

March 12, 1999

Mr. Ted C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer
North Atlantic Energy Service Corporation
c/o Mr. Terry L. Harpster
P.O. Box 300
Seabrook, NH 03874

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. MA1950)

Dear Mr. Feigenbaum:

The Commission has issued the enclosed Amendment No. 60 to Facility Operating License No. NPF-86 for the Seabrook Station, Unit No 1, in response to your application dated May 20, 1998, as supplemented by information contained in your letter dated January 28, 1999.

The amendment would revise Technical Specifications Table 3.3-4 to depict a change to the refueling water storage tank low-low level setpoint.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA

John T. Harrison, Project Manager
Project Directorate I-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosures: 1. Amendment No. 60 to NPF-86
2. Safety Evaluation

cc w/encls: See next page

March 12, 1999

Mr. Ted C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer
North Atlantic Energy Service Corporation
c/o Mr. Terry L. Harpster
P.O. Box 300
Seabrook, NH 03874

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. MA1950)

Dear Mr. Feigenbaum:

The Commission has issued the enclosed Amendment No. 60 to Facility Operating License No. NPF-86 for the Seabrook Station, Unit No 1, in response to your application dated May 20, 1998, as supplemented by information contained in your letter dated January 28, 1999.

The amendment would revise Technical Specifications Table 3.3-4 to depict a change to the refueling water storage tank low-low level setpoint.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,
/RA
John T. Harrison, Project Manager
Project Directorate I-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosures: 1. Amendment No. 60 to NPF-86
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:	EAdensam	GHill(2)
Docket File	JHarrison	WBeckner
PUBLIC	TClark	CNorsworthy (E-mail SE RCN)
PDI-2 Rdg.	OGC	ABlough, RGN-I
JZwolinski	ACRS	

FILENAME: G:\HARRISON\MA1950.AMD

OFFICE	PM:PDI-2	LA:PDI-2	BC:HICB	BC:SRXB
NAME	JHarrison	TLClark	JMauck	JWermiel
DATE	03/12/99	03/12/99	02/12/99	02/17/99
OFFICE	BC:SCSB	OGC (SRP 6.3)	D:PDI-2	
NAME	NA	MYoung	EAdensam	
DATE		02/26/99	03/12/99	

OFFICIAL RECORD COPY

T. Feigenbaum
North Atlantic Energy Service Corporation
cc:

Lillian M. Cuoco, Esq.
Senior Nuclear Counsel
Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270

Mr. Peter Brann
Assistant Attorney General
State House, Station #6
Augusta, ME 04333

Resident Inspector
U.S. Nuclear Regulatory Commission
Seabrook Nuclear Power Station
P.O. Box 1149
Seabrook, NH 03874

Jane Spector
Federal Energy Regulatory Commission
825 North Capital Street, N.E.
Room 8105
Washington, DC 20426

Town of Exeter
10 Front Street
Exeter, NH 03823

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Office of the Attorney General
One Ashburton Place
20th Floor
Boston, MA 02108

Board of Selectmen
Town of Amesbury
Town Hall
Amesbury, MA 01913

Mr. Dan McElhinney
Federal Emergency Management Agency
Region I
J.W. McCormack P.O. &
Courthouse Building, Room 401
Boston, MA 02109

Mr. Peter LaPorte, Director
ATTN: James Muckerheide

Seabrook Station, Unit No. 1

Massachusetts Emergency Management
Agency
400 Worcester Road
P.O. Box 1496
Framingham, MA 01701-0317

Philip T. McLaughlin, Attorney General
Steven M. Houran, Deputy Attorney
General
33 Capitol Street
Concord, NH 03301

Mr. Woodbury Fogg, Director
New Hampshire Office of Emergency
Management
State Office Park South
107 Pleasant Street
Concord, NH 03301

Mr. Roy E. Hickok
Nuclear Training Manager
Seabrook Station
North Atlantic Energy Service Corp.
P.O. Box 300
Seabrook, NH 03874

Mr. James M. Peschel
Manager of Regulatory Compliance
Seabrook Station
North Atlantic Energy Service Corp.
P.O. Box 300
Seabrook, NH 03874

Mr. W. A. DiProfio
Station Director
Seabrook Station
North Atlantic Energy Service Corporation
P.O. Box 300
Seabrook, NH 03874

Mr. Frank W. Getman, Jr.
20 International Drive
Suite 301
Portsmouth, NH 03801-6809

Mr. B. D. Kenyon
President - Nuclear Group
Northeast Utilities Service Group
P.O. Box 128
Waterford, CT 06385

Mr. David E. Carriere
Director, Production Services
Canal Electric Company
2421 Cranberry Highway
Wareham, MA 02571

NORTH ATLANTIC ENERGY SERVICE CORPORATION, ET AL.*

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 60
License No. NPF-86

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by the North Atlantic Energy Service Corporation, et al. (the licensee), dated May 20, 1998, as supplemented by letter dated January 28, 1999, 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 Corporation (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 & 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 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. 60, 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, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA

