

April 17, 2001

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

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT NO. 2 - ALTERNATIVE TO
AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND
PRESSURE VESSEL CODE (ASME CODE) REGARDING INSERVICE
TESTING OF MAIN STEAM SAFETY/RELIEF VALVES (TAC NO. MB0290)

Dear Mr. Mueller:

By letter dated November 28, 2000, Niagara Mohawk Power Corporation (NMPC) submitted Relief Request GVR-7, requesting NRC staff approval for Nine Mile Point Nuclear Station, Unit No. 2, to use an alternative which uses a revised schedule for main steam safety/relief valves testing.

As delineated in the enclosed Safety Evaluation, the alternative testing schedule provides an acceptable level of quality and safety. Therefore, NMPC's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the remainder of the second 10-year inservice testing interval.

This completes the staff's efforts on the referenced NMPC submittal. Please contact the project manager, Mr. Peter Tam, by telephone at (301) 415-1451 or by electronic mail (pst@nrc.gov) if you have any questions.

Sincerely,

/RA/

Maitri Banerjee, Acting Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-410

Enclosure: As stated

cc w/encl: See next page

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*Memo of 3/27/01 used essentially as-is

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SECOND 10-YEAR INTERVAL INSERVICE TESTING

REQUEST FOR RELIEF GVRR-7

NINE MILE POINT, UNIT 2

DOCKET NUMBER 50-410

1.0 INTRODUCTION

The *Code of Federal Regulations*, 10 CFR 50.55a, requires that inservice testing (IST) of certain American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Class 1, 2 and 3 pumps and valves be performed in accordance with Section XI of the ASME Code and applicable addenda, except where relief has been requested and granted or proposed alternatives have been authorized by the Commission pursuant to 10 CFR 50.55a (f)(6)(i), (a)(3)(i), or (a)(3)(ii). In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternative provides an acceptable level of quality and safety; (2) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for its facility. Section 50.55a authorizes the Commission to approve alternatives and to grant relief from ASME Code requirements upon making the necessary findings.

2.0 BACKGROUND

By letter dated November 28, 2000, Niagara Mohawk Power Corporation (NMPC), submitted a request for relief from certain ASME Code IST requirements pertaining to tests of the Nine Mile Point, Unit 2 (NMP2) Class 1 main steam safety/relief valves (S/RVs). The NMP2 IST program requires that the testing meet the requirements of ASME Code OM-1987, Part 1 (herein referred to as the Code). Specifically, NMPC's request seeks relief from performing as-found set pressure tests on all S/RVs within a 5-year period. There are 18 S/RVs installed on the NMP2 main steam piping and are identified as valves 2MSS*PSV120 through 2MSS*PSV137. For these 18 valves, NMPC is requesting relief from the following testing requirement:

OM-1987, Part 1, paragraph 1.3.3.1(b), "Subsequent 5 Year Periods." All valves of each type and manufacture shall be tested within each subsequent 5 year period with a minimum of 20% of the valves tested within any 24 months. This 20% shall be previously untested valves, if they exist.

NMPC referenced a similar previously approved alternative for Susquehanna Steam Electric Station, Units 1 and 2.

Enclosure

3.0 BASIS FOR RELIEF

NMPC states that NMP2 has recently implemented a 24-month fuel cycle. NMPC also states that when the fuel cycle was 18 months, it was possible to replace approximately one-third of the S/RVs each refueling outage to meet the above 5-year period requirement, but that with the 24-month cycle, approximately one-half of the S/RVs must be replaced each refueling outage. The licensee states that increasing the period from 5 years to three refueling cycles (approximately 6 years) continues to provide an acceptable level of quality and safety while restoring the operational and maintenance flexibility that was lost when the 24-month fuel cycle produced the unintended consequence of additional testing burden. NMPC further provides the following basis for the proposed alternative:

