

October 6, 2000

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

SUBJECT: SEABROOK STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE:
OPERATION WITH RELAXED AXIAL OFFSET CONTROL (TAC NO. MA8764)

Dear Mr. Feigenbaum:

The Commission has issued the enclosed Amendment No. 76 to Facility Operating License No. NPF-86 for the Seabrook Station, Unit No 1, in response to your application dated April 28, 2000.

The amendment implements the Relaxed Axial Offset Control (RAOC) operating strategy in support of the use of upgraded Westinghouse fuel with Intermediate Flow Mixers.

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/

Robert M. Pulsifer, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosures: 1. Amendment No. 76 to NPF-86
2. Safety Evaluation

cc w/encls: See next page

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NORTH ATLANTIC ENERGY SERVICE CORPORATION, ET AL.*

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 76
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 April 28, 2000, 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, Little Bay Power Corporation, 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. 76 , 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 at commencement of Cycle 8 operations (scheduled for November 2000).

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: October 6, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 76

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

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

<u>Remove</u>	<u>Insert</u>
2-2	2-2
2-7	2-7
2-8	2-8
2-9	2-9
2-10	2-10
B 2-1	B 2-1
B 2-4	B 2-4
3/4 2-1	3/4 2-1
3/4 2-2	3/4 2-2
3/4 2-4	3/4 2-4
3/4 2-6	3/4 2-6
-----	3/4 2-6a
-----	3/4 2-6b
3/4 2-8	3/4 2-8
B3/4 2-3	B3/4 2-3
6-18A	6-18A
6-18B	6-18B
6-18C	6-18C
-----	6-18D
-----	6-18E

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 76 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 April 28, 2000, the North Atlantic Energy Service Corporation (North Atlantic/the licensee) submitted a request for changes to the Seabrook Station Technical Specifications (TSs). The requested changes would implement the Relaxed Axial Offset Control (RAOC) operating strategy in support of the use of upgraded Westinghouse fuel with Intermediate Flow Mixers.

2.0 BACKGROUND

By letter dated April 28, 2000, North Atlantic proposed changes to the Seabrook Station TSs to implement Relaxed Axial Offset Control (RAOC) operation. The proposed changes are in support of North Atlantic's long-term operating strategy to refuel with upgraded Westinghouse fuel with Intermediate Flow Mixers (VANTAGE+ (w/IFMs)), and operate within the limits of the RAOC TSs developed by Westinghouse, commencing with Cycle 8.

The use of the upgraded Westinghouse fuel with Intermediate Flow Mixers (VANTAGE+ (w/IFMs)) has previously been approved by the Nuclear Regulatory Commission (NRC). The licensee states that the Westinghouse RAOC TS for the generic application to Westinghouse pressurized water reactors (PWRs), which has been approved by the NRC, would include Seabrook Station. Westinghouse and Duke Engineering & Services (DE&S) jointly performed safety evaluations/analyses, using current NRC-approved methodologies, to confirm acceptable use of the upgraded Westinghouse fuel with RAOC operation of Cycle 8 and subsequent transition cycles within reactor core safety limits.

3.0 EVALUATION

The following specific TS changes have been proposed for the Seabrook Station:

3.1 Revision to TS Fig. 2.1-1

The proposed reactor core safety thermal limits apply to the operation of the Seabrook Station during its transition, commencing with Cycle 8, from the current VANTAGE+(w/oIFMs) to

VANTAGE+(w/IFMs) fuel assemblies. The analyses which form the basis for the changes in the proposed reactor core safety limits reflect updated and approved methodologies incorporating thermal-hydraulic analysis, the WRB-2 DNB correlation, and the application of the transition core penalty in the context of the Revised Thermal Design Procedure (RTDP). The staff reviewed the application of the methodologies and determined that it is applicable to Seabrook, therefore, the new Figure 2.2-1 is acceptable.

3.2 Revisions to TS Table 2.2-1

The proposed notations to Table 2.2-1, clarify that specific temperature and pressure measurements are associated with the Reactor Coolant System (RCS), and the inclusion of cycle-specific time constants in the Core Operating Limits Report (COLR) clarify the meaning of the variables in the table and are consistent with the NRC-approved generic methodology for expanding the COLR. The proposed changes both clarify Table 2.2-1, as well as provide consistency with the COLR. Therefore, the changes are acceptable.

3.3 Revision to TS 3.2.1 LCO a and b and ACTION b and c

The F_Q methodology associated with the approved RAOC strategy does not provide for different Axial Flux Difference (AFD) limits dependent on FIDS Alarm operability and, thus, LCOs and ACTIONS associated with FIDS Alarm are irrelevant and the proposed deletion of LCOs and ACTIONS associated with FIDS Alarm are appropriate and acceptable.

