North Atlantic

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The Northeast Utilities System

October 11, 2002

Docket No. 50-443

NYN-02095

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Seabrook Station
License Amendment Request 02-03,
"Changes to Technical Specifications Associated with Nuclear Instrumentation"

North Atlantic Energy Service Corporation (North Atlantic) has enclosed herein License Amendment Request (LAR) 02-03. LAR 02-03 is submitted pursuant to the requirements of 10CFR50.90 and 10CFR50.4.

LAR 02-03 proposes changes to the Seabrook Station Technical Specifications (TS) to eliminate the Power Range Neutron Flux High Negative Rate Reactor Trip function from TS 3/4.3.1, "Reactor Trip System Instrumentation," TS 2.2.1, "Reactor Trip System Instrumentation Setpoints," and their associated Bases. Also proposed are changes to Special Test Exceptions TS 3/4.10.3, "Physics Tests," TS 3/4.10.4, "Reactor Coolant Loops," and Reactor Trip System Instrumentation TS Table 4.3-1, that are associated with certain testing activities required during STARTUP operations. TS 3/4.4.1.1, "Reactor Coolant Loops and Coolant Circulation – Startup and Power Operation," is revised as well.

The proposed changes associated with elimination of the Power Range Neutron Flux High Negative Rate Trip function are based on the NRC-approved analysis provided in Westinghouse WCAP-11394-P-A, "Methodology for the Analysis of the Dropped Rod Event." The NRC concluded that it was an acceptable procedure for analyzing the dropped rod event for which no credit is taken for any direct reactor trip or automatic power reduction. Seabrook Station's plant-specific analysis does not take credit for the negative flux rate reactor trip. In addition, since the power range neutron flux high negative rate reactor trip function is not credited in Seabrook Station's safety analysis, the function is not considered a limiting condition for operation (LCO). That is, it does not meet the four criteria of 10 CFR 50.36, and therefore the function does not warrant inclusion in the Technical Specifications as a LCO.

The proposed changes to TS 3/4.10.3 are to clarify that only the reactor trip Low Setpoint associated with the OPERABLE Power Range Neutron Flux instrumentation channels are required to be set at 25% of RATED THERMAL POWER and to reword the time interval for the Analog Channel Operational Test (ACOT) in surveillance requirement (SR) 4.10.3.2 from "within 12 hours" to the referenced time interval specified in TS Table 4.3-1, Functional Unit 2.b. Other changes to TS 3/4.10.3 are editorial in nature to support the above changes.

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In correlation with the proposed change to extend the ACOT interval in SR 4.10.3.2, North Atlantic proposes to change TS Table 4.3-1 Note 1 from "if not performed in previous 31 days" to "if not performed in previous 92 days." This proposed change would extend the ACOT interval for those Functional Units that reference TS Table 4.3-1 Note 1. The Functional Units affected are: Functional Unit 2b (Power Range Neutron Flux Low Setpoint), Functional Unit 5 (Intermediate Range Neutron Flux), Functional Unit 6 (Source Range Neutron Flux). In addition, the interval for performance of the Trip Actuating Device Operational Test (TADOT) associated with Functional Units 16a and 16b (Turbine Trip on Low Fluid Oil Pressure and Turbine Stop Valve, respectively) would extend as well.

The proposed change to TS 3/4.10.4 deletes this Special Test Exception in its entirety since the condition it allows the plant to be placed in (i.e., natural circulation / low flow conditions) was to support the initial startup test program prior to commercial operation. Present and future startup / physics testing (post core reload) do not require natural circulation / low flow conditions to perform these tests. The TS Index page and associated Bases are revised to reflect deletion of TS 3/4.10.4. Additionally, as a result of deleting TS 3/4.10.4, the footnote which references TS 3/4.10.4 in TS 3/4.4.1.1 is deleted as well.

The Station Operation Review Committee and the Nuclear Safety Audit Review Committee have reviewed LAR 02-03.

As discussed in LAR Section IV, the proposed change does not involve a significant hazard consideration pursuant to 10CFR50.92. A copy of this letter and the enclosed LAR has been forwarded to the New Hampshire State Liaison Officer pursuant to 10CFR50.91(b).

North Atlantic has determined that LAR 02-03 meets the criteria of 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement (see Section VI enclosed).

North Atlantic requests NRC Staff review of License Amendment Request 02-03 and issuance of a license amendment by September 30, 2003, becoming effective immediately and implemented within 90 days thereafter.

Should you have any questions regarding this letter, please contact Mr. James M. Peschel, Manager - Regulatory Programs, at (603) 773-7194.

Very truly yours,

NORTH ATLANTIC ENERGY SERVICE CORP.

Ted C. Feigenbaum
Executive Vice President
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North Atlantic

SEABROOK STATION UNIT 1

Facility Operating License NPF-86
Docket No. 50-443

License Amendment Request No. 02-03,
"Changes to Technical Specifications Associated with Nuclear Instrumentation"

North Atlantic Energy Service Corporation pursuant to 10 CFR 50.90 submits License Amendment Request 02-03. The following information is enclosed in support of this License Amendment Request:

- Section I - Introduction and Safety Assessment for Proposed Changes
- Section II - Markup of Proposed Changes
- Section III - Retype of Proposed Changes
- Section IV - Determination of Significant Hazards for Proposed Changes
- Section V - Proposed Schedule for License Amendment Issuance and Effectiveness
- Section VI - Environmental Impact Assessment

I, Ted C. Feigenbaum, Executive Vice President and Chief Nuclear Officer of North Atlantic Energy Service Corporation hereby affirm that the information and statements contained within this License Amendment Request are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

MARILYN R. SULLIVAN
MY COMMISSION EXPIRES APR. 17, 2007
NOTARY PUBLIC
NEW HAMPSHIRE

Sworn and Subscribed
before me this
11 day of October, 2002

Marilyn R. Sullivan
Notary Public

Ted C. Feigenbaum
Executive Vice President
and Chief Nuclear Officer

Section I

Introduction and Safety Assessment for the Proposed Changes

INTRODUCTION AND SAFETY ASSESSMENT OF THE PROPOSED CHANGES

A. Introduction

License Amendment Request (LAR) 02-03 proposes changes to the Seabrook Station Technical Specifications (TS) to eliminate the Power Range Neutron Flux High Negative Rate Reactor Trip function from TS 3/4.3.1, "Reactor Trip System Instrumentation," TS 2.2.1, "Reactor Trip System Instrumentation Setpoints," and their associated Bases. Also proposed are changes to Special Test Exceptions TS 3/4.10.3, "Physics Tests," TS 3/4.10.4, "Reactor Coolant Loops," and Reactor Trip System Instrumentation TS Table 4.3-1, that are associated with certain testing activities required during STARTUP operations. TS 3/4.4.1.1, "Reactor Coolant Loops and Coolant Circulation – Startup and Power Operation," is revised as well.

The proposed changes associated with elimination of the Power Range Neutron Flux High Negative Rate Trip function are based on the analysis provided in Westinghouse WCAP-11394-P-A, "Methodology for the Analysis of the Dropped Rod Event", which determined that, subject to plant-specific analysis, sufficient Departure from Nucleate Boiling (DNB) margin existed for all Westinghouse plant designs and fuel types without need for the negative flux rate trip protection function, regardless of the reactivity worth of the dropped rod (or bank). The NRC has subsequently reviewed and approved the Westinghouse analysis and results, and concluded that it was an acceptable procedure for analyzing the dropped rod event for which no credit is taken for any direct reactor trip or automatic power reduction. Seabrook Station's plant-specific analysis is documented in Seabrook Station's Updated Final Safety Analysis Report (UFSAR) Section 15.4.3, which states that the analysis does not take credit for the negative flux rate reactor trip and concludes: "For cases of dropped RCCAs [Rod Cluster Control Assemblies] (including partially dropped RCCAs) or dropped banks, the DNBR [Departure from Nucleate Boiling Ratio] remains above the limit value and core damage does not occur."

