

August 27, 1992

Docket No. 50-443

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

Dear Mr. Feigenbaum:

SUBJECT: ISSUANCE OF AMENDMENT NO. 14 TO FACILITY OPERATING LICENSE NO.  
NPF-86 - SEABROOK STATION, UNIT NO. 1 (TAC NO. M83791)

The Commission has issued the enclosed Amendment No. 14 to Facility Operating License No. NPF-86 for the Seabrook Station. This amendment is in response to your application dated June 11, 1992.

This amendment would change the Seabrook Station Technical Specifications (TS) to implement the guidance of NRC Generic Letter (GL) 91-08, "Removal of Component Lists from Technical Specifications." The guidance of GL 91-08 is implemented by removing the listing of Secondary Containment Bypass Leakage Paths (Table 3.6-1) from TS. The listing of leak paths will instead be included in the Seabrook Technical Requirements Manual and the Final Safety Analysis Report (FSAR). Additionally, TS 3.6.3 is revised to permit locked or sealed closed containment isolation valves to be opened on an intermittent basis under administrative control.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly FEDERAL REGISTER notice.

Sincerely,

Original signed by  
Gordon E. Edison, Senior Project Manager  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 14 to License No. NPF-86
2. Safety Evaluation

cc w/enclosures:

See next page

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Seabrook

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AMENDMENT NO. 14 TO NPF-86 SEABROOK STATION DATED August 27, 1992

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

NORTH ATLANTIC ENERGY SERVICE CORPORATION, ET AL.\*

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.14  
License No. NPF-86

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
  - A. The application for amendment filed by the North Atlantic Energy Service Corporation (NAESCO) (the licensee), acting for itself and as agent and representative of the 11 other utilities listed below and hereafter referred to as licensees, dated June 11, 1992, 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 set forth in 10 CFR Chapter I;
  - 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 Corporation is authorized to act as agent for the North Atlantic Energy Corporation, the Canal Electric Company, The Connecticut Light and Power Company, EUA Power Corporation, Hudson Light & Power Department, Massachusetts Municipal Wholesale Electric Company, Montaup Electric Company, New England Power Company, New Hampshire Electric Cooperative, Inc., Taunton Municipal Light Plant, The United Illuminating Company, and Vermont Electric Generation and Transmission Cooperative, Inc., 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. 14, 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 its date of issuance and shall be implemented within 60 days of receipt of this letter.

FOR THE NUCLEAR REGULATORY COMMISSION



Walter Butler, 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: August 27, 1992

ATTACHMENT TO LICENSE AMENDMENT NO.14

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Overleaf pages have been provided.\*

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### 3/4.6 CONTAINMENT SYSTEMS

#### 3/4.6.1 PRIMARY CONTAINMENT

##### CONTAINMENT INTEGRITY

##### LIMITING CONDITION FOR OPERATION

---

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

##### SURVEILLANCE REQUIREMENTS

---

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

- a. At least once per 31 days by verifying that all penetrations\* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions except for valves that are open under administrative control as permitted by Specification 3.6.3;
- b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3; and
- c. After each closing of each penetration subject to Type B testing, except the containment air locks, if opened following a Type A or B test, by leak rate testing the seal with gas at a pressure not less than  $P_a$ , 49.6 psig, and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2d. for all other Type B and C penetrations, the combined leakage rate is less than  $0.60 L_a$ .

---

\*Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

## CONTAINMENT SYSTEMS

### PRIMARY CONTAINMENT

#### CONTAINMENT LEAKAGE

#### LIMITING CONDITION FOR OPERATION

---

3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of:  
Less than or equal to  $L_a$ , 0.15% by weight of the containment air per 24 hours at  $P_a$ , 49.6 psig;
- b. A combined leakage rate of less than  $0.60 L_a$  for all penetrations and valves subject to Type B and C tests, when pressurized to  $P_a$ . No individual penetration will be allowed to exceed 5% of the  $P_a$  total allowed ( $0.05 L_a$ ); and
- c. A combined leakage rate of less than or equal to  $0.60 L_a$  for all penetrations that are secondary containment bypass leakage paths when pressurized to  $P_a$ .

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTION:

With (a) the measured overall integrated containment leakage rate exceeding  $0.75 L_a$ , or (b) the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding  $0.60 L_a$ , or (c) the combined bypass leakage rate exceeding  $0.60 L_a$ , restore the overall integrated leakage rate to less than or equal to  $0.75 L_a$ , the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than  $0.60 L_a$ , and the combined bypass leakage rate to less than  $0.60 L_a$  prior to increasing the Reactor Coolant System temperature above 200°F.

