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

ENCLOSURE 1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REGARDING NIAGARA MOHAWK POWER CORPORATION'S

120-DAY RESPONSE TO SUPPLEMENT NO. 1 TO GENERIC LETTER 87-02

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT NO. 1

DOCKET NO. 50-220

1.0 INTRODUCTION

By letter dated September 18, 1992, the Niagara Mohawk Power Corporation, the licensee, submitted its response to Supplement No. 1 to Generic Letter (GL) 87-02, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46," dated May 22, 1992, for the Nine Mile Point Nuclear Station Unit No. 1 (NMP-1). In this supplement, the NRC staff requested that the licensee submit the following information within 120 days of the issue date of the supplement:

1. A statement whether you commit to use both the Seismic Qualification Utility Group (SQUG) commitments and the implementation guidance provided in the Generic Implementation Procedure, Revision 2 (GIP-2) as supplemented by the staff's Supplemental Safety Evaluation Report No. 2 (SSER No. 2) for the resolution of USI A-46. In this case, any deviation from GIP-2, as supplemented by the SSER No. 2, must be identified, justified, and documented. If you do not make such a commitment, you must provide your alternative for responding to GL 87-02.

2. A plant-specific schedule for the implementation of the GIP and submission of a report to the staff that summarizes the results of the USI A-46 review, if you are committing to implement GIP-2. This schedule shall be such that each affected plant will complete its implementation and submit the summary report within 3 years after the issuance of the SSER No. 2, unless otherwise justified.

3. The detailed information as to what procedures and criteria were used to generate the in-structure response spectra to be used for USI A-46 as requested in the SSER No. 2. The licensee's in-structure response spectra are considered acceptable for USI A-46 unless the staff indicates otherwise during a 60-day review period.

In addition, the staff requested in SSER No. 2 that the licensee inform the NRC staff in the 120-day response if it intends to change its licensing basis to reflect a commitment to the USI A-46 (GIP-2) methodology for verifying the

seismic adequacy of mechanical and electrical equipment, prior to receipt of the NRC staff's plant-specific safety evaluation resolving USI A-46. This report provides the NRC staff's evaluation of the licensee's response.

2.0 EVALUATION

With regard to Item 1, the licensee stated that, "For resolution of USI A-46 at NMP-1, Niagara Mohawk commits to use the SQUG methodology documented in Revision 2 of the GIP, as corrected on February 14, 1992, (GIP-2) including the clarifications, interpretations, and exceptions identified in SSER-2 as clarified by the August 21, 1992, SQUG letter responding to SSER-2 with the following exception:

> "The GIP, Part II, Section 3.3.8, 'Instrumentation,' specified the scope of instrumentation which should be identified for seismic evaluation; namely instruments which measure the primary process variables of reactor reactivity, reactor coolant pressure, reactor coolant inventory, and decay heat removal. Niagara Mohawk does not plan to identify or evaluate instrumentation used to monitor reactor reactivity for NMP-1 as a part of the resolution of USI A-46. Instead, the neutron monitoring system used at NMP-1 will be evaluated as a part of the generic program to comply with Regulatory Guide (RG) 1.97, Revision 2, 'Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident.' The NRC's letter to Niagara Mohawk dated November 19, 1986, and the enclosed Safety Evaluation Report (SER) related to conformance to RG 1.97. The NRC letter and SER accepted interim use of the existing neutron monitoring system at NMP-1 until an acceptable alternative was developed. Currently, Niagara Mohawk is participating in the Boiling Water Reactor Owners Group RG 1.97/Neutron Monitoring System Committee to resolve this issue."

The NRC staff has reviewed this exception and agrees that the neutron monitoring system used at NMP-1 will be evaluated as a part of the generic program to comply with RG 1.97, Revision 2. As noted in the GIP-2 and accepted by the NRC staff in the SSER No. 2, meeting the seismic commitments agreed to with the NRC staff regarding RG 1.97, Revision 2 will fully resolve USI A-46 for that equipment. Therefore, this exception is acceptable to the NRC staff.

The NRC staff recognizes that the licensee has chosen to implement GIP-2, as corrected on February 14, 1992, including both the SQUG commitments and the implementation guidance, and as supplemented by SSER No. 2, for responding to GL 87-02. The NRC staff finds that this is an acceptable method to resolve USI A-46 at NMP-1. However, Enclosure 2 provides the NRC staff's response,

dated October 2, 1992, to the August 21, 1992, SQUG letter. The NRC staff does not concur with all of the SQUG's clarifications and positions stated in that letter, and thus, the licensee should not only use the August 21, 1992, letter as guidance in responding to Supplement No. 1 to GL 87-02. The licensee should also refer to Enclosure 2 for the staff's position on the SQUG letter.

