Docket file

50-443

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

October 12, 1995

Mr. Ted C. Feigenbaum
Senior Vice President
and Chief Nuclear Officer
North Atlantic Energy Service Corporation
Post Office Box 300
Seabrook, NH 03874

Dear Mr. Feigenbaum:

SUBJECT: FACILITY OPERATING LICENSE NPF-86: CHANGE TO TECHNICAL SPECIFICATION BASES SECTION 3/4.4.2 SAFETY VALVES (TAC M93711)

By letter dated September 12, 1995, North Atlantic Energy Service Corporation (North Atlantic) proposed a change to the Seabrook Station, Unit No. 1 (Seabrook) Technical Specifications (TS) Bases 3/4.4.2. The proposed change would clarify what constitutes an operable pressurizer safety valve when the reactor is in Operational Mode 5. The revised basis would state inter alia that the operable pressurizer safety valve may be removed from its flange when the plant is in Mode 5 and continue to meet the intent of the TS.

The clarification is requested to permit North Atlantic to implement certain contingencies to allow mid-loop operations while fuel remains in the reactor vessel. Specifically, one contingency would provide a vent path to allow water from the refueling water storage tank (RWST) to flow by gravity into the reactor coolant system (RCS). North Atlantic has determined that the necessary vent area to assure adequate flow is equivalent to a cross sectional area equivalent to the pressurizer manway or to that cumulative area available with the removal of three pressurizer safety valves. However, North Atlantic notes that TS 3.4.2.1 requires at least one pressurizer safety valve set to relieve at 2485 psig ± 3% to be operable when in operational Mode 5. However, with no pressurizer safety valves installed, a strict interpretation of TS 3.4.2.1 could conclude that the Limiting Condition for Operation is not satisfied, thus precluding the desired contingency. North Atlantic asserts that a system configuration with three pressurizer safety valves removed provides superior overpressure protection than with one operable safety valve as required by the TS. North Atlantic, furthermore, asserts that the proposed configuration would be consistent with the Standard Technical Specifications (STS) for Westinghouse Plants, NUREG-1431. North Atlantic correctly notes that the STS do not require an operable pressurizer safety valve in MODE 5. The STS Basis 3.4.10 provides the following:

> Overpressure protection is required in MODES 1, 2, 3, 4, and 5; however, in MODE 4, with one or more RCS cold leg temperatures ≤ 329°F, and MODE 5 and MODE 6 with the reactor vessel head on, overpressure protection is provided by operating procedures and by meeting the requirements of LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System."

The STS Basis states further, with regard to applicability:

> In MODES 1, 2, and 3, and portions of MODE 4 above the LTOP arming temperature, OPERABILITY of three valves is required because the combined capacity is required to keep reactor coolant pressure

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below 110% of its design value during certain accidents. MODE 3 and portions of MODE 4 are conservatively included, although the listed accidents may not require the safety valves for protection.

The LCO is not applicable in MODE 4 when all RCS cold leg temperatures are ≤ 329°F or in MODE 5 because LTOP is provided. Overpressure protection is not required in MODE 6 with reactor vessel head detensioned.

North Atlantic has proposed to add the following statement to Basis 3/4.4.2:

During plant operations in Mode 5, it is conservative and consistent with Technical Specifications that the OPERABLE pressurizer safety valve may be removed from its flange and continue to meet the intent of this Specification. The removal of the pressurizer safety valve will afford the reactor coolant system equivalent or superior protection as an overpressure device. This will also allow the removal of the three pressurizer safety valves to be used as a gravity vent path in place of removing the pressurizer manway when the plant is at reduced inventory conditions.

The staff has reviewed the proposed change and finds that the proposed clarification is consistent with the intent of TS 3.4.2.1 and with the Standard Technical Specifications for Westinghouse Plants, NUREG-1431. Therefore, the staff has no objection to your proposed modification to Bases Section 3/4.4.2.

Enclosed is a copy of revised Bases pages B 3/4 4-2 and B 3/4 4-2a.

Sincerely,

Original signed by:

Albert W. De Agazio, Sr. Project Manager
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-443
Serial No. SEA-95-022

Enclosures: As stated

cc w/encls: See next page

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> below 110% of its design value during certain accidents. MODE 3 and portions of MODE 4 are conservatively included, although the listed accidents may not require the safety valves for protection.
>
> The LCO is not applicable in MODE 4 when all RCS cold leg temperatures are ≤ 329°F or in MODE 5 because LTOP is provided. Overpressure protection is not required in MODE 6 with reactor vessel head detensioned.