In addition, since the power range neutron flux high negative rate reactor trip function is not credited in Seabrook Station's safety analysis, the function is not considered a limiting condition for operation (LCO). That is, it does not meet the four criteria of 10 CFR 50.36, and therefore the function does not warrant inclusion in the Technical Specifications as a LCO.

The Power Range Neutron Flux High Negative Rate Trip function capability will be removed upon receipt of the License Amendment.

The proposed changes to certain testing activities required during STARTUP are as follows:

Five changes to TS 3/4.10.3 are proposed: one change adds a footnote clarifying that only the reactor trip Low Setpoint associated with the OPERABLE Power Range Neutron Flux instrumentation channels are required to be set at 25% of RATED THERMAL POWER. The second change is editorial in nature to support the proposed footnote, which inserts the word "Range" after Intermediate so as to distinguish between the Intermediate and Power Range channels, thereby allowing the footnote asterisk to be applicable only to the Power Range channels. The third change rewords the time interval for the Analog Channel Operational Test (ACOT) in surveillance requirement (SR) 4.10.3.2 from "within 12 hours" to the referenced time interval specified in TS Table 4.3-1, Functional Unit 2.b. Rewording the time interval will change the performance requirement to be done within 31 days prior to STARTUP instead of the current requirement of "within 12 hours." The fourth change would make this SR a "verification" rather than a "performance" SR. The fifth change inserts the word OPERABLE in

the SR so as to be consistent with LCO 3.10.3b requirements which is limited to the OPERABLE channels only.

In correlation with the proposed change to extend the ACOT interval in SR 4.10.3.2, North Atlantic proposes to change TS Table 4.3-1 Note 1 from "if not performed in previous 31 days" to "if not performed in previous 92 days." This would in effect change the SR 4.10.3.2 ACOT from "within 12 hours" to "within 92 days." In addition, this proposed change would also extend the ACOT interval for Functional Unit 2b (Power Range Neutron Flux Low Setpoint), Functional Unit 5 (Intermediate Range Neutron Flux), Functional Unit 6 (Source Range Neutron Flux), and extend the interval for performance of the Trip Actuating Device Operational Test (TADOT) associated with Functional Units 16a and 16b (Turbine Trip on Low Fluid Oil Pressure and Turbine Stop Valve, respectively).

The proposed change to TS 3/4.10.4 deletes this Special Test Exception in its entirety since the condition it allows the plant to be placed in (i.e., natural circulation / low flow condition) was to support the initial startup test program prior to commercial operation. Present and future startup / physics testing (post core reload) do not require natural circulation conditions / low flow to perform these tests. . The TS Index page and associated Bases are revised to reflect deletion of TS 3/4.10.4. Additionally, as a result of deleting TS 3/4.10.4, the footnote which references TS 3/4.10.4 in TS 3/4.4.1.1 is deleted as well.

B. SAFETY ASSESSMENT

The original design basis for the Power Range Neutron Flux High Negative Rate Trip was to mitigate the consequences of one or more dropped rod cluster control assemblies (RCCAs). At high power levels, in the event of one or more dropped RCCAs, the Reactor Trip System (RTS) would detect the rapidly decreasing neutron flux (i.e., high negative flux rate) due to the dropped RCCAs and would trip the reactor based on "power range neutron high negative rate reactor trip function." The reactor trip would end the transient and assure the departure from nucleate boiling (DNB) limits were maintained.

In January 1982, Westinghouse submitted a topical report entitled, "Dropped Rod Methodology for Negative Flux Rate Trip Plants," (WCAP-10297) which concluded that the negative flux rate trip function was only required when the dropped rod (or bank) exceeded a certain reactivity worth threshold value. Any dropped rod (or bank), which had a worth below the threshold value, would not require an automatic reactor trip to maintain DNB limits.

The Westinghouse Owner's Group (WOG) subsequently submitted topical report WCAP-11394-P, "Methodology for the Analysis of the Dropped Rod Event", for NRC review and approval. The conclusion reached in the WCAP was that: "Successful plant/cycle specific application of this methodology will be sufficient to confirm that the DNB basis is met for all dropped rod events initiated from full power." Subsequently, the NRC issued the results of their review of WCAP-11394-P in a letter to the WOG dated October 23, 1989. In the letter, the NRC confirmed that the staff had reviewed the new Westinghouse calculation process, the parameters used, and the results, and had concluded that this was an acceptable analysis procedure. The NRC noted that further review by the staff (for each cycle) is not necessary, given the utility assertion that the analysis described in WCAP-11394-P-A has been performed and the required comparisons have been made with favorable results.

WCAP-11394-P-A demonstrates that the DNB design basis is met during the course of the dropped RCCA transient, which considers one or more dropped RCCAs. No credit is taken for any direct reactor trip due to the dropped RCCA(s) or for automatic power reduction due to the dropped RCCA(s).

The correlations and statepoints generated for this methodology apply to Seabrook Station. Due to the plant-specific nature of the core physics characteristics and the thermal-hydraulic dropped rod limit lines, plant-specific data are combined with the appropriate set of correlations and statepoints to verify that the DNB design basis is met for the dropped RCCA(s) event for every fuel cycle design.

The Seabrook Station specific analysis of the transient response, nuclear peaking factor, and confirmation of the DNB design basis, were performed in accordance with the methodology described in WCAP-11394-P-A as documented in UFSAR Section 15.4.3. The analysis did not take any credit for the negative flux rate reactor trip or for any automatic power reduction due to the dropped RCCA(s), including the limiting assumption that rod control is in automatic and the control banks are at their insertion limit. The analysis concluded that the minimum DNBR remains above the limit value for each analyzed case.

For each fuel cycle design, a cycle-specific dropped RCCA evaluation is performed. The neutron flux high negative rate trip function is not credited in the current cycle-specific dropped RCCA analysis, and the current analysis and limits conform to WCAP-11394-P-A. Therefore, there is no adverse impact that increases the risk to the health and safety of the public as a result of the proposed changes.

The following provides an assessment of the proposed changes with respect to other Seabrook Station safety analyses and evaluations.

Loss of Coolant Accident (LOCA) and LOCA-Related Evaluations

The neutron flux high negative rate trip function is not modeled in the LOCA analyses. The following LOCA-related analyses are not affected by the proposed changes: large and small break LOCA, reactor vessel and Reactor Coolant System (RCS) loop LOCA blowdown forces, post-LOCA long term core cooling subcriticality, post-LOCA long term core cooling minimum flow, and RCS hot leg switchover to prevent boron precipitation. The proposed changes do not affect the nominal plant operating parameters, accident mitigation capabilities important to a LOCA, the assumptions used in the LOCA-related accidents, or create conditions more limiting than those assumed in these analyses.

Non-LOCA Related Evaluation

Although the neutron flux high negative rate trip function is addressed in the Seabrook Station safety analyses, the current non-LOCA safety analyses do not take credit for the neutron flux high negative rate trip function. Specifically, the dropped RCCA(s) analyses utilized for the current cycle do not rely on actuation of the neutron flux high negative rate trip function to mitigate the consequences of the accident. These analyses were performed in accordance with the NRC-approved methodology for the analysis of dropped RCCA(s) events provided in WCAP-11394-P-A. The analysis statepoints consider dropped RCCA worths up to 800 percent millirho (pcm). The analysis assumptions and confirmation that the DNB design basis is met are further confirmed as part of the reload safety analysis for each reactor core reload. Currently, the cycle-specific reload safety analysis limits include

dropped RCCA statepoints with maximum dropped rod worth of 800 pcm. The reload safety analysis verifies the limiting dropped rod worth is less than 800 pcm. Therefore, the conclusion presented in the UFSAR that the DNB design basis is met with respect to non-LOCA related evaluations remains valid for the proposed changes which credit the application of WCAP-11394-P-A.