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## CONTAINMENT SYSTEMS

### DEPRESSURIZATION AND COOLING SYSTEMS

### SPRAY ADDITIVE SYSTEM

#### LIMITING CONDITION FOR OPERATION

---

3.6.2.2 The Spray Additive System shall be OPERABLE with:

- a. A spray additive tank containing a volume of between 9420 and 9650 gallons of between 19 and 21% by weight NaOH solution, and
- b. Two gravity feed paths each capable of adding NaOH solution from the chemical additive tank to the Refueling Water Storage Tank.

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTION:

With the Spray Additive System inoperable, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the Spray Additive System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

---

4.6.2.2 The Spray Additive System shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position;
- b. At least once per 6 months by:
  - 1) Verifying the contained solution volume in the tank, and
  - 2) Verifying the concentration of the NaOH solution by chemical analysis.
- c. At least once per 18 months, during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure-Hi-3 test signal.

## CONTAINMENT SYSTEMS

### 3/4.6.3 CONTAINMENT ISOLATION VALVES

#### LIMITING CONDITION FOR OPERATION

---

3.6.3 Each containment isolation valve shall be OPERABLE.\*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and:

- a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or
- b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or
- c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or
- d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.6.3.1 Each containment isolation valve shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit by performance of a cycling test and verification of isolation time.

---

\*Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

## CONTAINMENT SYSTEMS

### CONTAINMENT ISOLATION VALVES

#### SURVEILLANCE REQUIREMENTS

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4.6.3.2 Each containment isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a Phase "A" Isolation test signal, each Phase "A" Isolation valve actuates to its isolation position,
- b. Verifying that on a Phase "B" Isolation test signal, each Phase "B" Isolation valve actuates to its isolation position, and
- c. Verifying that on a Containment Purge and Exhaust Isolation test signal, each purge and exhaust valve actuates to its isolation position.

4.6.3.3 The isolation time of each power-operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5.



## CONTAINMENT SYSTEMS

### 3/4.6.4 COMBUSTIBLE GAS CONTROL

#### HYDROGEN MONITORS

#### LIMITING CONDITION FOR OPERATION

---

3.6.4.1 Two independent containment hydrogen monitors shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTION:

- a. With one hydrogen monitor inoperable, restore the inoperable monitor to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.
- b. With both hydrogen monitors inoperable, restore at least one monitor to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours.

#### SURVEILLANCE REQUIREMENTS

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4.6.4.1 Each hydrogen monitor shall be demonstrated OPERABLE by the performance of a CHANNEL CHECK at least once per 12 hours, an ANALOG CHANNEL OPERATIONAL TEST at least once per 31 days, and at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gas containing:

- a. One volume percent hydrogen, balance nitrogen; and
- b. Four volume percent hydrogen, balance nitrogen.

## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

##### 3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the Containment Spray System ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the safety analyses.

The two independent Containment Spray Systems provide post-accident cooling of the containment atmosphere. The Containment Spray Systems also provide a mechanism for removing iodine from the containment atmosphere, and, therefore, the time requirements for restoring an inoperable Spray System to OPERABLE status have been maintained consistent with those assigned other inoperable ESF equipment.

##### 3/4.6.2.2 SPRAY ADDITIVE SYSTEM

The OPERABILITY of the Spray Additive System ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure a pH value of between 8.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained solution volume limit includes an allowance for solution not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the safety analyses.

##### 3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of General Design Criteria 54 through 57 of Appendix A to 10 CFR Part 50.

The opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: (1) stationing an operator, who is in constant communication with control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with: (1) zirconium-water reactions, (2) radiolytic decomposition of water, and (3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971.

The Hydrogen Mixing Systems are provided to ensure adequate mixing of the containment atmosphere following a LOCA. This mixing action will prevent localized accumulations of hydrogen from exceeding the flammable limit.

#### 3/4.6.5 CONTAINMENT ENCLOSURE BUILDING

##### 3/4.6.5.1 CONTAINMENT ENCLOSURE EMERGENCY AIR CLEANUP SYSTEM

The OPERABILITY of the Containment Enclosure Emergency Air Cleanup System ensures that during LOCA conditions containment vessel leakage into the annulus, and radioactive materials leaking from engineered safety features equipment, from the electrical penetration areas, and from the mechanical penetration tunnel, will be filtered through the HEPA filters and charcoal adsorber trains prior to discharge to the atmosphere.