Elinor G. Adensam, Director
Project Directorate I-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 12, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 60

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

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

Remove

3/4 3-27
3/4 3-28*

3/4 3-29
3/4 3-30*

B 3/4 3-1*
B 3/4 3-2

-

Insert

3/4/3-27
3/4/3-28*

3/4/3-29
3/4/3-30*

B 3/4 3-1*
B 3/4 3-2

B 3/4 3-2A

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 60 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 May 20, 1998, as supplemented by a letter containing clarifying information dated January 28, 1999, the North Atlantic Energy Service Corporation (NAESCO) submitted a request for changes to the Seabrook Station, Technical Specifications (TS). The requested changes would revise the low-low level setpoint of the Refueling Water Storage Tank (RWST) that initiates automatic switchover of the source of borated water for the Emergency Core Cooling System (ECCS) from the RWST to the containment sumps. The January 28, 1999, letter did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

2.1 Background

The RWST is the initial source of borated water for the ECCS pumps following certain accidents. When the water level in the RWST decreases to the low-low setpoint during accident mitigation, the source of borated water for the ECCS pumps is switched to the containment sumps. The RWST low-low level setpoint automatically initiates the transfer and provides an alarm to alert the operators to manually complete the transfer. If the transfer is not completed in sufficient time, an RWST EMPTY alarm alerts the operators to secure the ECCS pumps taking suction from the RWST prior to potential vortexing conditions that could result in ECCS pump damage and subsequent loss of core cooling capability.

Therefore, the design basis for the RWST low-low level setpoint is to ensure that: (1) The transfer does not occur before there is sufficient water in the containment sump to provide the required net positive suction head (NPSH) to support ECCS pump operation, (2) the transfer does not occur before sufficient borated water is injected from the RWST to ensure the reactor remains shut down in the recirculation mode, and (3) the initiation of the transfer occurs while there is still sufficient time for the operators to complete the manual actions necessary to complete the transfer prior to reaching the level in the RWST where vortexing could occur. Consequently, the transfer must occur during the time period after certain events, but also prior to certain other events, thereby requiring the RWST low-low level setpoint to actuate within a given range bounded by upper and lower Allowable Values.

2.2 Setpoint Determination

Currently, Seabrook's RWST low-low level setpoint has an Allowable Value associated only with the lower limit. On May 20, 1998, NAESCO submitted License Amendment Request 97-07 that proposed a change to the RWST low-low setpoint and added an upper Allowable Value limit. This request would require a change to the Seabrook Station TS, Engineered Safety Features Actuation System Instrumentation Trip Setpoints, Table 3.3-4, Functional Unit 8.b, RWST Level--Low-Low, and associated Bases Section 3/4.3.2.

Currently, TS Table 3.3-4, Functional Unit 8.b, specifies the RWST low-low level setpoint as 122,525 gallons with an Allowable Value of $\geq 121,609$ gallons. The proposed new setpoint would be 120,478 gallons with an Allowable Value band of $\geq 119,435$ to $\leq 121,521$ gallons.

The upper Allowable Value is set at the minimum volume of borated water in the RWST that must be injected into the reactor coolant system (RCS) during the injection phase to satisfy design basis requirements prior to initiation of automatic switchover to the containment building recirculation sumps. The upper Allowable Value is based on the TS limit alarm setpoint, minus instrument uncertainty and minimum injection allowance volume. The lower Allowable Value is set at the minimum volume of water in the RWST at which initiation of automatic switchover must occur in order to afford sufficient time for the manual portion of switchover to the recirculation phase prior to reaching the level in the RWST where vortexing could occur. The lower Allowable Value is based on the vortexing level plus an allocated transfer allowance volume to account for the manual transfer to the recirculation mode, plus an allocated ECCS pump shutoff allowance volume to account for securing the ECCS pumps after receipt of the RWST EMPTY alarm, and the instrument uncertainty band for the RWST EMPTY bistable. The lower Allowable Value includes the instrument uncertainty band for the RWST EMPTY bistable since the design basis for the lower limit is to provide adequate time to complete the switchover to the recirculation mode prior to receipt of the RWST EMPTY alarm. The proposed RWST low-low level setpoint accounts for instrument uncertainty and was selected as the mid-point between the upper and lower Allowable Values.

In addition, the new setpoint, along with the associated Total Allowance and Sensor Error were also revised to include a more conservative drift value that would account for drift periods up to 24 months. According to the licensee, Westinghouse specifications for the current RWST level transmitters associated with the RWST low-low level setpoint specify a value of 1% as the limit for drift over a 12-month interval. The 1% value, originally for a 12-month interval, is currently applied to the instrument uncertainty calculation. The new value includes a drift value based on a 24-month drift period. The Westinghouse drift analysis for these transmitters indicates a bias of 0.2% with a random uncertainty of $\pm 1.2\%$. Therefore, the 2% drift value used is conservative as compared with the Westinghouse analysis.

