Niagara Mohawk®

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NMP2L 2009

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: ***Inservice Testing Relief Request GVRR-8, Regarding Excess Flow Check Valve Test Frequency, TAC No. MB1491***

Gentlemen:

Pursuant to 10CFR50.55a(a)(3)(i), Niagara Mohawk Power Corporation (NMPC) hereby requests approval to perform alternative testing to that specified by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, and the OMa-1988 Addenda to ASME/ANSI OM-1987, Part 10, "Inservice Testing of Valves in Light-Water Reactor Power Plants." Specifically, the proposed alternative would allow relaxation of the frequency of surveillance testing of excess flow check valves (EFCV) in reactor instrumentation lines. Attached Relief Request GVRR-8 describes the proposed alternative testing and associated basis, and lists the applicable components. NMPC believes that the proposed alternative EFCV testing frequency provides an acceptable level of quality and safety.

This relief request is submitted in conjunction with a proposed change to Technical Specification Surveillance Requirement 3.6.1.3.9 that was submitted on February 5, 2001 (NMP2L 1996). The NRC has previously approved similar requests for an alternative EFCV surveillance testing frequency for use at Duane Arnold Energy Center and James A. Fitzpatrick Nuclear Power Plant.

NMPC requests that the NRC approve this relief request by December 31, 2001 to allow implementation prior to refueling outage eight, scheduled for the spring of 2002.

Very truly yours,

Richard B. Abbott
Vice President Nuclear Engineering

RBA/DEV/cld
Attachment (3 pages)

A047

xc: Mr. H. J. Miller, NRC Regional Administrator, Region I
Ms. M. K. Gamberoni, Section Chief PD-I, Section 1, NRR
Mr. G. K. Hunegs, NRC Senior Resident Inspector
Mr. P. S. Tam, Senior Project Manager, NRR
Records Management

NINE MILE POINT NUCLEAR STATION UNIT 2
INSERVICE PUMP AND VALVE TESTING PROGRAM
GVRR–8
PROPOSED ALTERNATIVE To OMa-1988 Addenda To ASME/ANSI OM-1987, Part 10, Paragraph 4.1, Valve Position Verification, and Paragraph 4.3.2, Exercising Tests For Check Valves

Valves: Excess Flow Check Valves (EFCVs) (list attached)

ASME Code Class: 2

IST Category: C

Function:

EFCVs are installed on reactor instrumentation lines penetrating primary containment. They are designed not to close inadvertently during normal operation, but are designed to close automatically to minimize leakage in the unlikely event of an instrument line break downstream of the EFCV, and have their status indicated in the control room. Installation of EFCVs conforms to Regulatory Guide 1.11. The reactor instrumentation line EFCVs are not required to close in response to a containment isolation signal and are not postulated to actuate under post-Loss-of-Coolant Accident conditions.

A flow-restricting orifice is installed upstream of the EFCV on each of the reactor instrumentation lines. In the unlikely event that an EFCV fails to function properly concurrent with a postulated instrument line break outside primary containment, the orifice limits reactor coolant leakage to a level where the integrity and functional performance of secondary containment is maintained, the coolant loss is within the capability of reactor coolant makeup systems, and the potential offsite radiological consequences are substantially below the guideline values of 10 CFR 100.

Test Requirements:

Check valves shall be full-stroke exercised nominally every 3 months in accordance with OM-10, paragraph 4.3.2.1, except as provided in paragraph 4.3.2.2. Full stroke exercising may be limited to refueling outages in accordance with 4.3.2.2(e).

Valves with remote position indicators shall be observed locally at least once every two years to verify that valve operation is accurately indicated in accordance with OM-10, paragraph 4.1.

Basis for Proposed Alternative:

Pursuant to 10CFR50.55a(a)(3)(i), authorization is requested to implement an alternative to the requirements of OM-10, paragraphs 4.1 and 4.3.2.2(e), which specify that position indication of valves be verified at least once every two years; and full-stroke exercising of check valves be conducted during each refueling outage, respectively. The proposed alternative is to conduct exercising and valve position verification tests on a representative sample of reactor instrumentation line EFCVs in accordance with the proposed amendment for Technical Specification (TS) Surveillance Requirement (SR) 3.6.1.3.9 submitted in letter NMP2L 1996 dated February 5, 2001. The representative sample consists of an approximately equal number of EFCVs every refueling outage, such that each EFCV is tested at least once every 5 refueling cycles (nominally 10 years). In addition, the EFCVs in the sample are representative of the various plant configurations, models, sizes, and operating environments. The proposed alternative testing is consistent with NRC-approved Technical Specification Task Force change TSTF-334, and GE Nuclear Energy topical report NEDO-32977-A dated June 2000.

An EFCV is basically a spring-loaded ball check valve with a notched disc. Since the system is normally in a static condition, the valve ball is held open by the spring. A sudden increase in flow (i.e., line break) will result in differential pressure across the valve disc, and result in forces that overcome the spring force and close the valve. The valve is designed to allow leakage past the seat in the closed position to equalize pressure across the valve when the excess flow condition is corrected, thus allowing the spring to reopen the valve.