Mechanical Components and Systems Evaluation

Elimination of the neutron flux high negative rate trip function does not affect the integrity of RCS components or the ability of the RCS to perform its intended safety function. The proposed changes do not affect the integrity of plant systems or their ability to perform intended safety functions.

Containment Integrity Evaluation (Short Term / Long Term LOCA Case)

The neutron flux high negative rate trip function is not credited in the containment analyses. The proposed changes do not adversely affect the short-term and long-term LOCA mass and energy releases of the containment analyses. The proposed changes do not affect the normal plant operating parameters, system actuations, capabilities or assumptions important to the containment analyses, or create conditions more limiting than those assumed in these analyses. Therefore, the conclusions presented in the UFSAR remain valid with respect to the containment analyses.

Main Steam Line Break (MSLB) Mass and Energy Release Evaluation

The neutron flux high negative rate trip function is not credited in the UFSAR MSLB analyses. The proposed changes do not adversely affect the MSLB mass and energy releases, either inside or outside containment, and do not adversely affect the calculations for the steam mass release used as input to the radiological dose evaluation. The proposed changes do not affect the normal plant operating parameters, input assumptions, results or conclusions of the MSLB mass and energy release analyses, and steam release calculations. Also, conditions are not created which are more limiting than those enveloped by the current analyses and calculations. Therefore, the conclusions presented in the UFSAR remain valid with respect to MSLB mass and energy release rates and steam mass release calculations.

Emergency Operating Procedures (EOPs) Evaluation

The proposed changes do not adversely affect the EOPs. The neutron flux high negative rate trip function is currently referenced within the EOPs but the function does not "drive" certain actions to be carried out within the EOPs, therefore elimination of this reference will not adversely affect the EOPs. Responding to dropped or misaligned RCCA events are covered by Abnormal Operating Procedures (AOPs) which instructs the operators to manually trip the reactor for multiple dropped RCCAs.

Safety Systems Allowable Values and Setpoints Evaluation

The proposed changes do not affect other RTS or Engineered Safety Feature Actuation System (ESFAS) Allowable Values or Setpoints. The neutron flux high negative rate trip function deletion does not change the current Allowable Value information for any other function shown in the TS, and does not change the current Setpoint information for any other function shown in the Seabrook Station Technical Requirements (SSTR) Manual. Therefore,

the neutron flux high negative rate trip function deletion has no impact on the plant safety functions.

Steam Generator Tube Rupture (SGTR) Evaluation

The neutron flux high negative rate trip function is not credited in the SGTR analyses. The proposed changes do not adversely affect the normal plant operating parameters, results or conclusions of the SGTR thermal and hydraulic analyses. Also, conditions are not created which are more limiting than those enveloped by the current analyses for break flow and steam release. Therefore, the conclusions presented in the UFSAR remain valid with respect to the SGTR event.

Control Systems Evaluation

The proposed changes have no adverse impact on the control systems evaluation. The deletion of the neutron flux high negative rate trip function could increase plant availability because the proposed changes eliminate a potential source of inadvertent reactor trips.

In conclusion, a specific Seabrook Station analysis utilizing the methodology presented in WCAP-11394-P-A demonstrates that DNBR remains above its limit value and no fuel or clad damage occurs resulting from a dropped rod (or bank) from full power, with limiting assumptions. Therefore, since the consequences of accidents previously evaluated in the UFSAR are unaffected by the proposed change (because the high negative flux rate trip is not required to prevent core damage and maintain DNBR within its limits following a dropped RCCA event) the proposed changes to the subject Technical Specifications do not pose a significant hazard to the public health and safety.

An additional justification for deletion of the power range neutron flux high negative rate reactor trip function from the TS is that since it is not credited in Seabrook Station's safety analysis, the function is not considered a limiting condition for operation (LCO). That is, it does not meet the four criteria of 10 CFR 50.36, and therefore the function does not warrant inclusion in the Technical Specifications as a LCO.

Under 10 CFR 50.36(c)(2)(ii), a limiting condition for operation must be included in TSs for any item meeting one or more of the following four criteria:

1. Installed instrumentation that is used to detect, and indicate in the control room a significant abnormal degradation of the reactor coolant pressure boundary;

2. A process variable design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;

3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; and

4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

From the above criteria, the power range neutron flux high negative rate reactor trip function does not meet any of the criteria set out in 10 CFR 50.36(c)(2)(ii). Its deletion will have no impact on the important plant safety functions, and as such, the deletion of the power range neutron flux high negative rate reactor trip function from the TS is acceptable.

The proposed changes to TS 3/4.10.3 are as follows:

1. Adding a footnote clarifying that only the reactor trip Low Setpoint associated with the OPERABLE Power Range Neutron Flux instrumentation channels are required to be set at 25% of RATED THERMAL POWER. Currently, North Atlantic lowers the Power Range Neutron Flux High Setpoint (nominally 109 percent) to 25 percent in order to remain compliant (literally) with TS 3/4.10.3 requirements. North Atlantic believes that re-scaling the Power Range Neutron Flux High Setpoint to 25 percent is very conservative since two (2) channels of Intermediate Range and four (4) channels of the Power Range Neutron Flux Low Setpoint are always normally set at 25 percent. North Atlantic believes that sufficient protection exists without the need for an additional four channels to be set at 25 percent. Also, re-scaling is time consuming and potentially exposes the plant to additional trips during re-scaling activities to restore the Power Range Neutron Flux High Setpoint on those four channels back to 109 percent. North Atlantic performed a review of the improved Standard Technical Specifications for Westinghouse Plants, NUREG-1431, Rev. 2, that indicates the comparable TS (LCO 3.1.8 and its associated SR 3.1.8.1) for PHYSICS TESTS Exceptions does not specify that all channels are set at 25 percent.

2. An editorial change to support the proposed footnote. The word "Range" is inserted after Intermediate in LCO 3.10.3b and SR 4.10.3.2 so as to distinguish between the Intermediate and Power Range channels, thereby allowing the footnote asterisk to be applicable only to the Power Range channels.

3. Extending the time interval for the Analog Channel Operational Test (ACOT) in surveillance requirement (SR) 4.10.3.2 from 'within 12 hours' to the referenced time interval specified in TS Table 4.3-1, Functional Unit 2.b (essentially within 31 days prior to STARTUP). NRC-approved TSTF Traveler 108, Rev. 1, addressed a similar issue concerning the elimination of requiring an ACOT within 12 hours prior to initiation of Physics Tests and extending it out to the interval specified in the Reactor Trip System (RTS) Instrumentation TS (LCO 3.3.1, which requires an ACOT every 92 days). North Atlantic concurs with the assessment in TSTF-108, Rev. 1, that the frequency of the ACOT can be justifiably extended to the interval specified in the RTS Instrumentation TS. Initiation of Physics Tests does not impact the ability of the instrumentation channels to perform their required function, does not affect the trip setpoints or RTS trip capability, and does not invalidate previous surveillances. Therefore, an additional surveillance required to be performed within 12 hours of this event, regardless of whether the ACOT has been performed within its required frequency as specified in the RTS Instrumentation TS, is an extraneous and unnecessary performance of a surveillance. Thus, for Seabrook Station specifically, the interval specified in TS Table 4.3-1 for Functional Unit 2.b is the appropriate interval for the required SR 4.10.3.2 ACOT to verify that the power range and intermediate range channels are properly functioning. Furthermore, this surveillance is not related to any LCO requirement and has no appropriate Action to enter upon failure to meet the surveillance. Therefore, deletion of the "within 12 hours" requirement and relying on the ACOT surveillance specified in TS Table 4.3-1 enhances the proper utilization of the Technical Specifications.

4. Making SR 4.10.3.2 a "verification" rather than a "performance" SR. This change would allow performance of the ACOT to be aligned and controlled solely by TS Table 4.3-1.