North Atlantic has proposed to add the following statement to Basis 3/4.4.2:

> During plant operations in Mode 5, it is conservative and consistent with Technical Specifications that the OPERABLE pressurizer safety valve may be removed from its flange and continue to meet the intent of this Specification. The removal of the pressurizer safety valve will afford the reactor coolant system equivalent or superior protection as an overpressure device. This will also allow the removal of the three pressurizer safety valves to be used as a gravity vent path in place of removing the pressurizer manway when the plant is at reduced inventory conditions.

The staff has reviewed the proposed change and finds that the proposed clarification is consistent with the intent of TS 3.4.2.1 and with the Standard Technical Specifications for Westinghouse Plants, NUREG-1431. Therefore, the staff has no objection to your proposed modification to Bases Section 3/4.4.2.

Enclosed is a copy of revised Bases pages B 3/4 4-2 and B 3/4 4-2a.

Sincerely,

Albert W. De Agazio

Albert W. De Agazio, Sr. Project Manager
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-443
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cc w/encls: See next page

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SEABROOK STATION, UNIT NO. 1

TECHNICAL SPECIFICATION BASES

Replace the following pages of Appendix A, Technical Specification Bases with the attached pages as indicated. The revised pages contain vertical lines indicating the areas of change. Overleaf and overflow pages have been provided.

Remove	Insert
B 3/4 4-1*	B 3/4 4-1*
B 3/4 4-2	B 3/4 4-2
B 3/4 4-2a*	B 3/4 4-2a*

BASES

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

The plant is designed to operate with all reactor coolant loops in operation and maintain DNBR above 1.30 during all normal operations and anticipated transients. In MODES 1 and 2 with one reactor coolant loop not in operation, this specification requires that the plant be in at least HOT STANDBY within 6 hours.

In MODE 3, two reactor coolant loops provide sufficient heat removal capability for removing core decay heat even in the event of a bank withdrawal accident; however, a single reactor coolant loop provides sufficient heat removal capacity if a bank withdrawal accident can be prevented, i.e., by opening the Reactor Trip System breakers. Single failure considerations require that two loops be OPERABLE at all times.

In MODE 4, and in MODE 5 with reactor coolant loops filled, a single reactor coolant loop or RHR loop provides sufficient heat removal capability for removing decay heat; but single failure considerations require that at least two loops (either RHR or RCS) be OPERABLE.

In MODE 5 with reactor coolant loops not filled, a single RHR loop provides sufficient heat removal capability for removing decay heat; but single failure considerations, and the unavailability of the steam generators as a heat removing component, require that at least two RHR loops be OPERABLE.

The operation of one reactor coolant pump (RCP) or one RHR pump provides adequate flow to ensure mixing, prevent stratification and produce gradual reactivity changes during boron concentration reductions in the Reactor Coolant System. The reactivity change rate associated with boron reduction will, therefore, be within the capability of operator recognition and control.

The restrictions on starting an RCP in MODES 4 and 5 are provided to prevent RCS pressure transients, caused by energy additions from the Secondary Coolant System, which could exceed the limits of Appendix G to 10 CFR Part 50. The RCS will be protected against overpressure transients and will not exceed the limits of Appendix G by restricting starting of the RCPs to when the secondary water temperature of each steam generator is less than 50°F above each of the RCS cold-leg temperatures.

3/4.4.2 SAFETY VALVES

The pressurizer Code safety valves operate to prevent the RCS from being pressurized above its Safety Limit of 2735 psig. Each safety valve is designed to relieve 420,000 lbs per hour of saturated steam at the valve Setpoint. The relief capacity of a single safety valve is adequate to relieve any overpressure condition which could occur during shutdown. In the event that no safety valves are OPERABLE, an operating RHR loop, connected to the RCS, provides overpressure relief capability and will prevent RCS overpressurization. In addition, the Overpressure Protection System provides a diverse means of protection against RCS overpressurization at low temperatures.

3/4.4.4 RELIEF VALVES (Continued)

(2) No Surveillance Requirement (ACOT or TADOT) exists for verifying automatic operation.

(3) The required ACTION for an inoperable PORV(s) (closing the block valve) conflicts with any presumed requirement for automatic actuation.

3/4.4.5 STEAM GENERATORS

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation, so that corrective measures can be taken.