The reactor instrumentation line EFCVs cannot be exercised closed during normal power operation since closing these valves would isolate instrumentation required for power operation. These valves are currently verified to close by testing performed during each refueling outage in accordance with TS SR 3.6.1.3.9. Functional testing of valve closure is accomplished by venting the instrument side of the valve while the process side is under pressure and observing the position indicator, and by verifying that the leakage rate slows. Following system restoration, the valve reopens and verification of open position indication is performed. The test methods described above are identical for the proposed alternative testing.

EFCVs have been extremely reliable throughout the industry (reference GE Nuclear Energy topical report NEDO-32977-A, "Excess Flow Check Valve Testing Relaxation," June 2000). At Nine Mile Point Unit 2 (NMP2), 602 as-found surveillance tests conducted over a total aggregate time of 1075 valve years resulted in two as-found failures of EFCVs to close. Based on NMP2's experience to date, the calculated upper limit failure rate for these valves is 6.7E-07/hr. The failure rate demonstrates the high reliability of these valves and that NMP2's experience is comparable to that of the 12 BWR plants upon which the topical report was based. The total plant release frequency for a random break of any of the 87 NMP2 reactor instrumentation lines and a concurrent failure of the line's EFCV to close to isolate the break has been calculated in accordance with the method described in NEDO-32977-A. The increase in release frequency due to the relaxed frequency of EFCV testing is considered to be insignificant. In addition, the consequences of an unisolable rupture of a reactor instrumentation line have been previously evaluated in NMP2 Updated Safety Analysis Report (USAR) Section 15.6.2 without crediting the EFCV function. The calculated offsite exposures for this event are substantially below the guidelines of 10 CFR Part 100. Therefore, considering the historically high reliability of the EFCVs and their low risk significance and radiological consequences should they fail, the alternative testing of a representative sample, rather than each EFCV, during each refueling outage provides an acceptable level of quality and safety, in accordance with 10CFR50.55a(a)(3)(i).

***Proposed Alternate Testing*:**

EFCV reverse flow exercising and position indication verification will be conducted by testing a representative sample of reactor instrumentation line EFCVs in accordance with the proposed amendment for TS SR 3.6.1.3.9 submitted in letter NMP2L 1996 dated February 5, 2001. The representative sample consists of an approximately equal number of EFCVs every refueling outage, such that each EFCV is tested at least once every 5 refueling cycles (nominally 10 years).

NINE MILE POINT NUCLEAR STATION UNIT 2
INSERVICE PUMP AND VALVE TESTING PROGRAM
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LIST OF AFFECTED VALVES [1]

2CSH*EFV3	2ISC*EFV26	2ISC*EFV8	2RCS*EFV46B
2CSL*EFV1	2ISC*EFV27	2MSS*EFV1A	2RCS*EFV47A
2ICS*EFV1	2ISC*EFV28	2MSS*EFV1B	2RCS*EFV47B
2ICS*EFV2	2ISC*EFV29	2MSS*EFV1C	2RCS*EFV48A
2ICS*EFV3	2ISC*EFV3	2MSS*EFV1D	2RCS*EFV48B
2ICS*EFV4	2ISC*EFV30	2MSS*EFV2A	2RCS*EFV52A
2ICS*EFV5	2ISC*EFV31	2MSS*EFV2B	2RCS*EFV52B
2ISC*EFV1	2ISC*EFV32	2MSS*EFV2C	2RCS*EFV53A
2ISC*EFV10	2ISC*EFV33	2MSS*EFV2D	2RCS*EFV53B
2ISC*EFV11	2ISC*EFV34	2MSS*EFV3A	2RCS*EFV62A
2ISC*EFV13	2ISC*EFV35	2MSS*EFV3B	2RCS*EFV62B
2ISC*EFV14	2ISC*EFV36	2MSS*EFV3C	2RCS*EFV63A
2ISC*EFV15	2ISC*EFV37	2MSS*EFV3D	2RCS*EFV63B
2ISC*EFV17	2ISC*EFV38	2MSS*EFV4A	2RHS*EFV5
2ISC*EFV18	2ISC*EFV39	2MSS*EFV4B	2RHS*EFV6
2ISC*EFV2	2ISC*EFV4	2MSS*EFV4C	2RHS*EFV7
2ISC*EFV20	2ISC*EFV40	2MSS*EFV4D	2WCS*EFV221
2ISC*EFV21	2ISC*EFV41	2RCS*EFV44A	2WCS*EFV222
2ISC*EFV22	2ISC*EFV42	2RCS*EFV44B	2WCS*EFV223
2ISC*EFV23	2ISC*EFV5	2RCS*EFV45A	2WCS*EFV224
2ISC*EFV24	2ISC*EFV6	2RCS*EFV45B	2WCS*EFV300
2ISC*EFV25	2ISC*EFV7	2RCS*EFV46A	

[1] All listed valves are ASME Code Class 2, IST Category C, and 0.75 inch size.