



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 7 TO FACILITY OPERATING LICENSE NO. NPF-86

NORTH ATLANTIC ENERGY SERVICE CORPORATION

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

1.0 INTRODUCTION

On July 29, 1992, North Atlantic Energy Service Corporation informed NRC that the 18-month surveillance testing program for the reactor trip breakers and bypass breakers may not have adequately tested the operability of the shunt trip circuitry for the manual reactor trip function of the reactor trip breakers pursuant to Surveillance Requirement 4.3.1.1. The NRC orally granted the licensee's request to temporarily waive compliance with the Technical Specification 4.3.1.1, Table 4.3-1, pertaining to the verification of the operability of the shunt trip circuitry for the manual reactor trip function. By letter dated August 4, 1992, NRC confirmed granting of the waiver request to allow operation without performance of the Trip Actuating Device Operation Test (TADOT) of the shunt trip circuitry for the manual reactor trip function until startup from the first planned or unplanned shutdown, to Mode 5 or lower, occurring after July 30, 1992. By letter dated August 3, 1992, the licensee submitted a request for an exigent Technical Specification change. The proposed exigent Technical Specification (TS) change adds a one time footnote to the Technical Specification Surveillance Requirement 4.3.1.1, Table 4.3-1, Table Notation 13, which defines the schedule for complete verification of operability of the shunt trip circuitry for the manual reactor trip function.

2.0 EVALUATION

The current TS Surveillance Requirement 4.3.1.1, Table 4.3-1, Functional Unit 1 (Manual Reactor Trip) requires that a TADOT on manual reactor trip function be performed each refueling outage. The current surveillance procedure (OX1410.04) utilized by the licensee for testing the manual trip function does not adequately verify that the reactor trip breakers and reactor trip bypass breakers have electric continuity between the shunt trip coil and manual reactor trip switches located on the main control board. This procedure requires verification that the proper voltage is applied to the shunt trip coil's when the main control board manual reactor trip and manual safety injection switches are actuated; however, the procedure does not consider that the proper voltage may be present due to the existence of a voltage path through the main control board indicating lights to the shunt trip coil. This

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations and past practice, the New Hampshire and Massachusetts State officials were notified of the proposed issuance of the amendment. The State officials had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The LIRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (57 FR 37848). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

### 5.0 CONCLUSION

The staff has reviewed the licensee's evaluation of the impact of the proposed TS change to TS 4.3.1.1. The evaluation concluded that the one-time exception that delays performance of the testing requirement would have a minimal effect on plant safety. The staff finds the evaluation and conclusions acceptable.

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: September 30, 1992

procedure is inconsistent with the intent of Surveillance Requirement 4.3.1.1, Table 4.3-1, Functional Unit 1. This procedure, however, fully and independently tests the undervoltage trip feature of the reactor trip breakers and reactor trip bypass breakers from the main control board manual reactor trip switches.

The licensee is revising procedure OX1410.04 to require independent testing of the shunt trip feature of the reactor trip breakers and reactor trip bypass breakers to ensure a full test of the shunt trip circuit from the main control board manual reactor trip switch and manual safety injection switch to the shunt trip coil. This will require removal of the indicating lights during performance of the shunt trip coil voltage measurement to ensure proper test of the shunt trip circuitry.

Due to the complexity of this new testing, the licensee feels that it would not be prudent to conduct such a test during power operation. The licensee has proposed to perform the Surveillance Requirement 4.3.1.1 during the upcoming refueling outage which begins on September 7, 1992, or the next time the plant enters Mode 3 or lower, whichever comes first. The proposed exigent one time TS change adds a footnote to Surveillance Requirement 4.3.1.1, Table 4.3-1, Table Notation 13, stating the following:

"Complete verification of OPERABILITY of the shunt trip circuitry shall be implemented prior to startup from the first planned or unplanned shutdown, to MODE 3 or lower, occurring after July 30, 1992."

In the interim, the licensee would take the following compensatory action if the reactor trip breakers do not open on manual reactor trip actuation.

1. Initiate manual rod insertion
2. Initiate emergency boration, and
3. Open the reactor trip breakers locally and de-energize the motor generator sets.

Based on the above, the staff concludes that the one-time exception that delays performance of the testing requirement would have a minimal effect on plant safety. The staff noted that the only feature which has not been adequately tested is an independent test of the shunt trip circuitry from the main control board manual reactor trip switch and manual safety injection switch to the shunt trip coil. The ability of the reactor solid state protection system to initiate a reactor trip via the undervoltage coil and indirectly energize the shunt trip coil has properly been verified. In the unlikely event that a manual trip is required, the de-energization of the undervoltage relay would cause the reactor trip breakers to open. Therefore, the proposed TS revision to perform Surveillance Requirement 4.3.1.1 pertaining to the TADOT of the shunt circuitry for the manual reactor trip function the next time the plant enters Mode 3 or lower, is acceptable.