##### 3/4.6.5.2 CONTAINMENT ENCLOSURE BUILDING INTEGRITY

CONTAINMENT ENCLOSURE BUILDING INTEGRITY ensures that the release of radioactive materials from the primary containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with operation of the Containment Enclosure Emergency Air Cleanup System, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

##### 3/4.6.5.3 CONTAINMENT ENCLOSURE BUILDING STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment enclosure building will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to provide: (1) protection for the steel vessel from external missiles, (2) radiation shielding in the event of a LOCA, and (3) an annulus surrounding the primary containment that can be maintained at a negative pressure during accident conditions. A visual inspection is sufficient to demonstrate this capability.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO.14 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 June 11, 1992, the Public Service Company of New Hampshire (former licensee) submitted a request for changes to the Seabrook Station, Technical Specifications (TS). Public Service Company of New Hampshire has transferred management authority for Seabrook Station to North Atlantic Energy Service Corporation (current licensee). This amendment would change the Seabrook Station Technical Specifications (TS) to implement the guidance of NRC Generic Letter (GL) 91-08, "Removal of Component Lists from Technical Specifications."

The guidance of GL 91-08 is implemented by removing the listing of Secondary Containment Bypass Leakage Paths (Table 3.6-1) from TS. The listing of leak paths will instead be included in the licensee's Technical Requirements Manual and the Final Safety Analysis Report. Additionally, TS 3.6.3 is revised to permit locked or sealed closed containment isolation valves to be opened on an intermittent basis under administrative control.

2.0 EVALUATION

The licensee has proposed the removal of Table 3.6-1, "Secondary Containment Bypass Leakage Paths," that is referenced in TS 3.6.1.2. With the removal of this table, the licensee has proposed to modify the limiting condition for operation (LCO) on containment leakage rates to state the limit specified by TS 3.6.1.2.c as the following:

A combined leakage rate of less than or equal to 0.60 L<sub>a</sub> for all penetrations that are secondary containment bypass leakage paths when pressurized to Pa.

The removal of Table 3.6-1 and the modification of TS 3.6.1.2.c is consistent with the guidance provided in GL 91-08.

The table of containment isolation valves in the standard technical specifications identifies a footnote for use with manually-operated locked or sealed closed valves stating that these valves may be opened on an intermittent basis under administrative control. The Seabrook TS were originally issued without a table of containment isolation valves and, therefore, the operability requirements are stated in general terms that apply to all containment isolation valves including those that are locked or sealed closed. Valves are

locked or sealed closed where such is necessary to be consistent with the regulatory requirements for manually-operated valves that are used as containment isolation valves. Because opening these valves would be contrary to the operability requirements of these valves, the following footnote to the LCO has been proposed:

Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

With the addition of the footnote permitting locked or sealed closed valves to be opened under administrative controls, the licensee has proposed to modify the surveillance requirements of part a of TS 4.6.1.1 on demonstrating primary containment integrity to exclude those valves from being verified closed if they are open under the administrative controls permitted by TS 3.6.3. These changes are consistent with the guidance of GL 91-08.

The licensee has proposed to modify TS 3.6.3 such that it will state that each containment isolation valve shall be operable without the further clarification that operable means "with isolation times less than or equal to required isolation times." TS 4.6.3.3 includes the surveillance requirement that the isolation time of each power-operated or automatic valve be determined to be within its limit when tested pursuant to TS 4.0.5. Hence, the clarification of the isolation times as a part of operability of the containment isolation valves is unnecessary and implicit by the definition of the term "operable" used to state the limiting condition for operation. The surveillance requirements of TS 4.6.3.1 through 4.6.3.3 have been revised to state "Each containment isolation shall..." or "...each power-operated or automatic containment isolation valve shall..." rather than stating the requirements simply in terms of "valves" or "isolation valves." The proposed clarification of TS 3.6.3 and 4.6.3.1 through 4.6.3.3 is acceptable.

The licensee has proposed changes to the TS that are consistent with the guidance provided in Generic Letter 91-08. In addition, the licensee has provided an updated copy of Bases Section of TS 3.6.4 that addresses appropriate considerations for opening locked or sealed closed valves on an intermittent basis. The licensee has confirmed that the list of secondary containment bypass leakage paths that is being removed from the TS will be placed in the plant Technical Requirements Manual that is subject to the change control procedures of the Administrative Controls section of the TS. The licensee stated that this list will also be included in the next revision of the updated safety analysis report.

On the basis of its review of this matter, the staff finds that the proposed changes to the TS for Seabrook Station Unit 1 are primarily administrative changes that do not alter the requirements set forth in the existing TS. The exception is the change permitting administrative control to open, on an

intermittent basis, locked and sealed closed valves that is consistent with the staff's guidance in GL 91-08. Overall, the change to remove Table 6.3-1 will allow the licensee to make corrections and updates to the list of secondary containment bypass leakage paths under the provisions that control changes to plant procedures as specified in the Administrative Controls Section of the TS. The staff finds that the proposed TS changes are acceptable.

### 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 (57 FR 30259). 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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