

May 7, 1997

Mr. Ted C. Feigenbaum  
Executive Vice President and Chief Nuclear Officer  
Northeast Utilities Service Company  
c/o Mr. Terry L. Harpster  
P.O. Box 128  
Waterford, CT 06385

SUBJECT: INSPECTION NO. 50-443/97-80 - REPLY

Dear Mr. Feigenbaum:

This letter refers to your April 30, 1997, correspondence, in response to our March 31, 1997, letter.

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your licensed program.

Your cooperation with us is appreciated.

Sincerely,

*Original Signed  
By:*

Glenn W. Meyer, Chief  
Operator Licensing and Human  
Performance Branch  
Division of Reactor Safety

Docket No. 50-443

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cc:

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S. Comley, Executive Director, We the People of the United States

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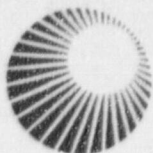
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**North  
Atlantic**

North Atlantic Energy Service Corporation  
P.O. Box 300  
Seabrook, NH 03874  
(603) 474-9521

The Northeast Utilities System

April 30, 1997

Docket No. 50-443  
NYN-97045

United States Nuclear Regulatory Commission  
Attention: Document Control Desk  
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Seabrook Station  
Reply to a Notice of Violation

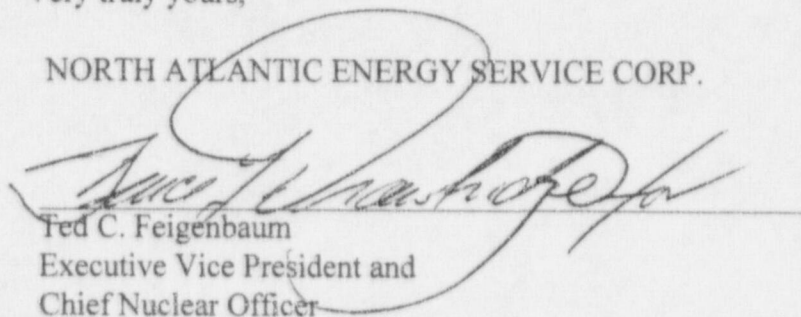
In a letter dated March 31, 1997<sup>1</sup> the NRC described two violations and one unresolved item regarding implementation of the Maintenance Rule at Seabrook Station. The enclosure to this letter provides North Atlantic Energy Service Corporation's (North Atlantic) response to these violations. The enclosure also provides additional information regarding the unresolved item.

North Atlantic is making certain commitments in response to the violations and the unresolved item. The commitments are fully described in the enclosure to this letter.

Should you have any questions concerning this response, please contact Mr. Terry L. Harpster, Director of Licensing Services, at (603) 773-7765.

Very truly yours,

NORTH ATLANTIC ENERGY SERVICE CORP.



Ted C. Feigenbaum  
Executive Vice President and  
Chief Nuclear Officer

cc: Hubert J. Miller, Region I Administrator  
Mr. Albert W. De Agazio, Sr. Project Manager  
Mr. John B. Macdonald, NRC Senior Resident Inspector

<sup>1</sup> NRC Inspection Report 97-80, dated March 31, 1997, J.T. Wiggins to T.C. Feigenbaum

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## REPLY TO A NOTICE OF VIOLATION

NRC Inspection Report 97-80 describes two violations and one unresolved item regarding the Seabrook Station maintenance rule program. The first violation describes three examples where system functions were not included in the scope of the maintenance rule program. The second violation involves the failure to establish adequate performance criteria commensurate with safety for a number of system functions. North Atlantic's response to these violations and the unresolved item is described below.

### **I. Description of Violations**

The following are restatements of the respective violations:

A. VIO 97-80-01 - Failure to Include Nonsafety-Related SSC Functions in the 10 CFR 50.65 Monitoring Program

10 CFR 50.65(b)(2) requires that the scope of the monitoring program specified in paragraph (a)(1) include nonsafety-related structures, systems, and components (SSCs): (i) that are relied upon to mitigate accidents or transients or are used in plant emergency operating procedures (EOPs); (ii) whose failure could prevent safety-related SSCs from fulfilling their safety-related function; or (iii) whose failure could cause a reactor scram....

10 CFR 50.65(a)(1) states that licensees shall monitor the performance or condition of SSCs against licensee established goals, in a manner sufficient to provide reasonable assurance that such SSCs, as defined in paragraph (b), are capable of fulfilling their intended functions.

Contrary to the above, on January 31, 1997, the following nonsafety-related SSC functions were not included in the 10 CFR 50.65 monitoring program:

1. Rod control function CP-04, to "maintain Tavg within limits and minimizes reactor power transients, based on inputs from various systems" is a function whose failure would cause a reactor scram.
2. Containment air handling function CAH-02, to "maintain the normal ambient air temperature in the containment structure within design limits," is a function whose failure could prevent safety-related SSCs from fulfilling their safety-related function.
3. Sample system function SS-03, to "provide grab samples of steam generator blowdown for each steam generator" is a function used in the plant emergency operating procedures (EOPs).

