

June 26, 2000

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 NOS. 1 & 2 -- EVALUATION OF RESPONSE TO GENERIC LETTER 96-06, "ASSURANCE OF EQUIPMENT OPERABILITY AND CONTAINMENT INTEGRITY DURING DESIGN-BASIS ACCIDENT CONDITIONS" (TAC NOS. M96836 AND 96837)

Dear Mr. Mueller:

The NRC staff issued Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions" on September 30, 1996. On November 13, 1997, the NRC staff issued Supplement 1 to GL 96-06. By the following letters Niagara Mohawk Power Corporation responded to the GL: October 29, 1996; January 28, 1997; February 7, 1997; December 16, 1997; August 28, 1998; January 20, 1999; March 31, 1999; September 30, 1999; and March 14, 2000. The licensee's submittals address the issues of water hammer, two-phase flow and thermally-induced pressurization of piping penetrating containment for Nine Mile Point 1 and 2.

The NRC staff reviewed your submittals. As delineated in the enclosed Safety Evaluation, you have acceptably addressed the issues of water hammer, two-phase flow, and thermally-induced pressurization of piping penetrating containment. Thus, all issues covered by GL 96-06 have been resolved for Nine Mile Point 1 and 2.

This completes our efforts for the above TAC numbers. If you have questions regarding this matter, call me at (301) 415-1451 or email: pst@nrc.gov.

Sincerely,

/RA/

Peter S. Tam, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-220 and 50-410

Enclosure: Safety Evaluation

cc w/encl: See next page

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

June 26, 2000

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT NOS. 1 & 2 -- EVALUATION OF RESPONSE TO GENERIC LETTER 96-06, "ASSURANCE OF EQUIPMENT OPERABILITY AND CONTAINMENT INTEGRITY DURING DESIGN-BASIS ACCIDENT CONDITIONS" (TAC NOS. M96836 AND 96837)

Dear Mr. Mueller:

The NRC staff issued Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions" on September 30, 1996. On November 13, 1997, the NRC staff issued Supplement 1 to GL 96-06. By the following letters Niagara Mohawk Power Corporation responded to the GL: October 29, 1996; January 28, 1997; February 7, 1997; December 16, 1997; August 28, 1998; January 20, 1999; March 31, 1999; September 30, 1999; and March 14, 2000. The licensee's submittals address the issues of water hammer, two-phase flow and thermally-induced pressurization of piping penetrating containment for Nine Mile Point 1 and 2.

The NRC staff reviewed your submittals. As delineated in the enclosed Safety Evaluation, you have acceptably addressed the issues of water hammer, two-phase flow, and thermally-induced pressurization of piping penetrating containment. Thus, all issues covered by GL 96-06 have been resolved for Nine Mile Point 1 and 2.

This completes our efforts for the above TAC numbers. If you have questions regarding this matter, call me at (301) 415-1451 or email: pst@nrc.gov.

Sincerely,

/RA/

Peter S. Tam, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-220 and 50-410

Enclosure: Safety Evaluation

cc w/encl: See next page

DISTRIBUTION:

M. Oprendeck, RGN-1

PUBLIC

M. Gamberoni

PDI-1 Reading

J. Huang (e-mail)

ACRS

OGC

J. Tatum (e-mail)

S. Little

DOCUMENT NAME: G:\PDI-1\NMP1-2\LTR96836.WPD

To receive a copy of this document, indicate in the box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

OFFICE	PM:PDI		LA:PDI		SC:PDI(A)		SC:EMEB		SC:SPLB	
NAME	PTam/lcc		SLittle		MGamberoni		KManoly*		GHubbard**	
DATE	6/ 22 /99		6/ 22 /00		6/ 26 /00		5/1/00		6/ 7 /00	

OFFICIAL RECORD COPY

*Memoranda of 5/1/00 and 6/7/00 essentially used as-is

Nine Mile Point Nuclear Station
Unit Nos. 1 and 2

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 126
Lycoming, NY 13093

Mr. Jim Rettberg
New York State Electric & Gas
Corporation
Corporate Drive
Kirkwood Industrial Park
P.O. Box 5224
Binghamton, NY 13902-5224

Supervisor
Town of Scriba
Route 8, Box 382
Oswego, NY 13126

Mr. Richard Goldsmith
Syracuse University
College of Law
E.I. White Hall Campus
Syracuse, NY 12223

Mr. John V. Vinquist, MATS Inc.
P.O. Box 63
Lycoming, NY 13093

Charles Donaldson, Esquire
Assistant Attorney General
New York Department of Law
120 Broadway
New York, NY 10271

Mr. Paul D. Eddy
Electric Division
NYS Department of Public Service
Agency Building 3
Empire State Plaza
Albany, NY 12223

Mr. Timothy S. Carey
Chair and Executive Director
State Consumer Protection Board
5 Empire State Plaza, Suite 2101
Albany, NY 12223

Mark J. Wetterhahn, Esquire
Winston & Strawn
1400 L Street, NW
Washington, DC 20005-3502

Gary D. Wilson, Esquire
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, NY 13202

Mr. F. William Valentino, President
New York State Energy, Research,
and Development Authority
Corporate Plaza West
286 Washington Avenue Extension
Albany, NY 12203-6399

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

EVALUATION OF RESPONSE TO GENERIC LETTER 96-06

NINE MILE POINT NUCLEAR STATION, UNIT NOS. 1 AND 2

NIAGARA MOHAWK POWER CORPORATION

DOCKET NOS. 50-220 AND 50-410

1.0 INTRODUCTION

The NRC staff issued Generic Letter (GL) 96-06, Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions” on September 30, 1996. On November 13, 1997, the NRC staff issued Supplement 1 to GL 96-06. By the following letters Niagara Mohawk Power Corporation responded to the GL: October 29, 1996; January 28, 1997; February 7, 1997; December 16, 1997; August 28, 1998; January 20, 1999; March 31, 1999; September 30, 1999; and March 14, 2000. Results of the staff’s review of these submittals are set forth below.

