Public Service
Electric and Gas
Company

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Vice President and Chief Nuclear Officer

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LCR 94-06

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

Gentlemen:

LICENSE AMENDMENT APPLICATION
INSERVICE LEAK AND HYDROSTATIC TESTING EXCEPTION
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354

This letter submits an application for amendment to Appendix A of Facility Operating License NPF-57 for the Hope Creek Generating Station, and is being filed in accordance with 10CFR50.90. Pursuant to the requirements of 10CFR50.91(b)(1), a copy of this request for amendment has been sent to the State of New Jersey.

The proposed Technical Specification changes contained herein represent changes to the Index, Table 1.2, "OPERATIONAL CONDITIONS," Section 3/4.10 "Special Test Exceptions," and the Bases. The addition of Specification 3/4.10.8, "Inservice Leak and Hydrostatic Testing," permits remaining in OPERATIONAL CONDITION 4 with reactor coolant temperatures up to 212°F to facilitate inservice leak and hydrostatic testing. The proposed changes require that secondary containment, which includes automatic isolation dampers and the Filtration, Recirculation and Ventilation System (FRVS), be operable.

With one exception, the proposed changes contained herein are identical to an Amendment previously approved by the NRC Staff for Nine Mile Point Unit 2 in an SER dated November 12, 1993. The exception is that Nine Mile Point Unit 2 expects that hydrostatic and leakage testing will be required above 200°F as reactor vessel fluence increases over time. PSE&G, at this time, has not predicted that results of fluence will require subsequent performance of hydrostatic and leakage testing above 200°F.

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

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A description of the requested amendment, supporting information and analyses for the change, and the basis for a no significant hazards consideration determination are provided in Attachment 1. The Technical Specification pages affected by the proposed change are marked in Attachment 2.

Upon NRC approval of this proposed change, PSE&G requests that the amendment be made effective on the date of issuance, but implemented within sixty days to provide sufficient time for associated administrative activities.

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

Sincerely,

Affidavit
Attachments (2)

C Mr. T. T. Martin, Administrator - Region I
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REF: NLR-N94050

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

S. E. Miltenberger, being duly sworn according to law deposes and says:

I am Vice President and Chief Nuclear Officer of Public Service Electric and Gas Company, and as such, I find the matters set forth in the above referenced letter, concerning the Hope Creek Generating Station, are true to the best of my knowledge, information and belief.

Subscribed and Sworn to before me
this 4th day of March, 1994

Notary public of New Jersey

My Commission expires on Oct 13, 1997

ANN L. SHIMP
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Oct. 13, 1997

ATTACHMENT 1

PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS

LICENSE AMENDMENT APPLICATION
INSERVICE LEAK AND HYDROSTATIC TESTING EXCEPTION
FACILITY OPERATING LICENSE NPF-57 NLR-N94050
HOPE CREEK GENERATING STATION LCR 94-06
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I. DESCRIPTION OF THE PROPOSED CHANGES

This amendment adds Special Test Exception 3/4.10.8, "Inservice Leak and Hydrostatic Testing," which allows for the performance of pressure testing at reactor coolant temperature up to 212°F while remaining in OPERATIONAL CONDITION 4. This test also requires that certain OPERATIONAL CONDITION 3 LCO's for Secondary Containment Isolation, Secondary Containment Integrity and Filtration, Recirculation and Ventilation System (FRVS) operability be met. Additionally, the Index, Table 1.2, "OPERATIONAL CONDITIONS," and the Bases require revisions to reflect these changes.

II. REASONS FOR THE CHANGES

The purpose of proposed Special Test Exception 3/4.10.8, "Inservice Leak and Hydrostatic Testing," is to allow reactor coolant pressure tests to be performed in OPERATIONAL CONDITION 4 with the reactor coolant temperature > 200°F but ≤ 212°F (normally corresponding to OPERATIONAL CONDITION 3). The changes will allow the primary containment to be open for frequent unobstructed access to perform inspections. It will also allow outage activities on various systems to continue while remaining consistent with OPERATIONAL CONDITION 4 applicable requirements that are in effect immediately prior to and immediately following inservice leak and hydrostatic testing.

