



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 43 TO FACILITY OPERATING LICENSE NO. NPF-86

NORTH ATLANTIC ENERGY SERVICE CORPORATION

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

1.0 INTRODUCTION

By letter dated September 5, 1995, North Atlantic Energy Service Corporation (North Atlantic) proposed an amendment to the Appendix A Technical Specifications (TSs) for the Seabrook Station, Unit 1 (Seabrook). The proposed changes would revise TS Table 3.7-1 by lowering the maximum allowable power range neutron flux high setpoint when one or more main steam safety valves (MSSVs) are inoperable. The proposed changes would also revise the Bases for TS 3/4.7.1.1 to include the algorithm used for determining the new setpoint values. The proposed changes also would revise TS Table 3.7-2 to reduce the lift setpoints of MSSVs.

2.0 EVALUATION

Westinghouse Electric Corporation (Westinghouse) has determined that the maximum allowable power range neutron flux high setpoints given in TS Table 3.7-1 may not be low enough to prevent a secondary side overpressurization during a loss of load/turbine trip. In Nuclear Safety Advisory Letter (NSAL) 94-001 dated January 20, 1994, Westinghouse reported their determination that the maximum allowable initial power level is not a linear function of available MSSV relief capacity. It was further determined that the current TS provisions for reduced reactor power levels with inoperable MSSVs may not preclude the secondary side pressure from exceeding 110% of its design value during a loss of main feedwater transient, particularly at lower power levels. NSAL 94-001 also provided licensees with an algorithm for determining revised neutron flux high setpoints. North Atlantic has developed a revised algorithm similar to the one provided by Westinghouse. The major difference is that North Atlantic's revised algorithm would lead to slightly more accurate calculated nuclear power by excluding heat input from reactor coolant pumps from the thermal power of the nuclear steam supply systems. We find the North Atlantic's revised algorithm conservative and acceptable.

North Atlantic has calculated new neutron flux high setpoint values using its revised algorithm. The new values were lower than the values in the current TS. This process resulted in high neutron flux reactor trip setpoint values

of 66%, 47%, and 28% of rated thermal power for a maximum of one, two, and three inoperable MSSVs, respectively, on any operating steam generator. Current TS values are 87%, 65% and 43% for those same conditions.

The staff has found that North Atlantic's revised algorithm ensures that the maximum power level allowed for operation with inoperable MSSVs is below the heat removing capability of the operable MSSVs. This ensures that the secondary system pressure will not exceed 110% of its design value. In addition, the new setpoints are more conservative than the previous setpoints. Therefore, the staff finds that the proposed changes to TS Table 3.7-1 and Bases 3/4.7.1.1 are acceptable.

North Atlantic also proposed revised TS Table 3.7-2 to reduce lift setpoints of the MSSVs. There are five MSSVs in each of the four main steam lines. North Atlantic proposed setpoints for the four out of five MSSVs in each of the four main steam lines with slightly lower setpoints than that in the current TS and keep the MSSV with the lowest setting at the same setpoint of 1200 psia as that in the current TS. North Atlantic has stated that since the capacities of the MSSVs are not being changed and the modified lifting setpoints will cause the MSSVs to open earlier in a loss of load event, the consequences of a loss of load transient with the new MSSV setpoints is still within the current design basis at Seabrook. For postulated events where excessive reactor coolant system cooldown via MSSV blowdown could be a concern, there is no effect since the lift setpoint of the lowest set MSSV in each loop is not changed. We have reviewed North Atlantic's submittal and agree with its assessment.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Hampshire and Massachusetts State officials were notified of the proposed issuance of the amendment. The State officials had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (60 FR 51505). Accordingly, the amendment meets 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 amendment.

## 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: November 2, 1995