2.0 EVALUATION

In response to GL 96-06, the licensee’s submittals address the issues of water hammer, two-phase flow and thermally-induced pressurization of piping penetrating containment for Nine Mile Point 1 and 2.

2.1 Thermally-Induced Pressurization of Piping Penetrating Containment

In its submittals of January 28, 1997, February 7, 1997, and January 20, 1999, the licensee identified 10 pipe segments penetrating containment at Unit 1 and 20 pipe segments penetrating containment at Unit 2, susceptible to thermally-induced pressurization which were evaluated for operability. The Unit 1 pipe segments are associated with penetrations for the shutdown cooling lines, the drywell drain lines, the post-accident sampling lines, the core spray high point vent lines, the core spray lines, and the reactor water cleanup lines. The Unit 2 pipe segments are associated with the drywell drain lines, the spent fuel pool cooling lines, the reactor recirculation line, reactor recirculation hydraulic lines, and the reactor water cleanup lines.

In the March 31, 1999, submittal, the licensee provided updated information regarding piping analyses and plant modifications at Unit 1. The licensee indicated that 3 of the 10 penetrations were modified during refueling outage 14, i.e., installation of a bypass line and a check valve for penetrations X-7 and X-8, and a rupture disc for penetration X-139. Furthermore, penetrations X-13A and X-14 will be modified during refueling outage number 16 by installing a bypass line and a check valve. Detailed analyses have been performed on the remaining five piping segments (penetrations X-9, X-25, X-26, X-154, and X-238). These analyses were performed in accordance with the 1986 Edition of the ASME Code, Section III, Appendix F criteria for

Enclosure

inelastic analysis. The licensee determined that Appendix F results for the five remaining piping segments were within Level D service limits under design-basis accident conditions, and therefore, no further action is required.

In the submittals of January 20, 1999, March 31, 1999, and March 14, 2000, the licensee provided results of evaluations and corrective actions taken at Unit 2 regarding plant modifications and analyses. The licensee indicated that five (2CCP*Z33B, 2CCP*Z34B, 2RHS*Z11, 2SFC*Z80, and 2RCS*Z41) of the twenty penetrations were not susceptible to overpressurization, and therefore, required no further action. The licensee commits to install thermal relief valves for six penetrations (2CCP*Z33A, 2CCP*Z34A, 2CCP*Z46A, 2CCP*Z47, 2DER*Z40, and 2DFR*Z39) during refueling outage number 7. For the remaining nine penetrations (2RCS*Z99A thru D, 2RCS*Z100A thru D, and 2WCS*Z23), the licensee performed Appendix F analyses and determined that the nine penetrations satisfy the applicable American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section III stress limits, and therefore, no plant modification is required.

The staff finds that installation of a bypass line and a check valve, thermal relief valves, or rupture discs are acceptable means for relieving pressure of a solid water volume. The staff also finds that Appendix F analysis is an acceptable means to demonstrate the operability of affected piping segments. Therefore, the staff concludes that the licensee's corrective actions, proposed plant modifications, and the use of Appendix F analyses provide an acceptable resolution for the issue of thermally-induced pressurization of piping runs penetrating the containment, and the closed piping segments inside the containment.

2.2 Waterhammer and Two-Phase Flow Issues

GL 96-06 included a request for licensees to evaluate cooling water systems that serve containment air coolers to ensure that they are not vulnerable to waterhammer and two-phase flow conditions. The licensee provided its assessment of the waterhammer and two-phase flow issues in the February 7, 1997, letter and additional information in the letter dated August 28, 1998. Based on review of the information provided, it is the staff's understanding that:

The drywell cooling units are not required for accident mitigation,

In the case of Unit 1, the Reactor Building Closed Loop Cooling (RBCLC) system makeup tank maintains sufficient static pressure on the RBCLC system to prevent the formation of steam, thereby eliminating the potential for waterhammer and two-phase flow conditions, and

In the case of Unit 2, procedure revisions have been made to prevent restoration of cooling water flow to the containment drywell coolers during the event scenarios of interest for the possibility that the saturation temperature of the RBCLC fluid in the drywell coolers was exceeded, thereby eliminating the potential for waterhammer or two-phase flow conditions.

The staff is satisfied with the licensee's response and considers the waterhammer and two-phase flow elements of GL 96-06 to be closed.

3.0 CONCLUSION

As delineated above, the licensee has acceptably addressed the issues of water hammer, two-phase flow, and thermally-induced pressurization of piping penetrating containment. Thus, all issues covered by GL 96-06 have been resolved for Nine Mile Point 1 and 2.

Principal Contributors: John Huang
James Tatum

Date: June 26, 2000