Public Service Electric and Gas Company

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JAN 0 7 1997

LR-N96394 LCR S96-19

United States Nuclear Regulatory Commission Document Control Desk Washington, DC 20555

REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS REACTOR COOLANT SYSTEM FLOW RATE MEASUREMENT SALEM GENERATING STATION NOS. 1 AND 2 FACILITY OPERATING LICENSES DPR-70 AND DPR-75 DOCKET NOS. 50-272 AND 50-311

Gentlemen:

In accordance with 10CFR50.90, Public Service Electric & Gas (PSE&G) Company requests a revision to the Technical Specifications (TS) for the Salem Generating Station Unit Nos. 1 and 2. In accordance with 10CFR50.91(b)(1), a copy of this submittal has been sent to the State of New Jersey.

The proposed TS changes contained herein represent changes to Specification 3/4.2.5 "DNB Parameters." This change revises the eighteen month surveillance performed to measure the Reactor Coolant System (RCS) total flow rate to account for the necessary plant conditions for performing the test in Mode 1 and the current extended plant outages. Presently, provisions do not exist in Salem's TSs that would enable the plants to transition into Mode 1 to perform the testing after the surveillance period has elapsed.

The proposed changes have been evaluated in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and PSE&G has concluded that this request involves no significant hazards considerations.

The basis for the requested change is provided in Attachment 1. A 10CFR50.92 evaluation with a determination of no significant hazards consideration is provided in Attachment 2. The marked up TS pages affected by the proposed changes are provided in Attachment 3.











Document Control Desk LR-N96394

Upon NRC approval of this proposed change, PSE&G requests that the amendment be made effective on the date of issuance, but provide for implementation prior to entry into Mode 1 from the current outages for Units 1 and 2, respectively. Because this change was identified recently and is needed prior to entry into Mode 1 on Salem Unit 2, PSE&G is requesting an expedited review. Entry into Mode 1 is presently scheduled for February, 1997.

-2-

Should you have any questions regarding this request, we will be pleased to discuss them with you.

Sincerely,

Aceris F.

Affidavit Attachments (3)

C Mr. H. J. Miller, Administrator - Region I U. S. Nuclear Regulatory Commission 475 Allendale Road King of Prussia, PA 19406

Mr. L. Olshan, Licensing Project Manager - Salem U. S. Nuclear Regulatory Commission One White Flint North 11555 Rockville Pike Mail Stop 14E21 Rockville, MD 20852

Mr. C. Marschall (X24) USNRC Senior Resident Inspector - Salem

Mr. K. Tosch, Manager IV Bureau of Nuclear Engineering 33 Arctic Parkway CN 415 Trenton, NJ 08625



REF: LR-N96394 LCR S96-19

STATE OF NEW JERSEY)) SS. COUNTY OF SALEM)

L. F. Storz, being duly sworn according to law deposes and says:

I am Senior Vice President - Nuclear Operations of Public Service Electric and Gas Company, and as such, I find the matters set forth in the above referenced letter, concerning Salem Generating Station, Units 1 and 2, are true to the best of my knowledge, information and belief.

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Subscribed and Sworn to before me ·199**9** (90 +n this day da nuar Notary Public of New Jersey

KIMBERLY JD BROWN NOTARY PUBLIC OF NEW JERSEY My Commission Expires April 21, 1998

My Commission expires on



SALEM GENERATING STATION UNIT NOS. 1 AND 2 FACILITY OPERATING LICENSES DPR-70 AND DPR-75 DOCKET NOS. 50-272 AND 50-311 CHANGE TO TECHNICAL SPECIFICATIONS REACTOR COOLANT SYSTEM FLOW RATE MEASUREMENT

BASIS FOR REQUESTED CHANGE

REQUESTED CHANGE AND PURPOSE

The proposed Technical Specification (TS) changes contained herein represent changes to Specification 3/4.2.5 "DNB Parameters." The present surveillance requirement 4.2.5.2 states that the Reactor Coolant System (RCS) flow rate shall be determined to be within its limit by measurement at least once per 18 months. PSE&G proposes to revise the TS to incorporate an exception to the provisions of Specification 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 (RTP).

This revision is necessary since the present Salem TS surveillance requirement does not provide a mechanism for the plants to transition into Mode 1 to perform the testing after the surveillance period, twenty-two months (including the allowed 25% extension), has elapsed.

Other proposed changes to the surveillance requirement to denote the type of test performed, precision heat balance, and to reference the flow rate in the applicable TS table, are considered editorial enhancements and do not change the intent of the current surveillance. Table 3.2-1, DNB Parameters, is also being revised for Salem Unit 1 to delete the reference to three loop operation in order to eliminate potential confusion when applying the table.

