



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 1 TO FACILITY OPERATING LICENSE NO. NPF-56
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
SEABROOK STATION, UNIT 1
DOCKET NO. 50-443

1.0 INTRODUCTION/BACKGROUND

On July 8, 1988, Public Service Company of New Hampshire (PSNH) requested an amendment to the Technical Specifications for Seabrook Station, Unit 1 to change the setpoints for the pressurizer pressure, pressurizer water level, and steam generator water level channels as a result of replacing the Veritrak/Tobar transmitters with Rosemount transmitters. This request was supplemented by PSNH's submittal of August 8, 1988.

In early 1986 PSNH reported an excessive change in Veritrak transmitter accuracy as the ambient temperature changed from 80 to 130 degrees F. The transmitters in question, which provide inputs to the Reactor Protection System (RPS) were returned to Westinghouse for analysis and repair. Subsequent testing by Westinghouse on a larger sample of Veritrak units supplied by Tobar (formerly Veritrak) demonstrated calibration shifts in excess of manufacturer specified limits when the ambient temperature was varied from 90 to 320 degrees F. It was determined that these excessive changes observed in Veritrak transmitter accuracy as the ambient temperature changed could create a condition that could violate allowable technical specification limits.

Based on the test results from Westinghouse and available data on Veritrak/Tobar transmitters, the licensee increased the surveillance and calibration requirements for similar type class 1E units located inside containment which provide inputs to the RPS. Additionally, Westinghouse recommended that the licensee revise the trip setpoints for pressurizer low pressure and steam generator low-low level reactor trips. The Seabrook Technical Specifications now reflect these revised setpoints.

Because the increase in surveillance and calibration requirements lengthen the time the plant will need to remain in Mode 3 during startup and add to the workload of the station staff and because the existing Technical Specification setpoints have less margin to the operating range and thus increase the chance of unnecessary reactor trips, the licensee has decided to replace the affected transmitters with Rosemount transmitters to allow the additional surveillance and calibration requirements to be deleted and the setpoints relaxed.

2.0 EVALUATION

As stated above, the Veritrak/Tobar transmitters experienced temperature compensation shifts in excess of their specified values; therefore, the calibration frequency of the transmitters was increased and the trip setpoints were revised and set more conservatively. This results in an increase in the probability of unnecessary plant trips.

The Rosemount transmitters replace the Veritrak/Tobar Class 1E transmitters that provide steam generator level, pressurizer level and pressurizer/pressure inputs to the SSPS. The licensee has determined that the replacement Rosemount transmitters are being used extensively in other operating nuclear power plants and have a proven history of successful operation while performing within stated accuracy limits. Also, these Rosemount transmitters are environmentally and seismically qualified for their locations inside containment at Seabrook Station.

The staff review and evaluation of the technical specification changes reflecting the above replacement transmitters and the reasons for requesting these changes has led to the conclusion that the proposed changes will not:

1. Significantly increase the probability or consequences of any accident previously evaluated. The basis for this determination is: (1) the replacement Rosemount transmitters are environmentally and seismically qualified for the service intended, (2) these replacement units have a proven history of successful operation under similar applications at other nuclear power plants, and (3) the protection system setpoints were developed by calculating the instrument channel statistical allowance using the previously NRC approved Westinghouse methodology and applying this to the FSAR Chapter 15 accident analysis limit.
2. Involve a significant reduction in a margin of safety at the Seabrook Station. For example, the licensee submittal of July 8, 1988 shows that when compared to the calculated values, the steam generator low-low level setpoint is conservative and the margin between the total allowance and the channel statistical allowance is increased for this replacement transmitter application. This is also the case when comparing the calculated values to the low pressurizer pressure reactor trip setpoint, the low pressurizer pressure safety injection setpoint, and the high pressurizer pressure reactor trip setpoint.

To summarize, the proposed change provides new values for Total Allowance (TA), Statistical Summation of Errors (Z), Trip Setpoint, and Allowable Value for the replacement transmitters in the Seabrook Technical Specification Tables 2.2-1 (Reactor Trip System Instrumentation Setpoints) and 3.3-4 (Engineered Safety Features Actuation System Instrumentation Setpoints). The steam generator water level low-low value is also revised in Specification 4.4.1.2.2, 4.4.1.3.2, and 3.4.1.4.1, to be consistent with the setpoints.

The staff has reviewed the pages of the Seabrook Station Technical Specifications which are being revised to reflect the proposed changes as discussed herein and the reasons given for requesting these changes as presented in Enclosure 2 to the licensee's submittal dated July 8, 1988. Based on this review the staff believes that the proposed changes meet the requirements and follow the guidelines as shown in the Standard Review Plan for instrumentation associated with the RPS and the associated safety limits present in Chapter 15 of the Seabrook Station FSAR. Therefore, the proposed changes, as stated, are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

The staff has evaluated the licensee's request to revise the Technical Specifications to change the technical specification setpoints for the pressurizer pressure, pressurizer water level, and steam generator water level channels as a result of replacing the Veritrak/Tobar transmitters with Rosemount transmitters.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security nor to the health and safety of the public.

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Dated: September 27, 1988