5. Inserting the word OPERABLE in SR 4.10.3.2 so as to be consistent with LCO 3.10.3b requirements which is limited to the OPERABLE channels only.

In correlation with the proposed change to extend the ACOT interval in SR 4.10.3.2, North Atlantic proposes to extend the ACOT interval in TS Table 4.3-1 for the Power Range Neutron Flux Low Setpoint (Functional Unit 2.b), and the Intermediate Range Neutron Flux (Functional Unit 5). The extension for these functions would increase the requirement to perform the ACOT if not performed within the previous 92 days instead of the current 31 days, as specified in Note 1 of Table 4.3-1.

The Power Range Neutron Flux Low Setpoint Trip Function and the Intermediate Range Trip Setpoint Function ensures that protection is provided against a positive reactivity excursion from low power or subcritical conditions. In addition, further protection against a positive reactivity excursion leading to a DNB during power operation is provided by the Power Range Neutron Flux High Setpoint Trip Function. The justification for extension of the ACOT time interval from 31 days to 92 days is based on Seabrook Station's as-found historical data showing the ACOTs performed to date have been extremely stable between ACOTs with little drift and few adjustments. Current industry practice for performing ACOTs on these instrumentation channels are on a quarterly basis, as indicated in the improved Standard Technical Specifications, NUREG-1431, Rev. 2.

Also as a result of changing TS Table 4.3-1 Note 1 to 92 days the Source Range Neutron Flux ACOT frequency (TS Table 4.3-1, Functional Unit 6) is affected as well. Currently the ACOT performance frequency is specified as S/U (Note 1) and on a Quarterly basis as well. The Source Range Neutron Flux Trip Function ensures that protection is provided against an uncontrolled RCCA bank rod withdrawal accident from a subcritical condition during startup. This trip function provides redundant protection to the Power Range Neutron Flux – Low Trip Function, which provides core protection for reactivity accidents. North Atlantic proposes to continue to reference S/U (Note 1) at the 92 day frequency. Though it appears that the new S/U frequency of 92 days is redundant to the Quarterly requirement, however, North Atlantic believes maintaining the S/U (Note 1) requirement serves as a one-time performance, where the 25% grace period of Specification 4.0.2 is not applicable, whereas the grace period would be applicable to the Quarterly requirement during extended operation in MODES 2, 3, 4 and 5. This interpretation is consistent with NUREG-1431, Rev. 2, Specification 1.4, "Use and Application - Frequency." Justification for this change is also based on Seabrook Station's as-found historical data showing the ACOTs performed to date have been extremely stable between ACOTs with little drift and few adjustments. North Atlantic believes that the additional surveillance required to be performed within 31 days prior to this event, regardless of whether the ACOT has been performed within its required quarterly frequency, as specified in TS Table 4.3-1, is an extraneous and unnecessary performance of a surveillance.

Also as a result of changing Note 1 from 31 days to 92 days, the Trip Actuating Device Operational Test (TADOT) for the Turbine Trip Low Fluid Oil Pressure (Functional Unit 16.a) and Turbine Trip Turbine Stop Valve (Functional Unit 16.b) are affected as well. It is proposed to retain the reference Note 1 for these functions thus allowing the interval for the performance of these TADOTs to be increased to 92 days as well. The Turbine Trip Low Fluid Oil Pressure Function and the Turbine Trip Turbine Stop Valve Function are anticipatory trips which anticipate the loss of heat removal capabilities of the secondary system following a turbine trip /

closure of the stop valves. These anticipatory trips minimize the pressure and temperature transient on the reactor coolant system (RCS). The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure – High Trip Function and RCS integrity is ensured by the pressurizer safety valves. Justifications for this increase is based on Seabrook Station's as-found historical data showing the TADOTs performed to date have been favorable. In addition, with exception of the turbine stop valve hydraulic fluid pressure switches and position limit switches, the components utilized in the Turbine Trip protection channels are similar in makeup to other RTS protection channels and therefore the failure rate of these components are not expected to be any different than other similar RTS protection channels which are currently being tested on a quarterly frequency.

The calibration data for Stop Valve position limit switches, going back to 1995 (five calibrations) found all AS FOUND calibration data in tolerance with no adjustments necessary and none made.

Prior to 1999 Seabrook Station did experience repeated drift of the hydraulic fluid pressure switches where AS FOUND data was typically out of tolerance. In response to that observed condition in 1999 the pressure switches were changed to a different model more suited to the application. The last two calibrations (which are the only two since switch change out) performed with the new switches installed showed AS FOUND pressure switch calibration data in tolerance where no adjustments were necessary and none made.

Extension of the aforementioned ACOTs and TADOTs would provide North Atlantic additional operational flexibility to schedule performance of these activities at an optimum time frame to support future refueling outages.

The proposed change to TS 3/4.10.4 deletes this Special Test Exception in its entirety since the condition it allows the plant to be placed in (i.e., natural circulation / low flow condition) was to support the initial startup test program prior to commercial operation. Present and future startup / physics testing (post core reload) do not require natural circulation conditions / low flow to perform these tests. The TS Index page and associated Bases are revised to reflect deletion of TS 3/4.10.4. Additionally, as a result of deleting TS 3/4.10.4, the footnote which references TS 3/4.10.4 in TS 3/4.4.1.1 is deleted as well.

Section II

Markup of Proposed Changes

The attached markup reflects the currently issued revision of the Technical Specifications and Bases listed below. Pending Technical Specifications or Technical Specification changes issued subsequent to this submittal are not reflected in the enclosed markup.

The following Technical Specifications and Bases are included in the attached markups:

Technical Specification	Title	Page(s)
Index	3/4.10.4 Reactor Coolant Loops	ix & xii
Table 2.2-1	Reactor Trip System Instrumentation Trip Setpoints	2-4
Section 2.0 Bases	Limiting Safety System Settings	B 2-4
Table 3.3-1	Reactor Trip System Instrumentation	3/4 3-2
Table 4.3-1	Reactor Trip System Instrumentation Surveillance Requirements	3/4 3-9
Table 4.3-1	Table Notations	3/4 3-12
3/4.4.1.1	Reactor Coolant Loops and Coolant Circulation – Startup and Power Operation	3/4 4-1
3/4.10.3	Special Test Exceptions – Physics Tests	3/4 10-3
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Bases 3/4.10	Special Test Exceptions Bases	B 3/4 10-1

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

BASES

TABLE 2.2-1
REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
1. Manual Reactor Trip	N.A.	N.A.	N.A.	N.A.	N.A.
2. Power Range, Neutron Flux					
a. High Setpoint	7.5	4.56	1.42	≤109% of RTP*	≤111.1% of RTP*
b. Low Setpoint	8.3	4.56	1.42	≤25% of RTP*	≤27.1% of RTP*
3. Power Range, Neutron Flux, High Positive Rate (NOT USED)	1.6	0.5	0	≤5% of RTP* with a time constant ≥2 seconds	≤6.3% of RTP* with a time constant ≥2 seconds
4. Power Range, Neutron Flux, High Negative Rate	1.6	0.5	0	≤5% of RTP* with a time constant ≥2 seconds	≤6.3% of RTP* with a time constant ≥2 seconds
5. Intermediate Range, Neutron Flux	17.0	8.41	0	≤25% of RTP*	≤31.1% of RTP*
6. Source Range, Neutron Flux	17.0	10.01	0	$\leq 10^5$ cps	$\leq 1.6 \times 10^5$ cps
7. Overtemperature ΔT	N.A	N.A	N.A	See Note 1	See Note 2
8. Overpower ΔT	N.A	N.A	N.A	See Note 3	See Note 4
9. Pressurizer Pressure - Low	N.A	N.A	N.A	≥1945 psig	≥1,933 psig
10. Pressurizer Pressure - High	N.A	N.A	N.A	≤2385 psig	≤2,397 psig

*RTP = RATED THERMAL POWER

ROTATE TO Here

2.2.1 REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS (Continued)

The various Reactor trip circuits automatically open the Reactor trip breakers whenever a condition monitored by the Reactor Trip System reaches a preset or calculated level. In addition to redundant channels and trains, the design approach provides a Reactor Trip System which monitors numerous system variables, therefore providing Trip System functional diversity. The functional capability at the specified trip setting is required for those anticipatory or diverse Reactor trips for which no direct credit was assumed in the safety analysis to enhance the overall reliability of the Reactor Trip System. The Reactor Trip System initiates a Turbine trip signal whenever Reactor trip is initiated. This prevents the reactivity insertion that would otherwise result from excessive Reactor Coolant System cooldown and thus avoids unnecessary actuation of the Engineered Safety Features Actuation System.