Inservice hydrostatic testing and system leakage pressure tests required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code are normally performed every 10 years and prior to the reactor going critical after each refueling outage, respectively. Recirculation pump operation and a water solid or a near water solid Reactor Pressure Vessel (RPV) is used to achieve the necessary temperatures and pressures required for these tests. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by LCO 3/4.4.6 "Reactor Coolant System Pressure/Temperature Limits." These limits are conservatively calculated based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

The current RPV pressure and temperature (P/T) curves require that the test be conducted at temperatures approaching 200°F. Because decay heat and mechanical heat used to heat the reactor coolant do not allow for exact control, the existing margin between the test temperature specified in LCO 3/4.4.6 and the maximum temperature of 200°F of OPERATIONAL CONDITION 4 is inadequate. The proposed amendment will provide additional margin by allowing Reactor Cooling System (RCS) temperatures up to 212°F while remaining in OPERATIONAL CONDITION 4.

III. JUSTIFICATION FOR CHANGES

Allowing the reactor to be considered in OPERATIONAL CONDITION 4 during hydrostatic or leak testing, with a reactor coolant temperature of up to 212°F, essentially provides an exception to certain OPERATIONAL CONDITION 3 requirements, including operability of primary containment and the full compliment of redundant Emergency Core Cooling Systems (ECCS). The changes will allow the primary containment to be open for frequent unobstructed access to perform inspections. It will also allow outage activities on various systems to continue while remaining consistent with OPERATIONAL CONDITION 4 applicable requirements that are in effect immediately prior to and immediately following inservice leak and hydrostatic testing. The hydrostatic or leakage test is performed water solid, or near water solid, all rods in, and temperatures $\leq$ 212°F. The stored energy in the reactor core will be very low and the potential for failed fuel and a subsequent increase in coolant activity above LCO 3/4.4.5, "Reactor Coolant System Specific Activity," limits is minimal. In addition, the secondary containment, which includes automatic isolation dampers and the FRVS, will be operable and capable of handling airborne radioactivity from leaks that could occur during the performance of hydrostatic or inservice leakage testing. Airborne activity would not be significant in the event of a leak since reactor coolant temperature is limited to 212°F (i.e., little or no flashing of coolant steam). Requiring the secondary containment to be operable will conservatively assure that potential airborne radiation from leaks will be filtered through the FRVS, thereby further limiting radiation releases to the environment.

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core cooling systems to operate. The capability of the Low Pressure Coolant Injection and Core Spray subsystems, as required in OPERATIONAL CONDITION 4 by LCO 3/4.5.2, "ECCS-Shutdown," would be adequate to keep the core flooded under this condition. Inspections which would detect small leaks before significant inventory loss occurred are included as part of the hydrostatic test program.

For the purposes of this test, the protection provided by normally required OPERATIONAL CONDITION 4 LCOs, in addition to the secondary containment operability requirements of the Special Test Exception LCO, will ensure plant safety during normal hydrostatic and inservice leakage test conditions and will ensure acceptable consequences during postulated accident conditions.

These changes are consistent with the GE BWR/4 "Improved Technical Specifications," NUREG-1433, dated September 28, 1992 with two exceptions. The first is that we need not state in the LCO that the provisions of LCO 3/4.4.9, "Residual Heat Removal," may be suspended. This is based on the fact that the Hope Creek Generating Station was licensed to a version of Standard Technical Specifications which already has a provision to suspend RHR during pressure testing. The second is that the change proposes a temperature limit of 212°F during hydrostatic and leakage testing in OPERATIONAL CONDITION 4.

IV. DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

PSE&G has, pursuant to 10CFR50.92, reviewed the proposed amendment to determine whether our request involves a significant hazards consideration. We have determined that the operation of the Hope Creek Generating Station in accordance with the proposed changes.

1. Will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes are requested to allow inservice leak and hydrostatic testing with the reactor in OPERATIONAL CONDITION 4 and the average reactor coolant temperature up to 212°F. The change to allow inservice leak and hydrostatic testing in OPERATIONAL CONDITION 4 will not increase the probability or the consequences of an accident. The probability of a leak in the reactor coolant pressure boundary during inservice leak and hydrostatic testing is not increased by considering the reactor in OPERATIONAL CONDITION 4. The hydrostatic or inservice leak test is performed water solid or near water solid, all rods in, and temperatures ≤ 212°F. The stored energy in the reactor core will be very low and the potential for failed fuel and a subsequent increase in coolant activity above Technical Specification limits are minimal. In addition, secondary containment will be operable and capable of handling airborne radioactivity from leaks that could occur during the performance of hydrostatic or inservice leak testing. Requiring secondary containment to be operable will conservatively ensure that potential airborne radiation from leaks will be filtered through the Filtration, Recirculation and Ventilation System (FRVS), thereby limiting radiation releases to the environment. Therefore, the changes will not significantly increase the consequences of an accident.

