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

March 30, 1994

Docket No. 50-220

Mr. B. Ralph Sylvia
Executive Vice President, Nuclear
Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Dear Mr. Sylvia:

SUBJECT: GENERIC LETTER (GL) 92-01, REVISION 1, "REACTOR VESSEL STRUCTURAL INTEGRITY," NINE MILE POINT NUCLEAR STATION UNIT NO. 1 (NMP-1) (TAC NO. M83486)

By letters dated July 2, 1992, and October 16, 1992, Niagara Mohawk Power Corporation (NMPC) provided its responses to GL 92-01, Revision 1. The NRC staff has completed its review of NMPC's responses. Based on its review, the NRC staff has determined that NMPC has provided the information requested in GL 92-01.

The GL is part of the NRC staff's program to evaluate reactor vessel integrity for Pressurized Water Reactors (PWRs) and Boiling Water Reactors (BWRs). The information provided in response to GL 92-01, including previously docketed information, is being used to confirm that licensees satisfy the requirements and commitments necessary to ensure reactor vessel integrity for their facilities.

A substantial amount of information was provided in response to GL 92-01, Revision 1. These data have been entered into a computerized data base designated Reactor Vessel Integrity Database (RVID). The RVID contains the following tables: A pressure-temperature limit table for BWRs and an upper-shelf energy (USE) table for PWRs and BWR's. Enclosure 1 provides the pressure-temperature table, Enclosure 2 provides the USE table for NMP-1, and Enclosure 3 provides a key for the nomenclature used in the tables. The tables include the data necessary to perform USE and pressure-temperature limit evaluations. These data were taken from your responses to GL 92-01 and previously docketed information. The information in the RVID for NMP-1 will be considered accurate at this point in time and will be used in the NRC staff's assessments related to vessel structural integrity. References to the specific source of the data are provided in the tables.

We request that you verify the information you have provided for your facility has been accurately entered in the data base. No response is necessary unless an inconsistency is identified. If no comments are received within 30 days from the date of this letter, the NRC staff will consider your actions related to GL 92-01, Revision 1, to be complete.

The NRC staff's evaluation of NMPC's plant specific equivalent margin analysis is being reported separately to you under TAC No. M86107.

The information requested by this letter is within the scope of the overall burden estimated in GL 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)." The estimated average number of burden hours is 200 person hours for each addressee's response. This estimate pertains only to the identified response-related matters and does not include the time required to implement actions required by the regulations. This action is covered by the Office of Management and Budget Clearance Number 3150-0011, which expires June 30, 1994.

Sincerely,

Donald S. Brinkman

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

Enclosures:
1. Pressure-Temperature Limit Table
2. Upper-Shelf Energy Table
3. Nomenclature Key

cc w/enclosures:
See next page

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Niagara Mohawk Power Corporation

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Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Nine Mile Point 1 EOL: 8/22/2009	Upper Shell G-307-3	P2074	2.21E18	28°F	Plant Specific	134.6	Table	0.20	0.48
	Upper Shell G-307-4	P2076	2.21E18	40°F	Plant Specific	173.85	Table	0.27	0.53
	Upper Shell G-307-10	P2091	2.21E18	20°F	Plant Specific	148.85	Table	0.22	0.51
	Lower Shell G-8-1	P2112	2.21E18	36°F	Plant Specific	153.95	Table	0.23	0.51
	Lower Shell G-8-3	P2130	2.21E18	-3°F	Plant Specific	130.2	Table	0.18	0.56
	Lower Shell G-8-4	P2130	2.21E18	-3°F	Plant Specific	130.2	Table	0.18	0.56
	Lower Int. Shell Axial Welds 2-564A/C	86054	2.21E18	-50°F	Generic	112.0	Table	0.22	0.20
	Lower Int./Lower Shell Circ. Weld 3-564	1248	2.21E18	-50°F	Generic	112.0	Table	0.22	0.20
	Lower Shell Axial Welds 2-564D/F	86054	2.21E18	-50°F	Generic	112.0	Table	0.22	0.20

<u>Reference for Nine Mile Point 1</u>

Fluence, chemical composition, and IRT data are from July 2, 1992, letter from C. D. Terry (NMPCo) to USNRC Document Control Desk, subject: Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Nine Mile Point 1 EOL: 8/22/2009	Upper Shell G-307-3	P2074	A 302B Mod.	53	1.44E18	65	65%
	Upper Shell G-307-4	P2076	A 302B Mod.	EMA[2]	1.44E18	52	65%
	Upper Shell G-307-10	P2091	A 302B Mod.	50	1.44E18	63	65%
	Lower Shell G-8-1	P2112	A 302B Mod.	EMA[2]	1.44E18	53	65%
	Lower Shell G-8-3	P2130	A 302B Mod.	53	1.44E18	64	Direct
	Lower Shell G-8-4	P2130	A 302B Mod.	53	1.44E18	64	Direct
	Lower Int. Shell Axial Welds 2-564A/C	86054	ARCOS B-5, SAW	57	1.44E18	75[3]	NRC Generic
	Lower Int./Lower Shell Circ. Weld 3-564	1248	ARCOS B-5, SAW	57	1.44E18	75[3]	NRC Generic
	Lower Shell Axial Welds 2-564D/F	86054	ARCOS B-5, SAW	57	1.44E18	75[3]	NRC Generic

Reference for Nine Mile Point 1

UUSE, chemical composition, and fluence data are from July 2, 1992, letter from C. D. Terry (NMPCo) to USNRC Document Control Desk, subject: Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

Notes: Unirradiated USE for welds are lower two standard deviation value from the surveillance weld

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[2] Plant specific equivalent margins analysis has been approved by NRC.

