

50-220



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

August 19, 1998

Mr. John H. Mueller
Chief Nuclear Officer
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
Operations Building, Second Floor
P.O. Box 63
Lycoming, NY 13093

SUBJECT: CLOSURE OF TAC NO. M94462 REGARDING GENERIC LETTER 94-02, NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

Dear Mr. Mueller:

On July 11, 1994, the NRC issued Generic Letter (GL) 94-02, "Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal-Hydraulic Instabilities in Boiling Water Reactors." GL 94-02 requested each licensee to take appropriate actions for responding to thermal-hydraulic instabilities and to submit a plan describing the long-term stability solution option selected and the associated implementation schedule. The NRC staff initiated TAC No. M94462 to provide for review of the response by Niagara Mohawk Power Corporation (NMPC) for Nine Mile Point Nuclear Station, Unit No. 1 (NMP1).

NMPC responded by letter dated September 8, 1994, indicating that Boiling Water Reactor Owners' Group (BWROG) solution Option II (the Quadrant-Based Average Power Range Monitors (APRM) Scram delineated in General Electric's document NEDO-31960, "BWR Owners' Group Long-Term Stability Solutions Licensing Methodology") had been chosen to initiate a reactor scram on NMP1 in the event of reactor core oscillations sufficient to challenge the Minimum Critical Power Ratio (MCPR) safety limit. By letter dated October 2, 1995, NMPC provided a topical report containing plant-specific analyses for NMP1, indicating the ability of the quadrant-based APRM system to detect and suppress oscillations. Specifically, the topical report, GENE-A13-00360-02, "Application of Stability Long-Term Solution Option II to Nine Mile Point Nuclear Station Unit 1," documented the application of Stability Long-Term Solution Option II methodology to NMP1 by presenting Option II application calculations to demonstrate that the quadrant-based APRM trip system, with restrictions on the flow-biased APRM trip setpoints and MCPR operating limits, provides protection of the MCPR safety limit for anticipated reactor instability. This topical report presented calculations that define a Restricted Region on the power/flow operating map to prevent the occurrence of reactor instability, and noted that plant operation is administratively controlled to avoid entrance into the Restricted Region.

The analyses in GENE-A13-00360-02 were based upon an APRM flow-biased setpoint that differs from the setpoint currently specified in the NMP1 Technical Specifications (TSs) to limit the associated critical power ratio. NMPC's letter of December 15, 1995, indicated that the APRM analog trip biased units would be replaced with new digital Flow Control Trip Reference (FCTR) cards similar to those developed by BWROG Enhanced Option I-A to cope with the increased complexity of the trip function settings.

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Mr. John H. Mueller

By letter dated October 9, 1997, NMPC provided its schedule, which is to have the FCTR cards operational to implement Stability Solution Option II by September 30, 1998. This schedule permits NMPC to: (1) finalize the required plant documentation, (2) submit an application for license amendment to revise the APRM setpoints in the TSs consistent with the NMP1 analyses, and (3) receive NRC approval of the TS change. NMPC's letter of July 31, 1998, informed the NRC staff that the application for license amendment to change the TS will be submitted in the near future. Until the Option II solution is fully implemented, corrective actions currently in place to address potential reactor instabilities will remain in place. The July 31, 1998, letter also stated that the Restricted Region (which in GENE-A13-00360-02 is based upon Cycle 12 inputs) will be maintained following implementation of the pending license amendment, and its validity will be either confirmed each subsequent reload or a new Restricted Region calculated.

The NRC staff has completed the review of GENE-A13-00360-02 and your NMP1 letters responding to GL 94-02. Enclosure 1 is the NRC staff's safety evaluation which finds GENE-A13-00360-02 to be acceptable for use by NMP1 subject to conditions to which you have agreed. The staff concludes that your submittals constitute an acceptable basis for implementing Option II for NMP1. Full implementation will require NRC staff approval of associated TS changes reflecting hardware setpoints. The staff's review was completed with the technical assistance of a consultant, Oak Ridge National Laboratory (ORNL). Enclosure 2 is the associated Technical Evaluation Report by ORNL.

The NRC staff has determined that an acceptable and sufficient response to GL 94-02 has been given for NMP1 by your letters of September 8, 1994, October 2, and December 15, 1995, October 9, 1997, and July 31, 1998. Accordingly, TAC No. M94462 is now closed. Our review of your pending application for license amendment will be performed under a separate TAC number.

If you have any questions, please contact me by phone on (301) 415-3049, or by electronic mail at dsh@nrc.gov.

Sincerely,

/S/

Darl S. Hood, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-220

- Enclosures: 1. Safety Evaluation
2. Technical Evaluation Report ORNL/NRC/LTR-96/16

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Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station
Unit No. 1

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