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure ECCS subsystems to operate. The capability of the subsystems that are required for OPERATIONAL CONDITION 4 would be adequate to keep the core flooded under this condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred. This is an integral part of the hydrostatic testing program. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Allowing the reactor to be considered in OPERATIONAL CONDITION 4 during inservice leak or hydrostatic testing, with reactor coolant temperature up to 212°F, essentially provides an exception to OPERATIONAL CONDITION 3 requirements, including operability of primary containment and the full complement of redundant Emergency Core Cooling Systems. The hydrostatic or inservice leak test is performed water solid, or near water solid, all rods in, and temperatures ≤ 212°F. The stored energy in the reactor core will be very low and the potential for failed fuel and a subsequent increase in coolant activity above Technical Specification limits are minimal. In addition, secondary containment will be operable and capable of handling airborne radioactivity or leaks that could occur.

The inservice leak or hydrostatic test conditions remain unchanged. The potential for a system leak remains unchanged since the reactor coolant system is designed for temperatures exceeding 500°F with similar pressures. There are no alterations of any plant systems that cope with the spectrum of accidents. The only difference is that a different subset of systems would be utilized for accident mitigation from those of OPERATIONAL CONDITION 3. Therefore, this will not create the possibility of a new or different kind of accident from any previously evaluated.

3. Will not involve a significant reduction in a margin of safety.

The proposed changes allow inservice leak and hydrostatic testing to be performed with reactor coolant temperature up to 212°F and the reactor in OPERATIONAL CONDITION 4. Since the reactor vessel head will be in place, secondary containment integrity will be maintained and all systems required in OPERATIONAL CONDITION 4 will be operable in accordance with the Technical Specifications, the proposed changes will not have any significant impact on any design bases accident or safety limit. The hydrostatic or inservice leak testing is performed water solid, or near water solid, all rods in, and temperatures ≤ 212°F. The stored energy in the core is very low and the potential for failed fuel and a subsequent increase in coolant activity would be minimal. The RPV would rapidly depressurize in the event of a large primary system leak and the low pressure injection systems normally operable in OPERATIONAL CONDITION 4 would be adequate to keep the core flooded. This would ensure that the fuel would not exceed the 2200°F peak clad temperature limit.

Moreover, requiring secondary containment, including isolation capability, to be operable will assure that potential airborne radiation can be filtered through the FRVS. This will assure that doses remain well within the limits of 10CFR100 guidelines. Small system leaks would be detected by inspection before significant inventory loss has occurred. Therefore, this special test exception will not involve a significant reduction in a margin of safety.

V. CONCLUSION

Proposed Technical Specification Section 3/4.10.8 would allow the reactor to be considered in OPERATIONAL CONDITION 4 during inservice leak and hydrostatic testing with a reactor coolant temperature of up to 212°F. This essentially provides an exception to OPERATIONAL CONDITION 3 requirements, including operability of Primary Containment and the full complement of redundant Emergency Core Cooling Systems.

The changes will allow the primary containment to be open for frequent unobstructed access to perform inspections. It will also allow outage activities on various systems to continue while remaining consistent with OPERATIONAL CONDITION 4 applicable requirements that are in effect immediately prior to and immediately following inservice leak and hydrostatic testing.

The hydrostatic test or inservice leakage test is performed water solid or near water solid, all rods in, and temperature ≤ 212°F. The stored energy in the reactor core will be very low and the potential for failed fuel and a subsequent increase in coolant activity above Technical Specification limits are minimal. In addition, secondary containment, including the automatic isolation dampers and the FRVS will be operable. The RPV would rapidly depressurize in the event of a large primary system leak and the low pressure injection systems normally operable in OPERATIONAL CONDITION 4 would be adequate to keep the core flooded. Furthermore, potential airborne radiation from leaks (which would not be significant due to the 212°F limitation) (i.e. little or no flashing of coolant to steam) occurring during the testing can be treated by the FRVS, which will be required to be operable during this testing.

For these reasons, there is reasonable assurance that the changes that would be authorized by the proposed amendment can be implemented without endangering the health and safety of the public.