1. NMPC reviewed the setpoint testing results for the time period from initial operation to the present time (approximately 12 years, 76 data points). NMPC found that the average setpoint is +0.74% and that the calculated standard deviation from the average for the data is 1.34% of the nominal setpoint values. NMPC also found that there were only three tests which exceeded the Code as-found +3% criterion for testing additional valves and that one valve as-found setpoint was less than -3%. In 1997, the testing procedure was changed to test the S/RVs at an onsite test facility, and separate comparisons of the offsite and onsite test data indicated no significant change in the average setpoint or the standard deviation values for either test method. NMPC stated that the data indicates a slight tendency toward higher as-found setpoints, but this tendency is well within both the NMP2 Technical Specifications and the Code requirements. NMPC also stated that the setpoint history has been good with only infrequent need for Code-required additional testing.
2. The removal of additional valves each outage requires the removal of additional insulation, instrumentation, and other interferences. This additional work results in an undesirable increase in radiation exposure to maintenance personnel above that received when NMP2 was using an 18-month refueling cycle.

4.0 PROPOSED ALTERNATIVE TESTING

As an alternative to the above Code test requirement, NMPC proposes that the Class 1 S/RVs be tested at least once every three refueling cycles (approximately 6 years) with a minimum of 20% of the valves tested within any 24-month interval. This 20% would consist of valves that have not been tested during the current three cycle interval, if they exist. The test interval for any individual valve would not exceed three refueling cycles.

5.0 EVALUATION

NMPC's proposed alternative references a similar alternative authorized for the Susquehanna Steam Electric Station, Units 1 and 2. The staff revisited the basis for authorizing the Susquehanna requests and reviewed the differences and similarities to NMPC's request for NMP2. While there are some differences in data between these plants regarding numbers of tests and the overall average setpoint values for tests of the SRVs, the valves at NMP2 have performed in a manner similar to Susquehanna in that the average deviation of the setpoints from the nominal values is within a range of +/-1% and the standard deviation to the mean is similar (1.44% for Susquehanna and 1.34% for NMP2). However, in authorizing the

Susquehanna alternative, the staff noted that the Susquehanna Technical Specification (TS) S/RV setpoint tolerance is $\pm 1\%$ and is a more stringent criterion than a TS tolerance of $\pm 3\%$, as provided in General Electric Licensing Topical Report NEDC-31753P, "BWROG [Boiling Water Reactor Owners Group] In-Service Pressure Relief Technical Specifications Revision Licensing Topical Report." This topical report, which provided a basis for boiling-water reactors (BWRs) to increase S/RV setpoint tolerances to $\pm 3\%$, was approved by the NRC in a letter dated March 8, 1993, to the BWROG. This topical report provides that for an increase in the S/RV TS tolerance to $\pm 3\%$, all S/RVs must be tested within 40 months. For Susquehanna, the staff found that keeping the TS S/RV tolerance to $\pm 1\%$ and allowing the testing to be extended to three 24-month cycles provides an acceptable level of quality and safety. However, the NMP2 S/RVs have a tolerance of $\pm 3\%$, which has been in effect since before the approval of the topical report, and the fuel cycle length at NMP2 was subsequently changed from 18 months to 24 months. That is, NMP2 already has an S/RV setpoint tolerance greater than $\pm 1\%$ and all valves are currently tested within a period of approximately 48 months (which is greater than 40 months). However, the setpoint data which NMPC has provided demonstrates that with the application of a $\pm 3\%$ S/RV tolerance, the S/RVs have performed acceptably in providing adequate overpressure protection for both a 54-month test interval (i.e., three 18-month cycles) and a 48-month test interval (i.e., two 24-month cycles). Therefore, the staff finds NMPC's proposal to setpoint-test the S/RVs over three 24-month cycles to be acceptable. This finding is made, in part, with recognition that the provisions of 10 CFR 50.65 (the Maintenance Rule) require that licensees monitor the performance or conditions of components, such as S/RVs, against licensee-established goals commensurate with safety taking into account industry-wide operating experience. Another consideration is that with NMPC's proposed alternative testing, if setpoints are found above the Code $+3\%$ tolerance, at least two additional valves are required to be tested for each valve found above $+3\%$, which would significantly increase the effectiveness of testing as a corrective measure.

6.0 CONCLUSION

Based on the above evaluation, the staff has determined that, pursuant to 10 CFR 50.55a(a)(3)(i), NMPC's proposed alternative may be authorized for the remainder of the second 10-year IST interval on the basis that the alternative testing provides an acceptable level of quality and safety.

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Date: April 17, 2001

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