



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 193 AND 176 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, UNIT NOS. 1 AND 2
DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated January 7, 1997, the Public Service Electric & Gas Company (the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit Nos. 1 and 2, Technical Specifications (TSs). The requested changes would revise TS 3/4.2.5 to incorporate an exception to the provisions of TS 4.0.4 and to clarify the time at which the surveillance can be performed by adding that the surveillance is to be performed within 24 hours after attaining steady state conditions at or above 90% rated thermal power. The revised surveillance would also contain editorial enhancements that do not change the intent of the current surveillance. TS Table 3.2-1 for Salem Unit 1 would be revised to delete reference to three loop operation (which is not permitted at Salem Unit 1) in order to eliminate potential confusion when applying this table.

2.0 EVALUATION

TS 3/4.2.5 is applicable in Mode 1. TS 4.2.5.1 requires, in part, verification of reactor coolant system (RCS) flow rate at least once per 12 hours. This verification is performed by use of permanently installed instrumentation. No changes are being proposed for TS 4.2.5.1. TS 4.2.5.2 requires that RCS flow rate be determined to be within its limit by measurement at least once per 18 months. TS 4.2.5.2 provides for detection of possible RCS flow rate degradation and ensures that the correlation performed in accordance with TS 4.2.5.1 is valid. The RCS flow rate determination required by TS 4.2.5.2 is normally made by performing a precision heat balance of the secondary side and then using those measurements to determine the RCS flow rate. TS 4.0.4 requires that entry into an operational mode or other specified condition shall not be made unless the required surveillance requirement has been performed within the stated surveillance interval or as

otherwise specified. Since the Salem units have been shut down for more than 18 months, such a process cannot be performed prior to entry into Mode 1. Therefore, the licensee has proposed to modify TS 4.2.5.2 to incorporate an exception to the provisions of TS 4.0.4, to require that the surveillance be performed within 24 hours after attaining steady state conditions at or above 90% rated thermal power, and to specify the method for performing the flow rate determination (by performing a precision heat balance).

The NRC staff has reviewed the proposed changes to TS 4.2.5.2. We note that Item 2 of TS Table 4.3-1 (Reactor Trip System Instrumentation Surveillance Requirements) requires a daily heat balance channel calibration of the Power Range, Neutron Flux instrumentation when reactor power is above 15% of rated thermal power. These daily heat balance calibrations provide adequate assurance that the indicated thermal power will not be grossly in error before performing the proposed precision heat balance.

In addition, prior to the RCS flow rate testing at 90 percent rated thermal power, operation within the analyzed Departure from Nucleate Boiling parameters can be assured by testing of the flow channels. These tests, done prior to Mode 1, assure that the reactor trip instrumentation is reliable and will trip the reactor should low flow condition occur.

The last time the RCS flow measurement was conducted, the measured flow was more than 2% above the TS limit. The only change to the units that could affect flow since the last flow tests were performed is the plugging of additional steam generator tubes on Unit 2. The licensee estimated that this plugging would decrease the total RCS flow rate by about 0.4% and, thus, it would still be well above the TS limit.

A precision heat balance of the secondary side cannot be accurately performed to determine RCS flow rate until the reactor is operating at a significant power level. Therefore, the staff finds that the proposed exception to the provisions of TS 4.0.4 is appropriate. The proposed requirement to perform this surveillance within 24 hours after attaining steady state conditions at or above 90% of rated thermal power is reasonable since operation at or above 90% of rated thermal power provides conditions (e.g., adequate core ΔT) to accurately determine RCS flow rate. Requiring performance of this surveillance within 24 hours of attaining 90% of rated thermal power ensures that the reactor will not be operated for a substantial duration with potentially degraded flow rates. Specifying the method to be used for determining RCS flow rate (a precision heat balance) ensures that an appropriate method is used for determining RCS flow rate. Therefore, the proposed changes to TS 4.2.5.2 are acceptable.

The proposed revision to TS 4.2.5.2 also includes editorial enhancements that clarify the TSs and is acceptable.

Reference to three-loop operation was proposed to be deleted from TS Table 3.2-1 for Salem Unit 1. License Condition 2.C.4 of Facility Operating License DPR-70 prohibits reactor operation above P-7 (as defined in TS Table 3.3-1) with less than four reactor coolant loops in operation until such operation is approved by the NRC. This license condition was included in the original issuance of DPR-70 and reactor operation with less than four reactor coolant loops in operation has not been approved for Salem Unit 1. Therefore, this proposed change is acceptable. The proposed deletion will eliminate potential confusion when using this table.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendments. By letter dated February 24, 1997, the State official stated that the New Jersey Environmental Protection Bureau had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC 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 (62 FR 4353). 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.

5.0 CONCLUSION

The Commission 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Date: May 8, 1997