This is a Severity Level IV violation.

B. VIO 97-80-05 - Failure to Establish Adequate Performance Criteria

10 CFR 50.65(a)(1) states, in part, that each holder of an operating license...shall monitor the performance or condition of SSCs against licensee-established goals...and that such goals shall be established commensurate with safety.

10 CFR 50.65(a)(2) states, in part, that monitoring under (a)(1) is not required where it has been demonstrated that the performance or condition of a SSC is being effectively controlled through the performance of appropriate preventive maintenance such that the SSC remains capable of performing its intended safety function. Paragraph (c) states that "[t]he requirements of this section shall be implemented by each licensee no later than July 10, 1996."

Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 1, endorses NUMARC 93-01, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 0, as an acceptable method for implementing the requirements of 10 CFR 50.65. Regulatory Guide 1.160 states that the methods described in the guide will be used in the evaluation of the effectiveness of maintenance activities of licensees who are required to comply with 10 CFR 50.65 unless a licensee has proposed an acceptable alternative method of compliance.

NUMARC 93-01, Section 9.3.2, states, in part, that performance criteria for evaluating SSCs are necessary to identify the standard against which performance is to be measured. Criteria are established to provide a basis for determining satisfactory performance...(for SSCs monitored under (a)(2)). Additionally, Section 9.3.2 states that performance criteria for risk significant SSCs should be established to assure that reliability and availability assumptions used in the plant specific probabilistic risk assessment, individual plant examination, or other risk determining analysis are maintained or adjusted when necessary.

Contrary to 10 CFR 50.65(a)(2), as of January 31, 1997, North Atlantic, in choosing the NUMARC approach, failed to demonstrate that the performance or condition of SSCs was effectively controlled through the performance of appropriate preventive maintenance in that the licensee did not demonstrate that the performance criteria used to monitor reliability would ensure that the SSCs remained capable of performing their intended safety function. Specifically, in accordance with NUMARC 93-01, for those risk significant SSCs within the scope of 10 CFR 50.65, NAESCO established performance criteria to monitor reliability that neither considered, nor were bounded by, the safety significance defined by the plant-specific probabilistic risk assessment, individual plant examination, or other risk determining analysis for those SSCs. The affected SSCs included risk-significant functions for rod control function CP-01; solid state protection functions SSPS-01 and SSPS-02; and anticipated transient without scram (ATWS) mitigation function ATSW-01. NAESCO had not proposed an acceptable alternative to demonstrate compliance with 10 CFR 50.65(a)(2).

This is a Severity Level IV violation.

## II. Reply to Violations

### A. Failure to Include Non-safety Related SSC Functions in the 10 CFR 50.65 Monitoring Program - VIO 97-80-01

#### Reason for Violation

North Atlantic agrees with this violation. The initial maintenance rule scoping process utilized at Seabrook Station involved a detailed analysis of the plant systems and system functions. Plant specific design information and industry operating history were factored into the review. This initial effort, which was completed in mid-1995, focused too heavily on excluding non-safety related system functions from the scope of the program in order to focus resources on more risk important functions. North Atlantic's scoping reviews became more conservative as experience was gained with the maintenance rule program. As a result, more system functions were included in the scope of the program. The NRC pilot inspections that were completed prior to maintenance rule implementation led to scoping methodology changes and resulted in numerous scope additions which were completed in May 1996, prior to the rule's effective date of July 10, 1996. Lessons learned from the initial NRC baseline inspections also resulted in additional scoping revisions. Notwithstanding, North Atlantic was not thorough in applying this industry experience to its scoping methodology. This resulted in some non-conservative exclusions from the program scope as evidenced by the examples described in the violation and the unresolved item.

#### Corrective Actions

1. The system functions identified in the violation (CP-04, CAH-02, and SS-03) and those identified in the unresolved item (FO-01, LO-04, ASH-02, FP-02, FP-03, FP-04, and FP-05), have been included within the scope of the maintenance rule program. Performance criteria have also been established for these functions. A historical review has been performed and the system functions have been classified as (a)(2).
2. North Atlantic has revised its maintenance rule scoping procedure to include additional enhancements regarding lessons learned from industry experience (e.g., restrictions concerning the use of operator actions, equipment redundancy, and the exclusion of SSCs referenced in emergency operating procedures).
3. North Atlantic has re-reviewed those non-safety related system functions that were previously excluded from the scope of the maintenance rule program with respect to the revised scoping procedure described above. Scope additions were made as necessary.

4. North Atlantic will continue to monitor industry experience regarding implementation of the maintenance rule for potential future program enhancements.