Manual Reactor Trip

The Reactor Trip System includes manual Reactor trip capability.

Power Range, Neutron Flux

In each of the Power Range Neutron Flux channels there are two independent bistables, each with its own trip setting used for a High and Low Range trip setting. The Low Setpoint trip provides protection during subcritical and low power operations to mitigate the consequences of a power excursion beginning from low power, and the High Setpoint trip provides protection during power operations to mitigate the consequences of a reactivity excursion from all power levels.

The Low Setpoint trip may be manually blocked above P-10 (a power level of approximately 10% of RATED THERMAL POWER) and is automatically reinstated below the P-10 Setpoint.

Power Range, Neutron Flux, High Rate

The Power Range High Positive Rate trip provides protection against rapid flux increases which are characteristic of a rupture of a control rod drive housing. Specifically, this trip complements the Power Range Neutron Flux High and Low trips to ensure that the criteria are met for rod ejection from mid-power.

The Power Range Negative Rate trip provides protection for control rod drop accidents. At high power, a single or multiple rod drop accident could cause local flux peaking which could cause an unconservative local DNBR to exist. The Power Range Negative Rate trip will prevent this from occurring by tripping the reactor. No credit is taken for operation of the Power Range Negative Rate trip for those control rod drop accidents for which DNBRs will be greater than or equal to the DNBR limits specified in the applicable NRC-approved analytical methods referenced in Specification 6.8.1.6.b.5.

~~BCR No. 00-04~~

~~Revised by NRC letter dated 6/8/01~~

AMENDMENT NO.

TABLE 3.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. Manual Reactor Trip	2	1	2	1, 2	1
	2	1	2	3*, 4*, 5*	10
2. Power Range, Neutron Flux					
a. High Setpoint	4	2	3	1, 2	2
b. Low Setpoint	4	2	3	1###, 2	2
3. Power Range, Neutron Flux High Positive Rate	4	2	3	1, 2	2
4. Power Range, Neutron Flux, High Negative Rate (NOT USED)	4	2	3	1, 2	2
5. Intermediate Range, Neutron Flux	2	1	2	1###, 2	3
6. Source Range, Neutron Flux					
a. Startup	2	1	2	2##	4
b. Shutdown	2	0	1	3, 4, 5	5
c. Shutdown	2	1	2	3*, 4*, 5*	10
7. Overtemperature ΔT	4	2	3	1, 2	6
8. Overpower ΔT	4	2	3	1, 2	6
9. Pressurizer Pressure--Low	4	2	3	1**	6
10. Pressurizer Pressure--High	4	2	3	1, 2	6
11. Pressurizer Water Level--High	3	2	2	1**	6#

ROTATE TO HERE

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED	
1. Manual Reactor Trip	N.A.	N.A.	N.A.	R(13)	N.A.	1,2,3*,4*,5*	
2. Power Range, Neutron Flux a. High Setpoint	S	D(2, 4), M(3, 4), Q(4, 6), R(4, 5)	Q	N.A.	N.A.	1, 2	(1)
b. Low Setpoint	S	R(4)	S/U(1)	N.A.	N.A.	1***, 2	
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(4)	Q	N.A.	N.A.	1, 2	(1)
4. ~~Power Range, Neutron Flux, High Negative Rate~~ (NOT USED)	~~N.A.~~	~~R(4)~~	~~Q~~	~~N.A.~~	~~N.A.~~	~~1, 2~~	1
5. Intermediate Range, Neutron Flux	S	R(4, 5)	S/U(1)	N.A.	N.A.	1***, 2	
6. Source Range, Neutron Flux	S	R(4, 5)	S/U(1),Q(9)	N.A.	N.A.	2**, 3, 4, 5	
7. Overtemperature ΔT	S	R	Q	N.A.	N.A.	1, 2	
8. Overpower ΔT	S	R	Q	N.A.	N.A.	1, 2	
9. Pressurizer Pressure--Low	S	R	Q	N.A.	N.A.	1	
10. Pressurizer Pressure--High	S	R	Q	N.A.	N.A.	1, 2	
11. Pressurizer Water Level--High	S	R	Q	N.A.	N.A.	1	
12. Reactor Coolant Flow--Low	S	R	Q	N.A.	N.A.	1	

ROTATE TO HERE

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

*Only if the Reactor Trip System breakers happen to be closed and the Control Rod Drive System is capable of rod withdrawal.

**Below P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

***Below P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

(1) If not performed in previous ~~31~~ 92 days.

(2) Comparison of calorimetric to excore power indication above 15% of RATED THERMAL POWER. Adjust excore channel gains consistent with calorimetric power if absolute difference is greater than 2%. The provisions of Specification 4.0.4 are not applicable to entry into MODE 2 or 1.

(3) Single point comparison of incore to excore AXIAL FLUX DIFFERENCE above 50% of RATED THERMAL POWER. Recalibrate if the absolute difference is greater than or equal to 3%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1. For the purposes of this surveillance requirement, monthly shall mean at least once per 31 EFPD.

(4) Neutron detectors may be excluded from CHANNEL CALIBRATION.

(5) Initial plateau curves shall be measured for each detector. Subsequent plateau curves shall be obtained, evaluated and compared to the initial curves. For the Intermediate Range and Power Range Neutron Flux channels the provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.

(6) Incore - Excore Calibration, above 75% of RATED THERMAL POWER. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1. For the purposes of this surveillance requirement, quarterly shall mean at least once per 92 EFPD.

(7) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(8) (Not used)

(9) Surveillance in MODES 3*, 4*, and 5* shall also include verification that permissives P-6 and P-10 are in their required state for existing plant conditions by observation of the permissive annunciator window.

(10) Setpoint verification is not applicable.

(11) The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip attachments of the Reactor Trip Breakers.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION

LIMITING CONDITION FOR OPERATION

3.4.1.1 All reactor coolant loops shall be in operation.

APPLICABILITY: MODES 1 and 2.*

ACTION:

With less than the above required reactor coolant loops in operation, be in at least HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.1.1 The above required reactor coolant loops shall be verified in operation and circulating reactor coolant at least once per 12 hours.

*See Special Test Exceptions Specification 3.10.4.

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SPECIAL TEST EXCEPTIONS

3/4.10.3 PHYSICS TESTS

LIMITING CONDITION FOR OPERATION

3.10.3 The limitations of Specifications 3.1.1.3, 3.1.1.4, 3.1.3.1, 3.1.3.5, and 3.1.3.6 may be suspended during the performance of PHYSICS TESTS provided:

a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER,

b. The Reactor Trip Setpoints on the OPERABLE Intermediate RANGE and Power Range channels are set at less than or equal to 25% of RATED THERMAL POWER, and

c. The Reactor Coolant System lowest operating loop temperature (T_{avg}) is greater than or equal to 541°F.

APPLICABILITY: MODE 2.

