



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NOS. 122 AND 102 TO FACILITY OPERATING
LICENSE NOS. DPR-70 AND DPR-75
PUBLIC SERVICE ELECTRIC & GAS COMPANY
PHILADELPHIA ELECTRIC COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY
SALEM NUCLEAR GENERATING STATION, UNITS 1 AND 2
DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated January 18, 1991, Public Service Electric and Gas Company requested an amendment to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Generating Station, Units 1 and 2. The proposed amendments would clarify existing technical specifications (TS) surveillance requirements 4.6.2.1.c.2 (Salem Unit 1) and 4.6.2.1.d.2 (Salem Unit 2) for the containment spray system. The proposed changes would clearly allow the use of the test line between the refueling water storage tank and the sodium hydroxide (NaOH) eductor to conduct the flow test and would relocate these surveillance requirements from Technical Specification Section 3.6.2.1 to Section 3.6.2.2.

2.0 EVALUATION

Surveillance Requirements 4.6.2.1.c.2 (Unit 1) and 4.6.2.1.d.2 (Unit 2) require that every 5 years the spray additive tank eductor flow rate be verified to be 35 ± 3.5 gpm with the spray pumps operating in the recirculation mode.

There are two different testing methods which may be used to verify the specified eductor flow rate. The first method involves measuring the flow rate to the eductor while taking suction from the spray additive tank (SAT). This method provides the most direct means of verifying the flow rate but requires that sodium hydroxide (NaOH) be injected into the system. Injection of NaOH into the system is an extremely undesirable action in that it would foul the system and require extensive clean up following testing. Additionally, injecting NaOH into the system could result in spraying the containment with NaOH if an equipment malfunction or operator error occurred.

The second method uses a test line from the refueling water storage tank (RWST) which ties into the eductor line downstream of the SAT isolation valves. This test line allows the flow test to be performed using RWST water. The SAT remains isolated from the system and NaOH injection is precluded. Because there are elevation differences between the SAT and the RWST and density differences between the borated water in the RWST and NaOH in the SAT, the indicated flow rate during testing with the flow from the RWST (RWST level at 41 ± 0.5 feet) must be $57 \text{ gpm} \pm 5.7 \text{ gpm}$ to ensure that the flow from the SAT would be $35 \text{ gpm} \pm 3.5 \text{ gpm}$. This correlation is based on a Westinghouse analysis that was verified during testing December 1980. All parameters that could affect the results of the correlation are the same for both of the Salem units.

Initial flow rate verification was carried out during startup using the first test method with demineralized water in the SAT. Subsequent tests have been carried out using the second test method (i.e., the test line from the RWST).

In order to clarify the acceptability of the use of the test line from the RWST, the existing surveillance requirement would be replaced with the following:

"Verifying that the spray additive tank eductor flow will be $35 \pm 3.5 \text{ gpm}$ to each containment spray system. Testing may be performed by measuring the flow of borated water from the RWST through the installed 2" test line and Valve CS31; using this test line up with the spray pump operating in the recirculation mode and the RWST level at $41 \text{ feet} \pm 0.5 \text{ feet}$, the measured flow shall be $57 \text{ gpm} \pm 5.7 \text{ gpm}$."

Although the use of the RWST test line does not directly measure the flow from the SAT to the eductor, the test configuration has been correlated to the actual configuration. The validity of the correlation has been verified through testing. Also, the use of the RWST test line precludes the inadvertent spraying of the containment with NaOH during the conduct of the test. The staff finds the proposal to allow the use of the RWST test line during the testing of the SAT eductor to be acceptable.

As specified in Section 6.2.2.1 of the Updated Final Safety Analysis Report, the containment spray system functions to provide the following:

1. Capability to spray cool water into the containment atmosphere in the event of a LOCA thereby ensuring that containment pressure is maintained below its design limit.
2. Capability to remove elemental iodine from the containment atmosphere should it be released during a LOCA.

The TSs contain two separate Limiting Conditions for Operation (LCO) intended to ensure that these capabilities are maintained. LCO 3.6.2.1

is intended to address the containment cooling function of the containment spray system while LCO 3.6.2.2 is intended to address the spray additive function of the system. In order to verify that proper flow exists in the line between the SAT and the point at which the test line from the RWST connects to the eductor supply, a second test is performed. This second test is included under Surveillance Requirement 4.6.2.2.d.

The proposed change would relocate Surveillance Requirements 4.6.2.1.c.2 for Salem 1 and 4.6.2.1.d.2 for Salem 2 from LCO 3.6.2.1. to 3.6.2.2. as an addition to Surveillance Requirement 4.6.2.2.d. This will consolidate the spray additive eductor testing under a single LCO. The Action Statements associated with LCOs 3.6.2.1 and 3.6.2.2 are identical and as a result, actions required because of failure to meet the flow test requirements remain the same. Based on the above, the staff finds the relocation of the Surveillance Requirements from 3.6.2.1 to 3.5.2.2 to be acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

4.0 CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (56 FR 6881) on February 20, 1991 and consulted with the State of New Jersey. No public comments were received and the State of New Jersey did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: March 25, 1991

Principal Contributor: James Stone