Section 7.1.2.1.i. of the Seabrook Updated Final Safety Analysis Report (UFSAR) states that the methodology used to determine the bistable setpoints complies with the methodology outlined in Regulatory Guide 1.105 (Rev. 1), as supplemented by the information presented in ISA Standard S67.04, Draft F. Based on the information provided, the method used to select the new RWST low-low level bistable setpoint is acceptable.

2.3 Increased Injection Volume

The proposed new RWST low-low level setpoint increases the potential total volume of water injected from the RWST into the reactor coolant system (RCS) and/or containment by approximately 2000 gallons. The licensee determined that the containment flood level assumptions following a LOCA will not be adversely affected by the revised setpoint and that the effect on sump pH and containment spray pH for accident conditions were evaluated with the conclusion that the change in pH is negligible. Therefore, there is no impact on Containment Building Spray (CBS) System performance or the parameters used for Environmental Qualification of electrical equipment. The increased injection volume that could occur as a result of the proposed change is, therefore, acceptable.

2.4 NPSH Changes

NAESCO's 90-day response to Generic Letter (GL) 97-04 dated January 5, 1998, states that the most limiting pump alignment regarding available NPSH for the Safety Injection (SI) and Charging (CS) pumps occurs prior to switchover to ECCS recirculation operation when the pumps are taking suction from the RWST. The proposed change lowers the RWST low-low level setpoint by 1.5 inches which corresponds to an equivalent reduction of NPSH available to the ECCS pumps prior to switchover. However, though this may be the most limiting case, the available NPSH for both the SI and CS pumps is significantly greater than the required NPSH. Per the 90-day response to the Generic Letter, the available NPSH for the SI pumps is 40.5 feet and the required NPSH is only 16 feet. The available NPSH for the CS pumps is 40 feet and the required NPSH is only 28 feet. Therefore, a reduction of 1.5 inches is insignificant. In addition, the supplemental information provided by NAESCO on January 28, 1999, states that a review of the hydraulic calculations confirms that sufficient NPSH continues to remain available for the most limiting pump alignments during the ECCS operational phases and that the assurance of sufficient NPSH for the ECCS pumps provided in NAESCO's 90-day response to GL 97-04 dated January 5, 1998, is still valid. The change to the RWST low-low level setpoint with regard to the available NPSH prior to switchover is, therefore, acceptable.

The most limiting pump alignment regarding available NPSH for the CBS and Residual Heat Removal (RHR) pumps was identified by NAESCO as occurring during ECCS recirculation. However, since the proposed change would lower the RWST low-low level setpoint, a greater inventory would potentially be delivered to the containment sumps which would increase the NPSH available to the CBS and RHR pumps during the recirculation phase. The change to the RWST low-low level setpoint with regard to the available NPSH during recirculation is, therefore, acceptable.

2.5 Operator Action Response Times

The amount of time available to the operator to complete the manual portion of the ECCS transfer from the RWST to the containment sumps is based on the volume of water in the RWST designated as the "Transfer Allowance" along with the flow rate. The amount of time available to the operator to secure the ECCS pumps upon receipt of the RWST EMPTY alarm is based on the volume of water in the RWST designated as the "Shutoff (Single Failure) Allowance" along with the worst case flow rate. During the derivation of the new RWST low-low

level setpoint, the volume of water attributed to the Transfer Allowance and the Shutoff (Single Failure) Allowance were not changed. Since the design basis flow rates from the RWST were also not changed, the operator action response times would not be affected by the proposed RWST low-low level setpoint change and, therefore, are acceptable.

2.6 Summary

Based on the above evaluation, the proposed changes to the RWST low-low level setpoint are acceptable. Appropriate changes have been made to TS Table 3.3-4 to depict the new setpoint and its associated parameters. TS Table 3.3-4 Table Notations were also revised to add notations to account for the new range of acceptable values. In addition, appropriate changes were made to the Bases to explain the necessity of adding an upper Allowable Value.

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 (63 FR 43205). 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.

Principal Contributor: John Harrison

Date: March 12, 1999

PDI-2 DOCUMENT COVER PAGE

DOCUMENT NAME: G:\HARRISONMA1950.AMD
ORIGINATOR: J. HARRISON
SECRETARY: R. BOULING
SUBJECT: SEABROOK RWST LOW-LOW LEVEL SETPOINT
CHANGE AMENDMENT (TAC NO. MA1950)

*****ROUTING LIST*****

<u>NAME</u>	<u>DATE</u>
1. <u>J. HARRISON</u>	<u>/ /99</u>
2. <u>T. CLARK</u>	<u>/ /99</u>
3. <u>J. MAUCK</u>	<u>/ /99</u>
4. <u>K. MANOLY</u>	<u>/ /99</u>
5. <u>C. BERLINGER</u>	<u>/ /99</u>
6. <u>OGC (SRP 6.3)</u>	<u>/ /99</u>
7. <u>E. ADENSAM</u>	<u>/ /99</u>

Secretary - Dispatch - O14-D-2