



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

NORTH ATLANTIC ENERGY SERVICE CORPORATION, ET AL*

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 43
License No. NPF-86

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by North Atlantic Energy Service Corporation, et al. (the licensee), dated September 5, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

*North Atlantic Energy Service Company (NAESCO) is authorized to act as agent for the: North Atlantic Energy Corporation, Canal Electric Company, The Connecticut Light and Power Company, Great Bay Power Corporation, Hudson Light and Power Department, Massachusetts Municipal Wholesale Electric Company, Montaup Electric Company, New England Power Company, New Hampshire Electric Cooperative, Inc., Taunton Municipal Light Plant, and The United Illuminating Company, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

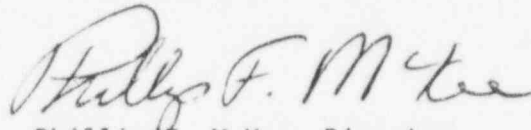
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-86 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 43, and the Environmental Protection Plan contained in Appendix B are incorporated into Facility License No. NPF-86. NAESCO shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Phillip F. McKee, Director
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: November 2, 1995

3/4.7 PLANT SYSTEMS

3/4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.1 All main steam line Code safety valves associated with each steam generator shall be OPERABLE with lift settings as specified in Table 3.7-2.

APPLICABILITY: MODES 1, 2, and 3[#].

ACTION:

With four reactor coolant loops and associated steam generators in operation and with one or more main steam line Code safety valves inoperable, operation in MODES 1, 2, and 3 may proceed, provided that within 4 hours either the inoperable valve is restored to OPERABLE status or the Power Range Neutron Flux High Trip Setpoint is reduced per Table 3.7-1; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours .

SURVEILLANCE REQUIREMENTS

4.7.1.1 No additional requirements other than those required by Specification 4.0.5.

[#] Entry into this MODE is permitted for up to 24 hours to perform post modification or post-maintenance testing to verify OPERABILITY of components. ACTION requirements shall not apply until OPERABILITY has been verified.

TABLE 3.7-1

MAXIMUM ALLOWABLE POWER RANGE NEUTRON FLUX HIGH SETPOINT WITH
INOPERABLE STEAM LINE SAFETY VALVES DURING FOUR-LOOP OPERATION

<u>MAXIMUM NUMBER OF INOPERABLE SAFETY VALVES ON ANY OPERATING STEAM GENERATOR</u>	<u>MAXIMUM ALLOWABLE POWER RANGE NEUTRON FLUX HIGH SETPOINT (PERCENT OF RATED THERMAL POWER)</u>
1	66
2	47
3	28

TABLE 3.7-2

STEAM LINE SAFETY VALVES PER LOOP

<u>VALVE NUMBER</u>				<u>LIFT SETTING* ($\pm 3\%$)**</u>	<u>ORIFICE SIZE</u>
<u>Loop 1</u>	<u>Loop 2</u>	<u>Loop 3</u>	<u>Loop 4</u>		
V6	V22	V36	V50	1185 psig	16.0 sq. in.
V7	V23	V37	V51	1195 psig	16.0 sq. in.
V8	V24	V38	V52	1205 psig	16.0 sq. in.
V9	V25	V39	V53	1215 psig	16.0 sq. in.
V10	V26	V40	V54	1225 psig	16.0 sq. in.

*The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

**Within $\pm 1\%$ following main steam line Code safety valve testing.

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1 TURBINE CYCLE

3/4.7.1.1 SAFETY VALVES

The OPERABILITY of the main steam line Code safety valves ensures that the Secondary System pressure will be limited to within 110% (1320 psia) of its design pressure of 1200 psia during the most severe anticipated system operational transient. The maximum relieving capacity is associated with a Turbine trip from 100% RATED THERMAL POWER coincident with an assumed loss of condenser heat sink (i.e., no steam bypass to the condenser).

The specified valve lift settings and relieving capacities are in accordance with the requirements of Section III of the ASME Boiler and Pressure Code, (1974 Edition, including the Summer 1975 Addenda). The total relieving capacity for all valves on all of the steam lines is 1.816×10^7 lbs/hr which is 120% of the total secondary steam flow of 1.514×10^7 lbs/hr at 100% RATED THERMAL POWER. A minimum of two OPERABLE safety valves per steam generator ensures that sufficient relieving capacity is available for the allowable THERMAL POWER restriction in Table 3.7-1.