ACTION:

a. With the THERMAL POWER greater than 5% of RATED THERMAL POWER, immediately open the Reactor trip breakers.

b. With a Reactor Coolant System operating loop temperature (T_{avg}) less than 541°F, restore T_{avg} to within its limit within 15 minutes or be in at least HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.10.3.1 The THERMAL POWER shall be determined to be less than or equal to 5% of RATED THERMAL POWER at least once per hour during PHYSICS TESTS.

VERIFY 4.10.3.2 Each OPERABLE Intermediate RANGE and Power Range* channel HAS BEEN subjected to an ANALOG CHANNEL OPERATIONAL TEST ~~within 12 hours~~ prior to initiating PHYSICS TESTS. PER SPECIFICATION TABLE 4.3-1

4.10.3.3 The Reactor Coolant System temperature (T_{avg}) shall be determined to be greater than or equal to 541°F at least once per 30 minutes during PHYSICS TESTS.

* POWER RANGE LOW SET POINT ONLY.

ALL CAPS

SPECIAL TEST EXCEPTIONS (THIS SPECIFICATION NUMBER IS NOT USED)

3/4.10.4 REACTOR COOLANT LOOPS

LIMITING CONDITION FOR OPERATION

3.10.4 The limitations of Specification 3.4.1.1 may be suspended during the performance of STARTUP and PHYSICS TESTS provided:

a. The THERMAL POWER does not exceed the P-7 Interlock Setpoint, and

b. The Reactor Trip Setpoints on the OPERABLE Intermediate and Power Range channels are set less than or equal to 25% of RATED THERMAL POWER.

APPLICABILITY: During operation below the P-7 Interlock Setpoint.

ACTION:

With the THERMAL POWER greater than the P-7 Interlock Setpoint during the performance of STARTUP and PHYSICS TESTS, immediately open the Reactor trip breakers.

SURVEILLANCE REQUIREMENTS

4.10.4.1 The THERMAL POWER shall be determined to be less than P-7 Interlock Setpoint at least once per hour during STARTUP and PHYSICS TESTS.

4.10.4.2 Each Intermediate and Power Range channel, and P-7 Interlock shall be subjected to an ANALOG CHANNEL OPERATIONAL TEST within 12 hours prior to initiating STARTUP and PHYSICS TESTS.

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AMENDMENT NO. (310)

3/4.10 SPECIAL TEST EXCEPTIONS

BASES

3/4.10.1 SHUTDOWN MARGIN

This special test exception provides that a minimum amount of control rod worth is immediately available for reactivity control when tests are performed for control rod worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations.

3/4.10.2 GROUP HEIGHT, INSERTION, AND POWER DISTRIBUTION LIMITS

This special test exception permits individual control rods to be positioned outside of their normal group heights and insertion limits during the performance of such PHYSICS TESTS as those required to: (1) measure control rod worth and (2) determine the reactor stability index and damping factor under xenon oscillation conditions.

3/4.10.3 PHYSICS TESTS

This special test exception permits PHYSICS TESTS to be performed at less than or equal to 5% of RATED THERMAL POWER with the RCS T_{avg} slightly lower than normally allowed so that the fundamental nuclear characteristics of the core and related instrumentation can be verified. In order for various characteristics to be accurately measured, it is at times necessary to operate outside the normal restrictions of these Technical Specifications. For instance, to measure the moderator temperature coefficient at BOL, it is necessary to position the various control rods at heights which may not normally be allowed by Specification 3.1.3.6 and the RCS T_{avg} may be below the minimum temperature of Specification 3.1.1.4 during the measurement.

3/4.10.4 REACTOR COOLANT LOOPS

This special test exception permits reactor criticality under no flow conditions and is required to perform certain STARTUP and PHYSICS TESTS while at low THERMAL POWER levels.

3/4.10.5 POSITION INDICATION SYSTEM - SHUTDOWN

This special test exception permits the Position Indication Systems to be inoperable during rod drop time measurements. The exception is required since the data necessary to determine the rod drop time are derived from the induced voltage in the position indicator coils as the rod is dropped. This induced voltage is small compared to the normal voltage and, therefore, cannot be observed if the Position Indication Systems remain OPERABLE.

(THIS SPECIFICATION NUMBER IS NOT USED)

ALL CAPS

SECTION III

Retype of Proposed Changes

The attached retype reflects the currently issued version of the Technical Specifications. Pending Technical Specification changes or Technical Specification changes issued subsequent to this submittal are not reflected in the enclosed retype. The enclosed retype should be checked for continuity with Technical Specifications prior to issuance.

BASES

TABLE 2.2-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
1. Manual Reactor Trip	N.A.	N.A.	N.A.	N.A.	N.A.
2. Power Range, Neutron Flux					
a. High Setpoint	7.5	4.56	1.42	≤109% of RTP*	≤111.1% of RTP*
b. Low Setpoint	8.3	4.56	1.42	≤25% of RTP*	≤27.1% of RTP*
3. Power Range, Neutron Flux, High Positive Rate	1.6	0.5	0	≤5% of RTP* with a time constant ≥2 seconds	≤6.3% of RTP* with a time constant ≥2 seconds
4. NOT USED					
5. Intermediate Range, Neutron Flux	17.0	8.41	0	≤25% of RTP*	≤31.1% of RTP*
6. Source Range, Neutron Flux	17.0	10.01	0	$\leq 10^5$ cps	$\leq 1.6 \times 10^5$ cps
7. Overtemperature ΔT	N.A.	N.A.	N.A.	See Note 1	See Note 2
8. Overpower ΔT	N.A.	N.A.	N.A.	See Note 3	See Note 4
9. Pressurizer Pressure - Low	N.A.	N.A.	N.A.	≥1945 psig	≥1,933 psig
10. Pressurizer Pressure - High	N.A.	N.A.	N.A.	≤2385 psig	≤2,397 psig

*RTP = RATED THERMAL POWER

2.2.1 REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS (Continued)

The various Reactor trip circuits automatically open the Reactor trip breakers whenever a condition monitored by the Reactor Trip System reaches a preset or calculated level. In addition to redundant channels and trains, the design approach provides a Reactor Trip System which monitors numerous system variables, therefore providing Trip System functional diversity. The functional capability at the specified trip setting is required for those anticipatory or diverse Reactor trips for which no direct credit was assumed in the safety analysis to enhance the overall reliability of the Reactor Trip System. The Reactor Trip System initiates a Turbine trip signal whenever Reactor trip is initiated. This prevents the reactivity insertion that would otherwise result from excessive Reactor Coolant System cooldown and thus avoids unnecessary actuation of the Engineered Safety Features Actuation System.

Manual Reactor Trip

The Reactor Trip System includes manual Reactor trip capability.

Power Range, Neutron Flux

In each of the Power Range Neutron Flux channels there are two independent bistables, each with its own trip setting used for a High and Low Range trip setting. The Low Setpoint trip provides protection during subcritical and low power operations to mitigate the consequences of a power excursion beginning from low power, and the High Setpoint trip provides protection during power operations to mitigate the consequences of a reactivity excursion from all power levels.

The Low Setpoint trip may be manually blocked above P-10 (a power level of approximately 10% of RATED THERMAL POWER) and is automatically reinstated below the P-10 Setpoint.

Power Range, Neutron Flux, High Positive Rate

The Power Range High Positive Rate trip provides protection against rapid flux increases which are characteristic of a rupture of a control rod drive housing. Specifically, this trip complements the Power Range Neutron Flux High and Low trips to ensure that the criteria are met for rod ejection from mid-power.

