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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 61

TO FACILITY OPERATING LICENSE NO. NPF-49

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

1.0 INTRODUCTION

By letter dated January 18, 1991, as supplemented by letters dated April 5, 1991 and April 8, 1991, the Northeast Nuclear Energy Company, (the licensee) submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 3 Technical Specifications (TS).

The proposed amendment would change Technical Specification (TS) 4.6.4.2.b.4, "Electric Hydrogen Recombiners," and would add the following note to the pressure - dependent flow requirements for the hydrogen recombiners in TS Figure 3.6-2:

> Until September 30, 1991, a flow rate of 72.4 scfm or greater at a pressure of 14.5 to 14.8 psia is acceptable in lieu of the values indicated by Figure 3.6-2.

The licensee also requested that the NRC staff issue a temporary waiver of compliance (TWC) to be effective until such time as the NRC staff could act on the licensee's application. The NRC staff has previously issued a proposed no significant hazards consideration determination on the January 18, 1991 application which was published in the Federal Register on April 3, 1991 (56 FR 13666). The April 5, 1991 and April 8, 1991 supplements, however, substantially changed the proposal contained in the January 18, 1991 application.

2.0 DISCUSSION

On March 26, 1991, as a part of the 18-month surveillance test, a functional test of the Millstone Unit No. 3 hydrogen recombiner (A) was performed using the acceptance criterion included in TS 4.6.4.2.b.4. The test results indicated that the hydrogen recombiner was capable of delivering a flow rate of approximately 74.5 scfm at a containment pressure of 14.77 psia. This represents a failure to meet the acceptance criterion of TS Figure 3.6-2, which is a pressure dependent flow curve, by approximately 2 scfm. On April 2, 1991, NNECO performed the same test on hydrogen recombiner (B). The test results indicate that the hydrogen recombiner (B) is capable of delivering a flow rate of approximately 72.8 scfm at 14.725 psia whereas the required flow rate at that

pressure is 75 scfm. Millstone Unit 3 is provided with two 100 percent capacity electric hydrogen recombiners which are designed to process the post-LOCA containment atmosphere to maintain the hydrogen concentration at a safe level (below 4 percent). Based on these test results, NNECO could not verify the operability of both the hydrogen recombiners using the acceptance criterion included in Figure 3.6-2. Therefore, on April 2, 1991, NNECO informed the staff of the current situation and NNECO's plan to request that the NRC staff process a license amendment on an emergency basis.

Since the issuance of TS Figure 3.6-2 on March 2, 1990 (License Amendment 47), new technical information has been received, by NNECO, from the hydrogen recombiner blower manufacturer, M-D Pneumatics, which indicates that the information used to generate Figure 3.6-2 was not appropriate and was overly conservative. This has resulted in the recent test failures. Figure 3.6-2 was developed using generic information for this type of blower. NNECO's letter of April 5, 1991, as supplemented by letter dated April 8, 1991, proposed that the following footnote be added to TS Figure 3.6-2:

> Until September 30, 1991, a flow rate of 72.4 scfm or greater at a pressure of 14.5 to 14.8 psia is acceptable in lieu of the values indicated by Figure 3.6-2.

3.0 EVALUATION

Hydrogen recombiner (A) passed the surveillance test as required by the current TS, as a result of subsequent testing. Recombiner (B) fell short of the TS flow rate requirement by only 2% when it was tested. The licensee's analysis shows that there is substantial margin between the flow rate required by the current TS and the flow rate that would actually be required during a LOCA for the recombiner to fulfill its design function. Although the staff has not completed a detailed review of the licensee's analysis, there is reasonable assurance that the small shortfall in flow rate has not rendered the recombiner inoperable. The proposed TS reduces the required flow rate slightly and thus would allow the licensee to declare both recombiners to be operable, having satisfied the new surveillance acceptance criteria. Therefore, for the relatively short time period allowed by the proposed TS, and considering the relatively low probability of a LOCA occurring during that period, the staff finds that the proposed TS is acceptable.

4.0 EMERGENCY CIRCUMSTANCES

The licensee, in its January 18, 1991 application as supplemented by letters dated April 5, 1991 and April 8, 1991, requested that, pursuant to 10 CFR 50.91(a)(5), the proposed TS change be approved on an emergency basis. The licensee stated that emergency approval is needed because "...an emergency

situation exists, in that failure to act in a timely way would result ... in shutdown of a nuclear power plant," the situation could not have been avoided and because the proposed amendment does not involve a significant hazards consideration. As stated in Section 2.0 of this safety evaluation, the licensee identified the concern associated with the hydrogen recombiner flow testing and made every reasonable attempt to resolve these concerns prior to requesting an emergency license amendment.

The licensee was granted a TWC from the requirements of TS 4.6.4.2.b.4 on April 9, 1991 to allow Millstone Unit 3 to resume power operation following the refueling outage. In granting the Temporary Waiver of Compliance, the NRC staff recognized that emergency circumstances existed that warranted prompt approval in that failure to act would result in extending the Millstone Unit 3 shutdown, that the situation could not have been avoided, and that the licensee promptly applied for the amendment. Thus, pursuant to 10 CFR 50.91(a)(5), the staff finds that an emergency situation exists which would result in extending the plant shutdown.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that the license amendment involves no significant hazards consideration if operation of the facility, in accordance with the amendment, would not:

1. Involve a significant increase in the probability or consequences of an accident previously analyzed.

   The proposed changes to Section 4.6.4.2.b.4 will continue to verify the capability of the hydrogen recombiners to meet design basis analysis assumptions. The appropriate plant procedures are in place to ensure that the hydrogen recombiners are placed in service within 24 hours of a LOCA. Therefore, it is concluded that the LOCA and its consequences as analyzed remain valid. Since no physical modifications are proposed, there is no impact on the probability of failure. Therefore, probability of a LOCA is not affected.

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

   The proposed changes do not impact the plant response to a LOCA. Since there are no changes in the way the plant is operated, the potential for an unanalyzed accident is not created, and no new failure modes are introduced.

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

   The proposed changes do not increase the consequences of any accidents. Also, none of the protective boundaries are adversely affected. The performance level of the hydrogen recombiners assured by the proposed

surveillance requirements along with the appropriate plant procedures maintain the margin of safety as defined in the existing and proposed Technical Specifications.

Accordingly, the NRC staff concludes that the proposed amendment involves no significant hazards considerations.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Connecticut State official was notified of the proposed issuance of the amendment. The State official had no comments.

7.0 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. The NRC 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 made a final no significant hazards consideration determination with respect to this amendment. 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.

8.0 CONCLUSION

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: April 22, 1991