The licensee stated that, in February of 1988, a trial plant walkdown was conducted at NMP-1, in accordance with the procedures in Revision 0 of the GIP, to evaluate the SQUG methodology and procedures for verification of the seismic adequacy of mechanical and electrical equipment. Additional walkdowns and equipment evaluations were conducted in 1989 in accordance with Revision 1 of the GIP. The licensee indicated that it plans to use the results of these walkdowns and equipment evaluations, and supplement this information with additional walkdowns and evaluations to the extent necessary to meet the provisions of GIP-2. In addition, the licensee stated that the results of the previous seismic evaluations of equipment will be reconciled with the new in-structure response spectra generated for USI A-46 reviews at NMP-1. The NRC staff finds that this is acceptable. It is noted that, although the SQUG trial plant walkdown at NMP-1 was observed (not audited as stated in the licensee's response to Supplement No. 1 to GL 87-02) by NRC representatives, the NRC staff did not review the detailed results of these walkdowns, nor did the NRC staff reach any conclusions regarding the validity of all of the observations and judgements made by the seismic review teams.

With regard to Item 2, the licensee stated that it will complete the implementation of the GIP and submit a summary report to the NRC summarizing the results of the USI A-46 program at NMP-1, within the 3-year period requested by the NRC staff. The NRC staff finds that this is an acceptable schedule.

With regard to Item 3, our review to date has disclosed that NMPC did not provide sufficient information regarding the development of the ground response spectrum (GRS) and the in-structure response spectra (IRS). Therefore, NMPC is requested to provide the following additional information within 60 days of receipt of this letter.

1. Provide information related to the type of GRS and the origin of time histories, damping value, etc. used for developing the original licensing basis design GRS for the safe shutdown earthquake (SSE).

2. NMPC states that a new seismic design GRS for NMP-1 was developed in 1984 using the methodology presented in NUREG/CR-0098, and proposes to use the new GRS for the resolution of the USI A-46 issue at NMP-1. Provide information showing that the GRS generated in conjunction with the use of NUREG/CR-0098 is consistent with the original plant licensing basis. Also, discuss the procedure used to generate the GRS.

3. NMPC states that the four sets of artificial time histories were used for developing IRS. Although NMPC mentioned that each time history has three statistically independent components (one vertical and two horizontal), NMPC did not indicate whether the time history analysis accounted for the effects of the three components of each earthquake motion in generating the GRS and the IRS as described in the Standard Review Plan, Section 3.7.2 (e.g., the square root of the sum of the squares method, etc.). Provide detailed information in this regard with the origins of four sets of artificial time histories, the damping values used, etc.

4. NMPC states that the average of the calculated GRS from the four sets of time histories envelops the licensing basis design GRS. Provide justification and documentation, which form the basis that the average of the calculated GRS from the four sets of time histories is more conservative than the licensing basis design GRS. Also, provide damping values used in the analysis, the calculated average GRS, four individual GRS of the four time histories, and the licensing basis design GRS.

It is noted that the licensee did not indicate in its submittal that it intended to change its licensing basis to reflect a commitment to the USI A-46 methodology prior to receipt of the staff's plant-specific SERs.

3.0 CONCLUSIONS

The staff finds that the licensee's commitment to implement GIP-2, including the clarifications, interpretations and exceptions identified in SSER No. 2, is an acceptable method for resolving USI A-46 at NMP-1. However, the licensee should not only follow the August 21, 1992, SQUG letter for implementing GIP-2, but should refer to Enclosure 2 for the staff's response to the SQUG letter.

The staff finds acceptable the licensee's approach for implementing GIP-2, which consists of: (1) use walkdown information and equipment evaluations from the SQUG trial walkdown conducted at NMP-1 in 1988 and the additional walkdowns conducted in 1989, (2) supplement this information with additional walkdowns and seismic evaluations to the extent necessary to meet the provisions of GIP-2, and (3) reconcile the results of the previous equipment evaluations with the new in-structure response spectra generated for USI A-46 equipment reviews.

The implementation schedule proposed by the licensee is within the 3-year response period requested by the staff in Supplement No. 1 to GL 87-02 and is therefore acceptable.

The licensee's exception to the guidance provided in GIP-2, Part II, Section 3.3.8, "Instrumentation" is acceptable since the neutron monitoring system will be evaluated as a part of the generic program to comply with RG 1.97, Revision 2.

The acceptability of the licensee's response to the enclosed request for additional information regarding the development of the ground response spectrum and the in-structure response spectra will be addressed in a supplemental safety evaluation following receipt and evaluation of the requested information.

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