BACKGROUND

RCS flow rate is measured to ensure that the minimum departure from nucleate boiling ratio (DNBR) will be met for each of the transients analyzed for Salem. Flow measurement is performed every twelve hours in accordance with Specification 4.2.5.1 by the use of permanently installed instrumentation, three channels per loop, located on the discharge piping elbows of the Reactor Coolant pumps. Surveillance requirement 4.2.5.2 is performed once every eighteen months to detect RCS flow degradation and to ensure that the correlation performed every twelve hours of the flow indication channels with the measured flow will provide sufficient verification of flow rate.

Page 1 of 3

The frequency of eighteen months reflects the importance of verifying flow after a refueling outage when the core has been altered, which may have caused an alteration of flow resistance.

Similar to other plants in the industry, Salem performs the heat balance with the plant at steady state conditions and reactor power greater than 90% RTP to ensure accurate results. The last surveillance tests performed for Salem Units 1 and 2 were completed on March 12, 1994 and March 27, 1995, respectively. Since the Salem Units have been in an extended shutdown, the surveillance interval, including the extension allowed by Specification 4.0.2, will have been exceeded prior to the unit achieving 90% RTP. Provisions for the necessary RTP are not reflected in the surveillance nor is an exception to Specification 4.0.4 provided which would accommodate the current condition.

JUSTIFICATION OF REQUESTED CHANGES

To establish the RCS flows, a heat balance is performed using the secondary loop steam generator heat outputs and the RCS cold leg and hot leg temperatures. Measurement of these parameters must occur with the reactor at steady state conditions and at high thermal powers to yield the most accurate results. Performing the test after reaching steady state conditions will allow equilibrium Xenon conditions to be established, eliminating the need to adjust reactor power. Adjustments in reactor power can introduce inaccuracies into the heat balance test results. Also, performing the test with RTP at or greater than 90% ensures that sufficient heat is generated and more accurate results will be obtained. Testing within twenty-four hours ensures that the test is performed in a timely manner upon achieving the necessary plant conditions.

Prior to flow measurement testing during Mode 1 operation below 90% RTP, operation within the analyzed DNB parameters can be assured since the testing of the flow channels is performed prior to Mode 1 in accordance with Specifications 4.3.1.1.1, pertaining to reactor trip system instrumentation channel testing, and 4.3.1.1.3, pertaining to reactor trip system response time testing. These tests will assure that the trip instrumentation is reliable and capable of tripping the reactor should a low flow condition occur and that uncertainties, such as instrument drift, are minimal and within the acceptable limits.

For Salem Units 1 and 2, the last test results demonstrated that the margin to the minimum TS specified flow values was 2.2% and 4.0%, respectively. PSE&G is not aware of any modifications to the reactor core, reactor coolant pumps, or system configuration during the current outage that would result in a significant

LR-N96394 LCR S96-19

increase in the system resistance or decrease in pumping capabilities. It is anticipated that the total flow rate will decrease by approximately 0.4% during the upcoming operating cycle due to the additional steam generator (S/G) tubes that were plugged, (3.6% to 5.2% overall tubes plugged). However, it is expected that the actual RCS flow rate will remain well above the minimum value, 353,700 gpm, specified in the Unit 2 TS.

Salem is presently in the process of changing the S/Gs in Unit 1. The replacement S/Gs have been reviewed for the impact on RCS flows. The total RCS flow is conservatively estimated to be greater than 368,000 gpm upon the restart of Unit 1, resulting in at least 3% margin. PSE&G is not aware of any other changes made to or planned for Unit 1 that would impact the ability to meet the specified Unit 1 flow rate of 357,200 gpm. Also, it is anticipated that additional margin will be available upon startup of Unit 1 with the approval of the previously submitted license change request, S94-41, pertaining to the Margin Recovery Program, (ref. LR-N96114 dated May 10, 1996), which supports a lower RCS flow rate of 341,000 gpm for the Salem Units.

Future changes to the Salem plants that have the potential to impact the RCS flow rate will be assessed in accordance with requirements of 10CFR50.59. Other changes which could cause flow degradation, such as steam generator fouling, are expected to occur over a long (multi-cycle) period of time and will be detected by the current and proposed flow measurement testing.

The proposed revision to the RCS flow measurement is consistent with the intent of the eighteen month surveillance requirement 3.4.1.4 specified in NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 1, and its associated bases.

