the inoperability of both Emergency Core Cooling System (ECCS) subsystems during operation in Mode 4 (Hot Shutdown). However, subsequent review of this event has revealed that both ECCS subsystems were, in fact, operable and that the Technical Specification requirements were met. The notification was therefore erroneous, and the event is not reportable in accordance with 10CFR 50.73. A description of the event and justification for non-reportability is included in attachment 1.

Sincerely yours,

J. M. Zupko, Jr.  
General Manager -  
Salem Operations

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Attachment

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## ATTACHMENT 1

On December 15, 1985, the Unit was being maintained in Mode 4 with the Residual Heat Removal (RHR) System aligned for the Reactor Coolant System (RCS) cooldown function. With this alignment, 2SJ69 (RHR Pump Suction from the RWST) is closed with power available to its motor operator, and 2RH1 and 2RH2 (Common Suction Valves from the Reactor Coolant System Hot Legs) are open. In addition, manual valves on the discharge of the RHR pumps are positioned to bypass the RHR heat exchangers and to provide letdown capability from the RCS to the Chemical and Volume Control System (CVCS).

Technical Specification 3.5.3 requires a minimum of one (1) ECCS subsystem, comprised of the following, to be operable while in Mode 4.

- a. one (1) operable centrifugal charging pump,
- b. one (1) operable residual heat removal heat exchanger,
- c. one (1) operable residual heat removal pump, and
- d. an operable flow path capable of taking a suction from the Refueling Water Storage Tank (RWST) upon being manually realigned and transferring suction to the containment sump during the recirculation phase of operation.

Surveillance Requirement 4.5.3.1 states:

The ECCS subsystem shall be demonstrated operable per the applicable portions of Surveillance Requirement 4.5.2.

Surveillance Procedure SP(0) 4.5.2b adequately addresses the Mode 4 requirements, as well as the Mode 1-3 requirements to satisfy LCO 3.5.2. During Mode 4, this surveillance dedicates one RHR train to ECCS while utilizing the other train for RCS cooldown. This is accomplished by shutting one (1) each of the two (2) heat exchanger bypass isolation valves and two (2) CVCS letdown isolation valves on the discharge side of the RHR pumps. The problem arose during the performance of this surveillance when, at 0930 hours, the shift discovered that the valves in the discharge were aligned for cooldown and not ECCS. At this time, they took the conservative action of entering Technical Specification Action Statement 3.5.3.a and declaring both ECCS subsystems inoperable.

Technical Specification Action Statement 3.5.3.a states:

With no ECCS subsystem operable because of the inoperability of either the centrifugal charging pump or the flow path from the RWST, restore at least one ECCS subsystem to operable status within one (1) hour or be in Mode 5 (Cold Shutdown) within the next twenty (20) hours.

The valves on the discharge side of the RHR pumps were subsequently aligned in accordance with SP(O) 4.5.2h and Action Statement 3.5.3.a was terminated at 1017 hours. Believing that the requirements of Specification 3.5.3 had been violated because both ECCS subsystems were inoperable for greater than twenty (20) hours while in Mode 4, the shift made the verbal notification at 1040 hours.

However, subsequent investigation reveals that the requirements of Technical Specification 3.5.3 are fulfilled while in the RHR cooldown alignment; i.e., the capability exists (from the control room) for manually realigning the suction of the RHR Pumps to the RWST by closing 2RH1 and 2RH2 and opening 2SJ69. The system can be realigned from the cooldown alignment to the injection mode by the operator from the control room, with the exception of closing the manual isolation valves to the letdown and heat exchanger bypass. Leaving these valves open results in the RHR trains being cross connected; however, during Mode 4 operation only one train of ECCS is required because of the stable reactivity condition of the core and the limited core cooling requirements. Therefore, having the RHR loops cross connected results in an RHR train with two (2) pumps and two (2) heat exchangers available which is in excess of the requirements of Technical Specification 3.5.3. Additionally, the alignment of the discharge is not addressed by the LCO or by its associated action statements. Technical Specification 3.5.3 addresses the requirement to have, as a minimum, one (1) RHR loop capable of taking a suction from the RWST upon being manually realigned from the RCS Hot Leg. This capability exists throughout the operation of the RHR System in the cooldown mode. Therefore, an ECCS subsystem was operable at all times, there was no violation of Technical Specifications and the event is consequently not reportable.

This event did however bring to light the fact that, although Surveillance Requirement 4.5.3.1 is a prerequisite for entering Mode 4 during a plant heatup (it is on the Mode 4 checkoff sheets), there was nothing to indicate that this surveillance should be performed when entering Mode 4 during a plant cooldown. As a result, Operating Procedure II-6.3.2 (Initiating Residual Heat Removal) was revised to require Action Statement 3.5.3.a to be entered when placing the RHR System in service during a plant cooldown. Additionally, SP(O) 4.5.3.1 is now required to be performed if the Unit is to remain in Mode 4 for greater than twenty (20) hours before proceeding to Mode 5.