STARTUP and/or POWER OPERATION is allowable with safety valves inoperable within the limitations of the ACTION requirements on the basis of the reduction in Secondary Coolant System steam flow and THERMAL POWER required by the reduced Reactor trip settings of the Power Range Neutron Flux channels. The Reactor Trip Setpoint reductions are derived on the following bases:

For four loop operations:

$$Hi \phi = (100/Q_{rated}) \times \left[\frac{(W_s \times h_{fg} \times N)}{K} - Q_{rcp} \right]$$

where:

- Hi ϕ = Safety Analysis power range high neutron flux setpoint, percent of RATED THERMAL POWER
- Q_{rated} = RATED THERMAL POWER, Mwt
- Q_{rcp} = Reactor coolant pump heat, Mwt
- K = Conversion factor, 3.412×10^6 (Btu/hr)/Mwt
- h_{fg} = heat of vaporization for steam at 110% of the Secondary System design pressure, Btu/lbm
- N = Number of loops in plant
- W_s = Minimum total steam flow rate, lbm/hr, of the operable MSSVs on any one steam generator at the MSSV inlet pressure which assures all Secondary System pressures are no greater than 110% of design.

PLANT SYSTEMS

BASES

3/4.7.1 TURBINE CYCLE (Continued)

3/4.7.1.1 SAFETY VALVES

The steam flow rate through each operable MSSV is calculated with consideration of 1) opening setpoint with allowance for as-found setpoint tolerance, 2) accumulation, and 3) inlet pressure. For example, if the maximum number of inoperable MSSVs on any one steam generator is one, then W_s is a summation of the calculated flow through each MSSV at the appropriate valve inlet pressure, excluding the MSSV with the highest flow. If the maximum number of inoperable MSSVs per steam generator is three, then W_s is a summation of the calculated flow through each MSSV at the appropriate valve inlet pressure, excluding the three MSSVs with the highest flows. The following plant specific safety valve flow rates were used:

SG Safety Valve Number (Bank No.)	Main Steam System	
	Set Pressure (psia)	Flow (lbm/hr per loop)
1	1200	893,160
2	1210	900,607
3	1220	908,055
4	1230	915,502
5	1240	922,950

The Safety Analysis limit values of the power range high neutron flux setpoints calculated from this algorithm are adjusted lower for use in Technical Specification 3.7.1.1. to account for instrument and channel uncertainties.

PLANT SYSTEMS

BASES

3/4.7.1 TURBINE CYCLE (Continued)

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the Auxiliary Feedwater System ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss-of-offsite power.

The electric motor-driven emergency feedwater pump is capable of delivering a total feedwater flow of 650 gpm at a pressure of 1221 psig to the entrance of the steam generators. The steam-driven emergency feedwater pump is capable of delivering a total feed water flow of 650 gpm at a pressure of 1221 psig to the entrance of the steam generators. The startup feedwater pump serves as the third auxiliary feedwater pump and can be manually aligned to be powered from an emergency bus (Bus 5). The startup feedwater pump is capable of taking suction on the dedicated emergency feedwater volume of water in the condensate storage tank and delivering a total feedwater flow of in excess of 650 gpm at a pressure of 1221 psig to the entrance of the steam generator via either the main feedwater header or with manual alignment to the emergency feed water flow path. This capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the Residual Heat Removal System may be placed into operation.

3/4.7.1.3 CONDENSATE STORAGE TANK

The OPERABILITY of the condensate storage tank with the minimum water volume ensures that sufficient water is available to cool the RCS to a temperature of 350°F. The OPERABILITY of the concrete enclosure ensures this availability of water following rupture of the condensate storage tank by a tornado generated missile. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

3/4.7.1.4 SPECIFIC ACTIVITY

The limitations on Secondary Coolant System specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 dose guideline values in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm reactor-to-secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the safety analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blow down in the event of a steam line rupture. This restriction is required to: (1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and (2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the Surveillance Requirements are consistent with the assumptions used in the safety analyses.

ATTACHMENT TO LICENSE AMENDMENT NO. 43

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

Replace the following pages of Appendix A, Technical Specifications, with the attached pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change. Overleaf pages have been provided.*

Remove

3/4 7-1*

3/4 7-2

B 3/4 7-1

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B 3/4 7-2*

Insert

3/4 7-1*

3/4 7-2

B 3/4 7-1

B 3/4 7-1A

B 3/4 7-2*