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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 19 TO FACILITY OPERATING LICENSE NO. NPF-69

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-410

INTRODUCTION

By letter dated November 17, 1989, as amended April 26, 1990, Niagara Mohawk Power Corporation (the licensee) proposed changes to the Technical Specifications for Nine Mile Point Unit 2. The proposed amendment revises Technical Specification 4.7.5 which provides the surveillance requirement for snubbers installed at Nine Mile Point Unit 2.

The American Society of Mechanical Engineers (ASME) standard on snubber testing, OMc-1990, Part 4, contains two sample plans for inservice functional testing of snubbers. The two sample plans, when compared to the three sample plans currently contained in Technical Specification Section 4.7.5.e, provide reduced testing and a corresponding reduction in man-rem exposure while still providing adequate assurance of snubber reliability. Section 4.7.5.e has, therefore, been modified in accordance with ASME/ANSI OMc-1990, Part 4. The proposed amendment also revises the functional test failure analysis in Technical Specification Section 4.7.5.g to add unexpected transient events as a cause of locked-up snubbers.

BACKGROUND

As this and the following statements from the licensee's submittal indicate, the first of three technical specification sampling plans, the "10 percent plan," described in Specification 4.7.5.e(1) requires 10% of the snubbers to be tested periodically. It requires testing of an additional 10% of the snubbers for each snubber not meeting the acceptance criteria of Specification 4.7.5.f. The proposed change modifies this plan to require only a 5% additional testing for each snubber that fails functional testing as opposed to 10% additional testing presently required. Reducing the percentage of snubbers to be retested does not undermine the effectiveness of this surveillance. The initial test sample remains the same and is sufficient to provide an adequate sampling of the snubbers. This change will reduce the amount of additional testing required and thus reduce man-rem exposure and safety concerns associated with unnecessary functional testing. This change is consistent with the ASME OMc-1990, Part 4, document.

The second sampling plan, the "37 plan," described in Specification 4.7.5.e(2) requires that a representative sample of snubbers be tested periodically in accordance with Figure 4.7.5-1. Figure 4.7.5-1 provides the acceptance criteria method for the functional test results and denotes a "reject" region and a "continue testing" region. If at any time the plotted test results fall within this "reject" region, then all snubbers are to be functionally tested. The proposed change revises surveillance requirement Specification 4.7.5.e(2) and Figure 4.7.5-1 to delete the "reject" region and substitute an expanded "continue testing" region.

With the deletion of the "reject" line, plotting of results by lot or individual basis becomes a moot point because snubbers must continue to be tested until the point falls into the "accept" region or until all snubbers have been tested.

If testing continues to between 100-200 snubbers and the accept region has not been attained, then the actual percent of population quality (number of snubbers not found to meet acceptance criteria)/(total snubber population) would be used to indicate the probability of extended or 100 percent testing. A population quality of greater than or equal to 5% failed snubbers will probably result in extended testing. The proposed change also deletes references to the "reject" region in the test of Technical Specification 4.7.5.e(2).

Figure 4.7.5-1 as it appears in the technical specification was developed using "Wald's Sequential Probability Ratio Plan." Statistical studies using Wald's sequential sampling plan indicate that a major change in the reject line caused an insignificant change in the accept line or, in other words, acceptance is independent of rejection. These studies also demonstrate that while the probability of false acceptance of a bad snubber population under the proposed amendment still exists, it is negligible. As long as the "reject" line remains in the sample plan there is some possibility of rejecting a good snubber population and consequently requiring an unnecessary 100% functional testing of snubbers with attendant ALARA and safety concerns, manpower utilization and outage extension. The proposed technical specification change will alleviate these problems and still ensure continued or additional testing if snubber quality of failed snubbers is equal to or greater than 5%. These changes have been previously evaluated by the NRC through ANSI/ASME OMc-1990, Part 4, participation and by granting similar technical specification changes.

The third sampling plan, the "55 plan," described in Specification 4.7.4.e(3) also requires that a representative sample of snubbers be periodically tested. Deleting the "Reject" line from the "37 plan" is not a Wald sequential plan and, as such, has been deleted from the ANSI/ASME OMc-1990, Part 4, document.

The proposed change clarifies additional functional testing requirements due to failure of snubbers. Technical Specification 4.7.5.e states that if during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional test results shall be reviewed at that time to determine if additional samples should be limited to the type of

snubber which has failed the functional testing. The proposed change allows categorization of unacceptable snubbers into failure mode groups. A test failure mode group shall include all unacceptable snubbers that have a given failure mode and all other snubbers subject to the same failure mode. It allows independent testing of failure mode groups based on the number of unacceptable snubbers and requires one additional test sample from the general population for each failure mode group to provide assurance that failure mode groups have been properly established. This change is consistent with the ASME OMc-1990, Part 4, document.

The proposed change also addresses the functional test failure analysis of locked-up snubbers. Technical Specification 4.7.5.g states that if the cause of the locked-up snubbers is due to manufacturer or design deficiency, all snubbers of the same type subject to the same defect shall be functionally tested. The proposed change includes unexpected transient events as a cause of locked-up snubbers in addition to manufacturer or design deficiency. All locked snubbers shall be replaced or repaired to original qualified condition.

Tested snubbers of the same type subject to the same defect are treated as one failure mode group. One additional test sample from the general population is required to provide assurance that the deficiency or transient event has been properly defined.

Additionally the proposed amendment will replace the title "Inspection Types" currently used in Technical Specification Section 4.7.5.a with "Snubber Types" to be consistent with the terminology used in Technical Specification Section 4.7.5.a. This change is administrative in nature and is, therefore, acceptable.

EVALUATION

The NRC staff has concluded based on staff review and on the considerations discussed above that the proposed changes to Technical Specification Section 4.7.5.e are acceptable. These changes would result in reduced testing and a corresponding reduction in man-rem exposure while providing adequate assurance of snubber reliability. They are also consistent with the ASME/ANSI OMc-1990, Part 4, document. The staff also finds the proposed change to Technical Specification Sections 4.7.5.a and 4.7.5.g to be acceptable.

The licensee's initially proposed change to TS 4.7.5.b to make the term "first refueling outage" more specific by adding "18 months (±25%)" was withdrawn by letter dated April 26, 1990. The staff finds this to be acceptable and the second inspection shall be performed at the first refueling outage.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to the installation or use of the facility components located within the restricted areas as defined in 10 CFR 20 and changes to the surveillance requirements. The staff has determined that this 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 Sec 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.

CONCLUSION

We have 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: July 13, 1990

PRINCIPAL CONTRIBUTOR:

J. Rajan