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	.0 1.42	≤109% of RTP*	≤111.1% of RTP*
b. Low Setpoint	8.3	4.56	~~0~~ 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. 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. Sourge Range, Neutron Flux	17.0	10.01	0	≤10^5 cps	≤1.6 x 10^5 cps
7. Overtemperature ΔT	6.5	3.31	1.04** +0.47**	See Note 1	See Note 2
8. Overpower ΔT	4.8	1.43	0.12	See Note 3	See Note 4
9. Pressurizer Pressure - Low	3.12	0.86	0.99	≥1945 psig	≥1,931 psig
10. Pressurizer Pressure - High	3.12	1.00	0.99	≤2385 psig	≤2,398 psig

*RTP = RATED THEMAL POWER

**The sensor error for T_{avg} is 1.04 and the sensor error for Pressurizer Pressure is 0.47. "As measured" sensor errors may be used in lieu of either or both of these values, which then must be summed to determine the overtemperature ΔT total channel value for S.

III. Retype of Proposed Changes

See attached retype of proposed changes to Technical Specifications. The attached retype reflects the currently issued version of 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.

Revision bars are provided in the right hand margin to designate a change in the text.

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IV. Safety Evaluation of License Amendment Request 93-17 Proposed Change

The proposed Technical Specification change is consistent with the Westinghouse setpoint methodology used in the original calculation of power range neutron flux high and low setpoints. The Westinghouse Protection System Setpoint Study was analyzed to determine the effect of including the inaccuracy and readout error of the percent full power meter. The inclusion of these inaccuracies changes the sensor error from zero to a value of 1.42 percent of span. A calculation was performed to determine the effect of these inaccuracies on the allowable value, the total allowance, the channel statistical accuracy, and on Z (the sum of the uncertainties which are not measured on a loop calibration). This calculation, which is avail able for review at Seabrook Station, demonstrated that with the exception of channel statistical accuracy, these values are unaffected.

The meter inaccuracies revise the channel statistical accuracy for the power range high neutron flux, from a value of 4.9 percent of span to 5.1 percent of span. However, this new value is within the total allowance of 7.5 percent of span for the power range neutron flux high setpoint and 8.3 percent of span for the power range neutron flux low setpoint. There is no physical modification to the plant related to this proposed change. The trip setpoints for the power range neutron flux high and low setpoints are unchanged.

The current method of performing the daily comparison of indicated power with the power value determined by calorimetric require the connection of a digital voltmeter to a test point on the front of the nuclear instrumentation cabinet. This introduces a potential for an inadvertent Reactor Protection System channel actuation caused by incorrect use of the voltmeter. The proposed Technical Specification change will eliminate the need to use a digital voltmeter when performing the daily comparison of reactor power level and adjustment of the summing and level amplifier gain by allowing the use of the percent full power meter that is installed on the front of the nuclear instrumentation cabinet. This proposed change thus enhances safe operation of the facility by minimizing the potential for a plant transient.

V. Determination of Significant Hazards for License Amendment Request 93-17 Proposed Changes

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

The purpose of the reactor trip system setpoints is to ensure the core and reactor coolant system do not exceed their safety limits during normal operation and design-basis anticipated operational occurrences, and to assist the Engineered Safety Features Actuation System in mitigating the consequences of accidents. The change in sensor error proposed by this License Amendment Request applies only to the power range neutron flux high and low range trips. The power range neutron flux high trip provides protection during power operations to mitigate the consequences of a reactivity excursion from all power levels. The power range neutron flux low trip provides protection during subcritical and low power operations to mitigate the consequences of a power excursion at low power.

The total allowance values for the power range neutron flux high and low trip setpoints provide an acceptable margin between the channel statistical allowance determined in the Westinghouse Protection System Setpoint Study and core safety limits. This total allowance is specified in Technical Specification 2.2, Limiting Safety System Settings, and in the Westinghouse Protection System Setpoint Study. A channel statistical allowance which is less than this total allowance is bounded by the setpoint study and does not increase the probability or consequences of an accident previously evaluated provided that the trip setpoint remains unaffected.

This proposed Technical Specification change assumes an increase in sensor error to account for inaccuracies associated with utilization of the percent full power meter that is permanently installed on the front of the nuclear instrumentation cabinet. The Westinghouse Protection System Setpoint Study was revised to determine the affect of the increased sensor error term on the channel statistical allowance. The increase from 4.9 to 5.1 percent of span, is still less than the total allowance values for both the power range neutron flux high and low setpoints as provided in Technical Specification Table 2.2-1.

The proposed change is intended to facilitate the daily comparison of indicated power and the power calculated from a calorimetric and to reduce the possibility of inadvertent Reactor Protection System channel actuation.

2. The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change does not affect the operation of the reactor protection system or the nuclear instrumentation system. The proposed change does not involve a modification to any plant component. The trip setpoint of the power range neutron flux high and low bistables are unchanged. A revision of the original Westinghouse Protection System Setpoint Study demonstrates that the new channel statistical accuracy is bounded by the total allowance values in Technical Specification 2.2.

The proposed change will reduce the possibility of inadvertent reactor protection system channel actuation when performing the daily power comparison and adjustment of summing and level amplifier gains required by Surveillance Requirement 4.3.1.1.

3. The proposed changes do not result in a significant reduction in the margin of safety.

The bases for Technical Specification 2.2 define the Total Allowance as the difference, in percent span, between the Trip Setpoint and the value used in the safety analysis for reactor trip. The values for Total Allowance of the power range neutron flux high and low trips are listed in Table 2.2-1 of Technical Specification 2.2 and are unaffected by the proposed changes. The utilization of the 1.42 percent of span sensor error increases the channel statistical accuracy from 4.9 percent of span to 5.1 percent of span. Since the revised channel statistical accuracy is less than the total allowance for both the power range neutron flux high and low trips, as provided in Technical Specification Table 2.2-1, the proposed changes do not result in a significant reduction in the margin of safety defined in its Bases. The changes will enhance plant operation by reducing the possibility of inadvertent Reactor Protection System channel actuation.

In view of the preceding, North Atlantic has determined that the Technical Specification changes proposed in License Amendment Request 93-17 do not involve a significant hazards consideration.

VI. Proposed Schedule for License Amendment Issuance and Effectiveness

North Atlantic requests NRC review of License Amendment Request 93-17 and issuance of a license amendment having immediate effectiveness by March 1, 1994.

VII. 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 hazard consideration, nor increase the types and amounts of effluent which may be released offsite, 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.

VIII. Supporting Information

Definition of terms in this proposed License Amendment.

DEFINITIONS

Channel Statistical Allowance - The total uncertainty for the instrument channel. In the Westinghouse Protection Setpoint Study, this is the root-sum-square of independent groups of uncertainties concerning the metering device (e.g. orifice or venturi), non-instrument related effects which can affect accuracy (e.g. temperature stratification), the sensor, the process rack, and the environmental effects on sensor/transmitter output from a limiting accident condition.

Readout Error - One half of the smallest division of the meter scale. For the percent full power meter this error is .5 percent of rated thermal power, or .42 percent of span.

Sensor Calibration Accuracy - The accuracy that can be expected during a calibration at reference conditions.

Sensor Drift - The change in sensor input/output relationship over a period time at reference conditions.

Sensor Error - The value of the error assumed in the setpoint calculation for the sensor drift and for accuracy of measuring the sensor drift.

Total Allowance - The difference, in percent span, between the trip setpoint and the value used in the analysis for the trip function (e.g. a safety limit).

Z - The statistical summation of errors assumed in the setpoint calculation excluding those associated with the sensor and rack drift and the accuracy of their measurements.