The elimination of the DNB parameters for three loop operation is being made to avoid potential confusion. Salem is prohibited from operating above ≥11% RTP with less than four Reactor Coolant loops in operation as specified in License Condition 2.C(4). Therefore, the three loop operation parameters are considered extraneous information and the elimination is an editorial change for consistency with the current license.

CONCLUSIONS

The proposed changes will allow the desired testing to be performed when appropriate plant conditions exist. The changes submitted by this request do not change the intent of the testing which is currently performed in accordance with the Salem TSs and are consistent with industry practices.



SALEM GENERATING STATION UNIT NOS. 1 AND 2 FACILITY OPERATING LICENSES DPR-70 AND DPR-75 DOCKET NOS. 50-272 AND 50-311 CHANGE TO TECHNICAL SPECIFICATIONS REACTOR COOLANT SYSTEM FLOW RATE MEASUREMENT

10CFR50.92 EVALUATION

Public Service Electric & Gas (PSE&G) has concluded that the proposed changes to the Salem Generating Station Unit Nos. 1 and 2 Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGE

The proposed Technical Specification (TS) changes contained herein represent changes to Specification 3/4.2.5 "DNB Parameters." PSE&G proposes to revise the TS to incorporate a clarifying information stating that the eighteen month Reactor Coolant System (RCS) flow measurement surveillance is not required to be performed until 24 hours after attaining steady state conditions at 90% rated thermal power (RTP) or greater and to take exception to the provisions of Specification 4.0.4. Other editorial enhancements are also proposed to the surveillance requirement to denote the type of test performed, precision heat balance, to reference the flow rate in the applicable TS table, and to eliminate the three loop operation DNB parameters.

BASIS

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The changes proposed on the RCS flow measurement and exemption to Specification 4.0.4 do not affect the operation of the equipment during conditions when they are required to perform their safety function. No physical changes to the plant result from the proposed changes made to the surveillance requirements. The measurement of RCS flow does not impact the probability of an accident.

Testing is being performed with the plant in the condition in which the automatic initiation signals for low RCS flow would result in a time consistent with the TS requirements. Document Control Des

Protection System in providing a reactor trip upon a loss of RCS flow. Degradations in flow will occur over a long duration; however, testing will continue to be performed within twenty-four hours upon achieving steady state ≥90% RTP after refueling which is a sufficiently short duration after startup to identify flow degradations.

Changes proposed to refer to Table 3.2-1 for the DNB parameters and to delete the Unit 1 three loop operation parameters, and the inclusion of the type of test performed are editorial in nature.

Therefore, the consequences of an accident previously evaluated are not significantly increased by the proposed changes.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not involve any modifications to existing plant equipment, do not alter the function of any plant systems, do not introduce any new operating configurations or new modes of plant operation, nor change the safety analyses. The point at which RCS flow is measured using a heat balance will not impact the ability to maintain or monitor Reactor Coolant flows. The proposed changes will, therefore, not create the possibility of a new or different kind of accident from any accident previously evaluated.

Changes proposed to refer to Table 3.2-1 for the DNB parameters and to delete the Unit 1 three loop operation parameters, and the inclusion of the type of test performed are editorial in nature.

3. The proposed change does not involve a significant reduction in a margin of safety.

The changes to the RCS flow surveillance do not decrease the scope of the existing testing, but will clarify the point at which the testing is performed.

The time in which testing is performed, after achieving steady state conditions after reaching ≥90% RTP ensures that testing is performed in a timely manner. Flow margins established as a result of previous testing will not be significantly reduced in light of recent outage activities. Future changes that might impact margins established by the testing will be reviewed in accordance with the requirements of 10CFR50.59. Changes proposed to refer to Table 3.2-1 for the DNB parameters and to delete the Unit 1 three loop operation parameters, and the inclusion of the type of test performed are editorial in nature.

All changes are consistent with the intent of Salem's current TS and with the 18 month surveillances specified in NUREG-1431, Revision 1.

The proposed change, therefore, does not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSE&G has determined that the proposed changes do not involve a significant hazards consideration.

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SALEM GENERATING STATION UNIT NOS. 1 AND 2 FACILITY OPERATING LICENSES DPR-70 AND DPR-75 DOCKET NOS. 50-272 AND 50-311 CHANGE TO TECHNICAL SPECIFICATIONS REACTOR COOLANT SYSTEM FLOW RATE MEASUREMENT

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Facility Operating License No. DPR-70 are affected by this change request:

Technical Specification Page

4.2.5.	. 2	3/4	2-13
Table	3.2-1	3/4	2-14

The following Technical Specifications for Facility Operating License No. DPR-75 are affected by this change request:

Technical Specification Page

4.2.5.2 3/4 2-16