TABLE 3.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. Manual Reactor Trip	2	1	2	1, 2	1
	2	1	2	3*, 4*, 5*	10
2. Power Range, Neutron Flux					
a. High Setpoint	4	2	3	1, 2	2
b. Low Setpoint	4	2	3	1###, 2	2
3. Power Range, Neutron Flux High Positive Rate	4	2	3	1, 2	2
4. NOT USED					
5. Intermediate Range, Neutron Flux	2	1	2	1###, 2	3
6. Source Range, Neutron Flux					
a. Startup	2	1	2	2##	4
b. Shutdown	2	0	1	3, 4, 5	5
c. Shutdown	2	1	2	3*, 4*, 5*	10
7. Overtemperature ΔT	4	2	3	1, 2	6
8. Overpower ΔT	4	2	3	1, 2	6
9. Pressurizer Pressure--Low	4	2	3	1**	6
10. Pressurizer Pressure--High	4	2	3	1, 2	6
11. Pressurizer Water Level--High	3	2	2	1**	6#

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Manual Reactor Trip	N.A.	N.A.	N.A.	R(13)	N.A.	1,2,3*,4*,5*
2. Power Range, Neutron Flux a. High Setpoint	S	D(2, 4), M(3, 4), Q(4, 6), R(4, 5)	Q	N.A.	N.A.	1, 2
b. Low Setpoint	S	R(4)	S/U(1)	N.A.	N.A.	1***, 2
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(4)	Q	N.A.	N.A.	1, 2
4. NOT USED						
5. Intermediate Range, Neutron Flux	S	R(4, 5)	S/U(1)	N.A.	N.A.	1***, 2
6. Source Range, Neutron Flux	S	R(4, 5)	S/U(1),Q(9)	N.A.	N.A.	2**, 3, 4, 5
7. Overtemperature ΔT	S	R	Q	N.A.	N.A.	1, 2
8. Overpower ΔT	S	R	Q	N.A.	N.A.	1, 2
9. Pressurizer Pressure--Low	S	R	Q	N.A.	N.A.	1
10. Pressurizer Pressure--High	S	R	Q	N.A.	N.A.	1, 2
11. Pressurizer Water Level--High	S	R	Q	N.A.	N.A.	1
12. Reactor Coolant Flow--Low	S	R	Q	N.A.	N.A.	1

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

*Only if the Reactor Trip System breakers happen to be closed and the Control Rod Drive System is capable of rod withdrawal.

**Below P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

***Below P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

(1) If not performed in previous 92 days.

(2) Comparison of calorimetric to excore power indication above 15% of RATED THERMAL POWER. Adjust excore channel gains consistent with calorimetric power if absolute difference is greater than 2%. The provisions of Specification 4.0.4 are not applicable to entry into MODE 2 or 1.

(3) Single point comparison of incore to excore AXIAL FLUX DIFFERENCE above 50% of RATED THERMAL POWER. Recalibrate if the absolute difference is greater than or equal to 3%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1. For the purposes of this surveillance requirement, monthly shall mean at least once per 31 EFPD.

(4) Neutron detectors may be excluded from CHANNEL CALIBRATION.

(5) Initial plateau curves shall be measured for each detector. Subsequent plateau curves shall be obtained, evaluated and compared to the initial curves. For the Intermediate Range and Power Range Neutron Flux channels the provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.

(6) Incore - Excore Calibration, above 75% of RATED THERMAL POWER. The provisions o Specification 4.0.4 are not applicable for entry into MODE 2 or 1. For the purposes of this surveillance requirement, quarterly shall mean at least once per 92 EFPD.

(7) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(8) (Not used)

(9) Surveillance in MODES 3*, 4*, and 5* shall also include verification that permissives P-6 and P-10 are in their required state for existing plant conditions by observation of the permissive annunciator window.

(10) Setpoint verification is not applicable.

(11) The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip attachments of the Reactor Trip Breakers.

REACTOR COOLANT SYSTEM

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION

LIMITING CONDITION FOR OPERATION

3.4.1.1 All reactor coolant loops shall be in operation.

APPLICABILITY: MODES 1 and 2.

ACTION:

With less than the above required reactor coolant loops in operation, be in at least HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.1.1 The above required reactor coolant loops shall be verified in operation and circulating reactor coolant at least once per 12 hours.

SPECIAL TEST EXCEPTIONS

3/4.10.3 PHYSICS TESTS

LIMITING CONDITION FOR OPERATION

3.10.3 The limitations of Specifications 3.1.1.3, 3.1.1.4, 3.1.3.1, 3.1.3.5, and 3.1.3.6 may be suspended during the performance of PHYSICS TESTS provided:

a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER,

b. The Reactor Trip Setpoints on the OPERABLE Intermediate Range and Power Range* channels are set at less than or equal to 25% of RATED THERMAL POWER, and

c. The Reactor Coolant System lowest operating loop temperature (T_{avg}) is greater than or equal to 541°F.

APPLICABILITY: MODE 2.

ACTION:

a. With the THERMAL POWER greater than 5% of RATED THERMAL POWER, immediately open the Reactor trip breakers.

b. With a Reactor Coolant System operating loop temperature (T_{avg}) less than 541°F, restore T_{avg} to within its limit within 15 minutes or be in at least HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.10.3.1 The THERMAL POWER shall be determined to be less than or equal to 5% of RATED THERMAL POWER at least once per hour during PHYSICS TESTS.

4.10.3.2 Verify each OPERABLE Intermediate Range and Power Range* channel has been subjected to an ANALOG CHANNEL OPERATIONAL TEST per Specification Table 4.3-1 prior to initiating PHYSICS TESTS.

4.10.3.3 The Reactor Coolant System temperature (T_{avg}) shall be determined to be greater than or equal to 541°F at least once per 30 minutes during PHYSICS TESTS.

* Power Range Low Setpoint only.

3/4.10.4 (THIS SPECIFICATION NUMBER IS NOT USED)

BASES

3/4.10.1 SHUTDOWN MARGIN

This special test exception provides that a minimum amount of control rod worth is immediately available for reactivity control when tests are performed for control rod worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations.

3/4.10.2 GROUP HEIGHT, INSERTION, AND POWER DISTRIBUTION LIMITS

This special test exception permits individual control rods to be positioned outside of their normal group heights and insertion limits during the performance of such PHYSICS TESTS as those required to: (1) measure control rod worth and (2) determine the reactor stability index and damping factor under xenon oscillation conditions.

3/4.10.3 PHYSICS TESTS

This special test exception permits PHYSICS TESTS to be performed at less than or equal to 5% of RATED THERMAL POWER with the RCS T_{avg} slightly lower than normally allowed so that the fundamental nuclear characteristics of the core and related instrumentation can be verified. In order for various characteristics to be accurately measured, it is at times necessary to operate outside the normal restrictions of these Technical Specifications. For instance, to measure the moderator temperature coefficient at BOL, it is necessary to position the various control rods at heights which may not normally be allowed by Specification 3.1.3.6 and the RCS T_{avg} may be below the minimum temperature of Specification 3.1.1.4 during the measurement.

3/4.10.4 (THIS SPECIFICATION NUMBER IS NOT USED)

3/4.10.5 POSITION INDICATION SYSTEM - SHUTDOWN

This special test exception permits the Position Indication Systems to be inoperable during rod drop time measurements. The exception is required since the data necessary to determine the rod drop time are derived from the induced voltage in the position indicator coils as the rod is dropped. This induced voltage is small compared to the normal voltage and, therefore, cannot be observed if the Position Indication Systems remain OPERABLE.

Section IV

Determination of No Significant Hazards for the Proposed Changes

IV. DETERMINATION OF NO SIGNIFICANT HAZARDS FOR THE PROPOSED CHANGES

License Amendment Request (LAR) 02-03 proposes changes to the Seabrook Station Technical Specifications (TS) to eliminate the Power Range Neutron Flux High Negative Rate Reactor Trip function from TS 3/4.3.1, "Reactor Trip System Instrumentation," TS 2.2.1, "Reactor Trip System Instrumentation Setpoints," and their associated Bases. Also proposed are changes to Special Test Exceptions TS 3/4.10.3, "Physics Tests," TS 3/4.10.4, "Reactor Coolant Loops," and Reactor Trip System Instrumentation TS Table 4.3-1, that are associated with certain testing activities required during STARTUP operations. TS 3/4.4.1, "Reactor Coolant Loops and Coolant Circulation – Startup and Power Operation," is revised as well.

