







March 24, 1999  
NMP2L1855

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Richard B. Abbott  
Vice President  
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U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

RE: Nine Mile Point Unit 2  
Docket No. 50-410  
NPF-69

**Subject:** *Proposed Alternative to ASME Code Section XI Inservice Testing Requirements*

Gentlemen:

Pursuant to 10CFR50.55a(a)(3), Niagara Mohawk Power Corporation (NMPC) is proposing an alternative to the Inservice Testing (IST) requirements of ASME/ANSI OM-1987 (OM-1) for Nine Mile Point Unit 2 (NMP2). Proposed Alternative GVRR-6 (see Attachment) provides details concerning the proposed alternative, the affected components, and the basis for NMPC's conclusion that, consistent with 10CFR50.55a(a)(3)(i) provisions, the proposed alternative provides an acceptable level of quality and safety.

The first ten-year interval for NMP2 expires on April 5, 1999, after taking into consideration a one-year extension allowed by the ASME Code. NMPC, therefore, requests approval of the proposed alternative by April 5, 1999. This will enable the IST requirements for the first ten-year interval to be closed in a timely manner and avoid a missed Surveillance Requirement under Technical Specification 4.0.5. Subject to NRC approval, NMPC plans to implement the proposed alternative during subsequent ten-year intervals.

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Very truly yours,

Richard B. Abbott  
Vice President Nuclear Engineering

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RBA/IAA/kap  
Attachment

xc: Mr. H. J. Miller, NRC Regional Administrator  
Mr. S. S. Bajwa, Director, Project Directorate I-1, NRR  
Mr. G. K. Hunegs, Senior Resident Inspector  
Mr. D. S. Hood, Senior Project Manager, NRR  
Records Management

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## ATTACHMENT

### Proposed Alternative GVRR-6

- Valves** : Safety and Relief Valves in Steam or Compressible Fluid Service
- ASME Class** : 2 and 3
- Category** : C and A/C
- Code Requirements** : For inservice testing (IST), Nine Mile Point Nuclear Station Unit 2 (NMP2) is committed to ASME Boiler & Pressure Vessel Code Section XI ("ASME Section XI"), 1983 Edition through Summer 1983 Addenda for the first ten-year interval. NMP2 is committed to ASME Section XI, 1989 Edition for the second ten-year interval. In the first ten-year interval, NMP2 adopted Code Case N-415, which endorsed the use of OM-1981, Part 1 for relief valve testing. ASME Section XI, 1989 Edition, directs that valve testing shall be performed in accordance with OMa-1988, Part 10 (OM-10). OM-10 further directs that relief valve testing shall be performed in accordance with OM-1987, Part 1 (OM-1). For testing of safety and relief valves used in compressible fluid service (air and steam), OM-1 Subsections 4.1.1.2 and 4.1.2.2 require that the minimum accumulator volume below the valve inlet based on valve capacity (cu ft) be calculated from the following formula:

$$\text{Minimum Volume} = \frac{[\text{valve capacity (ft}^3/\text{sec)} \times \text{time open (sec)}]}{10}$$

- Proposed Alternate Testing** : Pursuant to 10 CFR 50.55a(a)(3), for safety valves and relief valves used in compressible fluid service (air and steam), a test device shall be acceptable if, in accordance with OM-1995 Sections I 4.1.1(b) and I 4.1.2(b), the combination of accumulator volume under the valve inlet and pressure source flow rate is sufficient to determine the valve set-pressure. With the exception of the accumulator volume requirements, all other aspects of safety valve and relief valve testing shall be conducted in accordance with OM-1987, Part 1 (OM-1). This proposed alternative shall be effective for relief valve testing under OM-1, 1981 and OM-1, 1987 in both the first ten-year IST interval and the subsequent ten-year IST intervals.
- Justification Basis** : The proposed alternative is justified on the basis that it provides an acceptable level of quality and safety.

Since September 1996, Niagara Mohawk Power Corporation has conducted bench testing of safety and relief valves with a new test bench that does not contain an accumulator beneath the valve inlet. The relief valves tested on this bench exhibited positive popping characteristics without chatter or seat damage.

OM-1, as incorporated by reference in ASME Section XI 1989 Edition, specifically requires a minimum accumulator size for relief valve testing. The applicable Code used for relief valve testing prior to OM-1 was PTC 25.3-1976, as required by IWV-3512 of ASME Section XI, 1983 Edition, Summer 1983 Addenda. The PTC did not specify an accumulator volume for bench testing. Instead it stated that "bench testing may also be permitted with test stands having limited accumulator volume and/or pressure source capacity." The PTC goes on to specify that these bench tests may only be used for determination of the valve-set pressure and valve leakage.



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Justification Basis  
(cont'd)

Appendix I of OM-1995 (through OMB-1997 Addenda) and Appendix I of OM-1998, while not currently endorsed by the NRC, deleted the accumulator volume calculation and specify in Sections I 4.1.1(b) and I 4.1.2(b) that, "The volume of the accumulator drum and the pressure source flow rate shall be sufficient to determine the valve set-pressure."

NMPC believes that the purpose of the minimum accumulator volume specified in OM-1 is to ensure that there is sufficient pressure and flow to prevent seat or disc damage during setpoint testing due to valve "chattering". NMPC proposes that a physical volume identifiable as an "accumulator" is not necessary to satisfy the requirement in OM-1995 that "the volume of the accumulator drum and the pressure source flow rate shall be sufficient to determine the valve set-pressure."

Set-pressure testing of relief valves conducted since September 1996 on a test bench without an accumulator, demonstrated satisfactory valve set-pressure characteristics. The test bench used is connected to a high pressure (at least double the relief valve set pressure) air cylinder through a pressure regulator and a needle test valve. The test procedure requires at least two consecutive "pops" within 3% of the valve set-pressure. This demonstrates that the test bench volume, combined with the air cylinder volume and flow rate, is sufficient to determine the valve set-pressure. Additionally, the post-testing seat leakage required by OM-1 demonstrates that no valve seat or disc damage occurs during set pressure testing. The current test bench provides consistent results (as demonstrated by two consecutive "pops" within 3% of the valve set pressure) and does not result in chattering or valve seat or disc damage (as demonstrated by an acceptable as-left seat leakage test).

To summarize, the test method provided by the relief valve test bench without an accumulator is consistent with the test method prescribed by the 1983 ASME Section XI, OM-1995, and OM-1998. Only OM-1-1987 (endorsed by ASME Section XI, 1989 Edition) requires a specific accumulator volume for the relief valve test bench. The use of the safety/relief valve test bench without an accumulator provides a set-pressure testing method consistent with the requirements of PTC 25.3-1976 and OM-1995.

Therefore, the proposed alternative is justified based on the fact that it provides an acceptable level of quality and safety.



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