3.4 Revision to TS 3.2.1 ACTION a.2

Analyses using NRC-approved methodologies demonstrate that in the context of RAOC operation the reduction of the power range neutron flux high setpoint is not required to provide an adequate level of protection. For example, under the RAOC methodology there are no axial flux difference limits below 50 percent; and, therefore, reducing the power level to less than 50 percent rated thermal power maintains the plant within limits. The proposed change is also consistent with NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." The deletion of the reduction of the Power Range Neutron Flux - High Setpoints is, therefore, acceptable.

3.5 Revision to TS 4.2.1.2

TS 4.2.1.2 is being deleted because it is superseded by the SRs for Power Distribution Limits for the Axial Flux Difference (AFD) (Relaxed Axial Offset Control (RAOC) Methodology) which is consistent with the associated F_Q methodology. Because this surveillance is no longer applicable, the deletion of TS 4.2.1.2 is acceptable.

3.6 Revision to TS 3.2.2 ACTION a.2 and TS 3.2.3 ACTION b.

The RAOC is a calculational procedure that defines the allowed operational space of the AFD vs. thermal power. The RAOC strategy has been approved by NRC in WCAP-10216-P-A. The

proposed TS changes are consistent with those approved for use with RAOC and F_Q surveillance. The change to this TS is also consistent with Standard Technical Specifications - Westinghouse Plants, NUREG-1431, Rev. 1. Based on the above, the proposed change is, therefore, acceptable.

3.7 Revision to TS 4.2.2.4

This SR is being deleted because the RAOC strategy being implemented does not rely on FIDS to establish operational limits for AFD. Because this SR is no longer applicable, the deletion of this SR is acceptable.

3.8 Revision of SRs 4.2.2.2 and 4.2.2.3

The change to the TS incorporates the RAOC strategy and the methodology for demonstrating that the hot channel factor $F_Q(Z)$ is within its limits. This is consistent with the NRC-approved Westinghouse developed RAOC strategy, is applicable to Seabrook, and therefore, is acceptable.

3.9 Revision to TS 3.2.3

COLA is being changed to COLR to correct the acronym for Core Operating Limits Report and the words "or equal to" are being added to the sentence of the TS 3.2.3 LCO to provide consistency with the safety analyses. The sentence now reads; " $F_{\Delta H}^N$ shall be less than or equal to the limits specified in the COLR." These are editorial changes and clarify the consistency of the statement with the safety analyses and are acceptable.

3.10 Revision to Specification 6.8.1.6

NRC-approved analysis methodologies employed by Westinghouse for determining the cycle-specific core operating limits specified in the COLR are being added to TS 6.8.1.6.b. The approved analysis methodologies are used for determining the cycle-specific core operating limits specified in the COLR. These methodologies are used in the implementation of the RAOC strategy. Therefore, it is acceptable to add them to TS 6.8.1.6.b. Several punctuation and editorial changes were also made in this specification to provide consistency and this is acceptable.

3.11 Revision to page 3/4 2-6

The title of page 3/4 2-6 had been mislabeled with Limiting Condition for Operation. This page includes TSs 4.2.2.1 and 4.2.2.2 which are SRs. To make this page consistent with the rest of the TSs "Limiting Condition for Operation" is being replaced with "Surveillance Requirements." This is an editorial change and is acceptable.

3.12 Revision to TS Bases B 2.1.1

The text is revised to take into account the NRC-approved Westinghouse RTDP analysis methodology which assumes a cycle-specific value for the enthalpy rise hot channel factor and the staff has no objection to this change.

3.13 Revision to TS Bases B 2.2.1

The licensee has proposed to revise Bases Section 2.21 by deleting the DNBR value of 1.30 and adding a TS reference. The licensee will be changing this Bases section in the future. Therefore, Bases page B 2-4 will not be revised with this amendment and the staff has no objection.

3.14 Revision to TS Bases B 3/4.2.2 and B 3/4.2.3

The changes to TS B 3/4.2.2 and B 3/4.2.3 were made to reflect the replacement of the FIDS bases discussion with the F_Q discussion used with the approved Westinghouse RAOC TS. The staff has no objection to this change which incorporates a bases discussion for using the RAOC strategy and eliminates the replaced FIDS discussion.

4.0 CONCLUSION

The staff has reviewed the proposed changes to the Seabrook Station TSs to implement Relaxed Axial Offset Control operation. The implementation of RAOC is in conjunction with the use of upgraded Westinghouse fuel beginning with Cycle 8 and subsequent transition cores.

The proposed changes in the TSs are supported by safety evaluations/analyses using methodologies approved by the NRC for application to Westinghouse PWRs, including Seabrook Station. North Atlantic has also met the conditions for use of this methodology by incorporating the approved version of the methodology in the Administrative Reporting section of the TS and the appropriate F_Q surveillance requirement reflects inclusion of the appropriate parameter in the COLR. Based on this, the staff has determined that the proposed changes to the Seabrook Station TSs are acceptable.

5.0 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.

6.0 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 and changes surveillance requirements. 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 (65 FR 34747). 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.

7.0 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: Y. Orechwa

Date: October 6, 2000