The proposed changes associated with elimination of the Power Range Neutron Flux High Negative Rate Trip function are based on the NRC-approved analysis provided in Westinghouse WCAP-11394-P-A, "Methodology for the Analysis of the Dropped Rod Event." The NRC concluded that it was an acceptable procedure for analyzing the dropped rod event for which no credit is taken for any direct reactor trip or automatic power reduction. Seabrook Station's plant-specific analysis does not take credit for the negative flux rate reactor trip. In addition, since the power range neutron flux high negative rate reactor trip function is not credited in Seabrook Station's safety analysis, the function is not considered a limiting condition for operation (LCO). That is, it does not meet the four criteria of 10 CFR 50.36, and therefore the function does not warrant inclusion in the Technical Specifications as a LCO.

The proposed changes to TS 3/4.10.3 are to clarify that only the reactor trip Low Setpoint associated with the OPERABLE Power Range Neutron Flux instrumentation channels are required to be set at 25% of RATED THERMAL POWER and to reword the time interval for the Analog Channel Operational Test (ACOT) in surveillance requirement (SR) 4.10.3.2 from "within 12 hours" to the referenced time interval specified in TS Table 4.3-1, Functional Unit 2.b. Other changes to TS 3/4.10.3 are editorial in nature to support the above changes.

In correlation with the proposed change to extend the ACOT interval in SR 4.10.3.2, North Atlantic proposes to change TS Table 4.3-1 Note 1 from "if not performed in previous 31 days" to "if not performed in previous 92 days." This proposed change would extend the ACOT interval for Functional Unit 2b (Power Range Neutron Flux Low Setpoint), Functional Unit 5 (Intermediate Range Neutron Flux), Functional Unit 6 (Source Range Neutron Flux), and extend the interval for performance of the Trip Actuating Device Operational Test (TADOT) associated with Functional Units 16a and 16b (Turbine Trip on Low Fluid Oil Pressure and Turbine Stop Valve, respectively).

The proposed change to TS 3/4.10.4 deletes this Special Test Exception in its entirety since the condition it allows the plant to be placed in (i.e., natural circulation / low flow conditions) was to support the initial startup test program prior to commercial operation. Present and future startup / physics testing (post core reload) do not require natural circulation / low flow conditions to perform these tests. Additionally, the TS Index page and associated Bases are revised to reflect deletion of TS 3/4.10.4.

In accordance with 10 CFR 50.92, North Atlantic has concluded that the proposed changes do not involve a significant hazards consideration (SHC). The basis for the conclusion that the proposed changes do not involve a SHC is as follows:

1. **The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.**

The proposed changes (1) to eliminate the Power Range Neutron Flux High Negative Rate Trip Function, (2) not lowering the Power Range Neutron Flux High Setpoint to the same setpoints as that of the Power Range Neutron Flux Low Setpoint and Intermediate Range reactor trip setpoint prior to conducting Physics Testing, (3) extension of the surveillance interval for performing the ACOT and TADOT for the above described Reactor Trip System (RTS) Functional Units, (4) elimination of the Special Test Exception allowing performance of Physics Testing under no flow conditions, and (5) the other editorial and Bases changes to support the aforementioned changes do not increase the probability or consequences of reactor core damage accidents resulting from events previously analyzed. The safety functions of other safety related systems and components, which are related to mitigation of these events, have not been altered. All other RTS and Engineered Safety Features Actuation Systems (ESFAS) protection functions are not affected by the proposed changes. Favorable plant-specific historical data as well as industry practice support the proposed change to extend the surveillance intervals for performance of the applicable ACOT or TADOT on the aforementioned instrumentation channels. The proposed changes do not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, configuration of the facility, or the manner in which it is operated. The proposed changes do not adversely alter or prevent the ability of structures, systems, or components to perform their intended function to mitigate the consequences of an initiating event within the acceptance limits assumed in the Seabrook Station Updated Final Safety Analysis Report (UFSAR).

Removal of the negative rate trip does not change the probability of a rod drop accident since it does not alter the physical function or characteristic of the rod control system. Changing surveillance intervals for calibrations does not change the probability of an initiating event since historical performance demonstrates that the instrumentation settings will be within the assumed tolerance at the longer interval. Since the effects of the negative rate trip are not considered in the rod drop accident analysis, therefore removal of the trip will not result in an increase in the consequences of the rod drop accident. Changes in surveillance frequencies do not change the essential character of accident progression, thus there is no increase in the consequences.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Create the possibility of a new or different kind of accident from any accident previously evaluated.**

The proposed changes do not adversely alter the design assumptions, conditions, or configuration of the facility or the manner in which the plant is operated. No credit is taken in Seabrook Station's safety analyses that is reliant on the Power Range Neutron Flux High Negative Rate Trip Function. Extending the aforementioned surveillance intervals and not lowering the Power Range Neutron Flux High Setpoint prior to physics testing do not create the possibility of a new or different kind of accident from any accident previously evaluated. There are no changes to the source term or radiological release assumptions used in evaluating the radiological consequences in the Seabrook Station UFSAR. The proposed changes have no adverse impact on component or system interactions. The proposed changes will not adversely degrade the ability of systems,

structures and components important to safety to perform their safety function nor change the response of any system, structure or component important to safety as described in the UFSAR. The proposed changes do not change the level of programmatic and procedural details of assuring operation of the facility in a safe manner. Since there are no changes to the design assumptions, conditions, configuration of the facility, or the manner in which the plant is operated and surveilled, the proposed changes do not create the possibility of a new or different kind of accident from any previously analyzed.

3. **Involve a significant reduction in a margin of safety.**

There is no adverse impact on equipment design or operation and there are no changes being made to the Technical Specification required safety limits or safety system settings that would adversely affect plant safety. Elimination of the Power Range Neutron Flux High Negative Rate Trip Function will not cause DNB limits to be exceeded since this function is not credited in Seabrook Station's safety analysis. Eliminating the practice of lowering the Power Range Neutron Flux High Setpoint prior to physics testing does not involve a significant reduction in the margin of safety since there is adequate redundancy of nuclear instrumentation channels to prevent core damage from a positive reactivity excursion. The proposed changes to extend certain surveillance intervals do not reduce the reliability of the aforementioned trip functions to operate as designed nor reduce the level of programmatic or procedural controls associated with the aforementioned surveillance requirements. The negative rate trip function could, and has, caused an inadvertent reactor trip. Removal of this function will not reduce any perceived "defense-in-depth" since the design of the core limits rod worth such that DNB is acceptable during a rod drop event. Additionally, since WCAP-11394-P-A has demonstrated that the negative rate trip is not considered in the safety analysis margin, removal of the NFRT is not considered a "significant reduction in margin". The other changes are editorial / administrative in nature which support the key changes as mentioned above and by their nature do not involve a significant reduction in a margin of safety.

Therefore, the proposed changes as described in this License Amendment Request do not involve a significant reduction in a margin of safety.

Based on the above evaluation, North Atlantic concludes that the proposed changes do not constitute a significant hazard.

Sections V & VI

Proposed Schedule for License Amendment Issuance and Effectiveness
And
Environmental Impact Assessment

V. PROPOSED SCHEDULE FOR LICENSE AMENDMENT ISSUANCE AND EFFECTIVENESS

North Atlantic requests NRC Staff review of License Amendment Request 02-03 and issuance of a license amendment by September 30, 2003, becoming effective immediately and implemented within 60 days thereafter. The requested date of September 30, 2003 is supportive of the next refueling outage scheduled in October 2003.

VI. ENVIRONMENTAL IMPACT ASSESSMENT

North Atlantic has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, nor increase the types and amounts of effluent that may be released off-site, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, North Atlantic concludes that the proposed changes meet the criteria delineated in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.