November 9, 1995

Mr. B. Ralph Sylvia
Executive Vice President, Nuclear
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
P.O. Box 63
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION UNIT NO. 1 - REQUEST FOR ADDITIONAL INFORMATION (TAC NO. M89792)

Dear Mr. Sylvia:

In your letter dated June 23, 1994, you indicated plans to use an automated ultrasonic testing inspection technique instead of periodic testing with respect to feedwater nozzles and control rod drive return line nozzles. The purpose of this letter is to request additional information related to your plans.

In order to complete our review, we require the enclosed additional information. This information was discussed with Mr. D. Baker of your staff on November 7, 1995.

This requirement affects 9 or fewer respondents and, therefore, is not subject to Office of Management and Budget Review under P.L. 96-511.

Please provide your response within 30 days so that we can continue our review.

Sincerely,

Original signed by:
Gordon E. Edison, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-220

Enclosure: Request for Additional Information

cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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B. Ralph Sylvia
Niagara Mohawk Power Corporation

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Lycoming, NY 13093

REQUEST FOR ADDITIONAL INFORMATION FOR

NINE MILE POINT NUCLEAR STATION UNIT NO. 1

The following information and/or clarification is needed to complete the NRC staff review. The review has been organized into three parts. The first deals with establishing the capabilities of detecting and sizing cracks, the second deals with establishing the validity of modeling, and the third deals with establishing the fracture mechanics.

1. Establishing the capabilities of detecting and sizing cracks:

   a. Identify the areas of the nozzles that could be missed because of physical interferences or areas in which the transducer angles may not be optimized to detect and size shallow cracks.

   b. Provide a copy of the ultrasonic test (UT) procedure that NMPC will use for the inner-radius examination. If not part of the procedure, identify the detection and sizing techniques that NMPC will be using.

      1) Identify the demonstration NMPC is using for the qualification demonstration of the GERIS-2000. Describe any deviations NMPC made from the GE procedure.

      2) Describe how cracks originating from a grind-out or any other condition unique to NMPC would be detected and sized.

      3) Describe the acceptance criteria for the UT inspections, including how these criteria equate to the GE qualification demonstration. Discuss sensitivity and changes in sensitivity during the examination. How do these sensitivity settings compare with the settings used during the GE qualification demonstration?

   c. Describe any blind examinations performed using the GERIS-2000 equipment (by GE, NMPC, and/or the UT examiner) and/or NMPC's UT procedures that are applicable to the NMPC inner-radius feedwater nozzle-to-vessel and control rod drive return line (CRDRL) nozzle-to-vessel configurations. Include a discussion on false calls.

   d. Discuss the indications detected during the 1995 RFO-13. Include noninnocuous indications that were detected, as well as indications that were observed in previous examinations.

   e. Describe when manual UT would be used to supplement the GERIS-2000 examination, along with the appropriate technique.

Enclosure

2. Establishing the validity of modeling.

   a. Describe the extent to which modeling is being used for the preparation and implementation of the UT examination, that is, the percentage of coverage, transducer selection, flaw characterization, and so on.

   b. What is the limiting "mis-orientation" (the maximum acceptable angle from ideal for a returning signal) angle being used? How was the angle established? Identify the transducers being used and provide coverage maps or a composite coverage map. Describe the locations and the percentage of examination for the areas that will exceed the limiting "mis-orientation" angle.

   c. Describe the differences between the model and the NMPC configuration. Explain how the model was verified for accuracy. Explain how the model is representative of the NMPC configuration.

3. Establishing the fracture mechanics.

   a. Identify which zone in Figure 1, page 4 of Enclosure 3 (Technical Basis for Utilization ...), of your June 23, 1994, submittal has the largest sizing tolerance and explain the effects of the tolerance on fracture mechanics calculations.

   b. Compare the operational history (startup-shutdown cycles and feedwater thermal transients) with GE's generic duty cycle.

   c. In the analysis of the CRDRL, identify the stresses used for computing cyclic crack loads.