B. Failure to Establish Adequate Performance Criteria - VIO 97-80-05

Reason for Violation

North Atlantic agrees with this violation. North Atlantic believed that meaningful performance criteria could not be developed that would provide an adequate correlation between PRA assumptions and actual failure rate data. As a result, North Atlantic typically set the risk significant SSC reliability performance criteria at 1 MPFF per train per 24 month period with zero repeat failures permitted. This would preclude an (a)(1) classification as a result of a single random failure while being sensitive enough to identify those cases where actual SSC failure rate may have changed. North Atlantic recognized that other techniques were available to provide a correlation between PRA assumptions and discrete MPFF monitoring, but had not yet implemented these techniques at the time of the inspection.

Corrective Actions

1. North Atlantic will revise its reliability performance criteria for risk significant SSCs to reflect the assumptions in the PRA. North Atlantic is currently evaluating other methodologies for determining reliability performance criteria. North Atlantic's evaluations will be completed and the reliability performance criteria for risk significant SSCs will be revised, as necessary, by October 1, 1997.

In the interim, North Atlantic has revised its reliability performance criteria for low demand high reliability system functions to zero MPFFs.

2. Violation 97-80-05 specifically identified that the SSC risk-significant functions that were affected by this condition included: rod control function CP-01; solid state protection functions SSPS-01 and SSPS-02; and anticipated transient without scram (ATWS) mitigation function ATWS-01. The following corrective actions have been completed:

- CP-01: The reliability performance criterion has been redefined to be:

Zero MPFFs (< 1 MPFF) allowed where a reactor trip breaker or bypass breaker fails to actuate on demand (test or actual trip) and;

One MPFF (< 2 MPFFs) allowed where a reactor trip breaker actuates without a valid demand (test or actual trip) present.



- SSPS-01 and SSPS-02: the latter function has been conservatively reclassified as risk significant. The two SSPS functions now share a common performance criterion defined as:

One MPFF (< 2 MPFFs) allowed per train.

- ATWS-01: the reliability performance criterion has been redefined to be:

Zero MPFFs (< 1 MPFF) allowed where ATWS fails to actuate on demand, and

One MPFF (< 2 MPFFs) allowed where ATWS actuates without a valid demand.

### **III. Description of Unresolved Item**

The following is a restatement of the unresolved item:

URI 97-80-02 - Provide Additional Information on Seven Functions to Determine Adequacy of Scoping Document

The NRC inspection team could not determine if the following functions were in scope because the available information was incomplete:

1. Auxiliary steam heating function ASH-02, to "provide fire protection tank heating," is a function which directly affects the fire pumps that are used in plant EOPs.
2. Fuel oil function FO-01, to "store and transfer fuel oil for the diesel driven fire pumps," is a function which directly affects the fire pumps.
3. Lube oil function "FO-04" [FO-04 should actually be LO-04], to "supply oil to main feedpumps and turbine driver bearings," is a function whose failure could cause a reactor trip.
4. Fire protection function FP-02, to "supply water for suppression," is a function important for accident mitigation.
5. Fire protection function FP-03, to "initiate suppression, including door and damper closure," is a function important for accident mitigation.
6. Fire protection function FP-04, to "control and extinguish fires," is a function important for accident mitigation.

7. Fire protection function FP-05, to "provide detection and alarm capability," is a function important for accident mitigation.

The team determined that some of the above functions were examples where North Atlantic, as a result of scoping by function, had relied on system redundancy or system monitoring as a basis for not monitoring the support system functions; i.e., monitoring the fire pump water or fuel supply was not necessary if the fire pumps themselves were being monitored. Pending further explanation from North Atlantic, the issue of proper function/system boundary definition per 10 CFR 50.65(b) for the above functions is an unresolved item. If these functions are determined to be in scope of the rule, they would have been considered part of the cited violation, VIO 97-80-01.

#### **Reply to Unresolved Item**

##### Examples 2 and 3

- The reasons for exclusion of FO-01 and LO-04 from the maintenance rule program are the same as described in the response to VIO 97-80-01 above. North Atlantic has revised the scope of the maintenance rule program to include these two functions and performance criteria has been established. A historical review has been performed and the system functions have been classified as (a)(2).

##### Examples 1, 4, 5, 6, and 7

- ASH-02, FP-02, FP-03, FP-04, and FP-05 support accident mitigation related to design basis fires. These system functions are not risk significant and therefore were not included within the scope of the maintenance rule program based on exclusion guidelines set forth in NUMARC 93-01 for 10CFR50 Appendix R systems and comparison with other plants of similar design. However, these system functions are clearly important to safety. As a result, North Atlantic has included them in the maintenance rule program scope. The maintenance rule program will ensure that the performance of these functions is maintained at a high level.

In conclusion, North Atlantic believes that the examples stated in the unresolved item should have been included within the original scope of the maintenance rule program.

#### **IV. Date When Full Compliance Will Be Achieved**

North Atlantic will be in compliance with regulatory requirements when the reliability performance criteria are re-evaluated utilizing the revised methodology on October 1, 1997. North Atlantic believes that the interim actions described above satisfy the goals of the maintenance rule.