[3] Generic value for welds fabricated by Combustion Engineering using Linde 1092, 0091 and 123 and Arcos B-5 fluxes (Ref: Letter from S. Bloom, NRR, to T.L. Patterson, OPPD, dated December 3, 1993)

NOMENCLATURE

Pressure-Temperature Limits Table

- Column 1: Plant name and date of expiration of license.
- Column 2: Beltline material location identification.
- Column 3: Beltline material heat number; for some welds that a single-wire or tandem-wire process has been reported, (S) indicates single wire was used in the SAW process, (T) indicates tandem wire was used in the SAW process.
- Column 4: End-of-life (EOL) neutron fluence at vessel inner wall; cited directly from inner diameter (ID) value or calculated by using Regulatory Guide (RG) 1.99, Revision 2 neutron fluence attenuation methodology from the quarter thickness (T/4) value reported in the latest submittal (GL 92-01, PTS, or P/T limits submittals).
- Column 5: Unirradiated reference temperature.
- Column 6: Method of determining unirradiated reference temperature (IRT).

  Plant-Specific
  This indicates that the IRT was determined from tests on material removed from the same heat of the beltline material.

  MTEB 5-2
  This indicates that the unirradiated reference temperature was determined from following MTEB 5-2 guidelines for cases where the IRT was not determined using American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section III, NB-2331, methodology.

  Generic
  This indicates that the unirradiated reference temperature was determined from the mean value of tests on material of similar types.

- Column 7: Chemistry factor for irradiated reference temperature evaluation.
- Column 8: Method of determining chemistry factor

  Table
  This indicates that the chemistry factor was determined from the chemistry factor tables in RG 1.99, Revision 2.

  Calculated
  This indicates that the chemistry factor was determined from surveillance data via procedures described in RG 1.99, Revision 2.

Column 9: Copper content; cited directly from licensee value except when more than one value was reported. (Staff used the average value in the latter case.)

No Data
This indicates that no copper data has been reported and the default value in RG 1.99, Revision 2, will be used by the staff.

Column 10: Nickel content; cited directly from licensee value except when more than one value was reported. (Staff used the average value in the latter case.)

No Data

This indicates that no nickel data has been reported and the default value in RG 1.99, Revision 2, will be used by the staff.

Upper Shelf Energy Table

Column 1: Plant name and date of expiration of license.
Column 2: Beltline material location identification.
Column 3: Beltline material heat number; for some welds that a single-wire or tandem-wire process has been reported, (S) indicates single wire was used in the SAW process. (T) indicates tandem wire was used in the SAW process.
Column 4: Material type; plate types include A 533B-1, A 302B, A 302B Mod., and forging A 508-2; weld types include SAW welds using Linde 80, 0091, 124, 1092, ARCOS-B5 flux, Rotterdam welds using Graw Lo, SMIT 89, LW 320, and SAF 89 flux, and SMAW welds using no flux.
Column 5: EOL upper-shelf energy (USE) at T/4; calculated by using the EOL fluence and either the cooper value or the surveillance data. (Both methods are described in RG 1.99, Revision 2.)

EMA
This indicates that the USE issue may be covered by the approved equivalent margins analysis in the BWR Owners Group Topical Report: NEDO-32205, Revision 1.

Column 6: EOL neutron fluence at T/4 from vessel inner wall; cited directly from T/4 value or calculated by using RG 1.99, Revision 2 neutron fluence attenuation methodology from the ID value reorted in the latest submittal (GL 92-01, PTS, or P/T limits submittals).

Column 7: Unirradiated USE.

EMA

This indicates that the USE issue may be covered by the approved equivalent margins analysis in the BWR Owners Group Topical Report: NEDO-32205, Revision 1.

Column 8: Method of determining unirradiated USE

Direct

For plates, this indicates that the unirradiated USE was from a transverse specimen. For welds, this indicates that the unirradiated USE was from test date.

65%

This indicates that the unirradiated USE was 65% of the USE from a longitudinal specimen.

Generic

This indicates that the unirradiated USE was reported by the licensee from other plants with similar materials to the beltline material.

NRC generic

This indicates that the unirradiated USE was derived by the staff from other plants with similar materials to the beltline material.

10, 30, 40, or 50 °F

This indicates that the unirradiated USE was derived from Charpy test conducted at 10, 30, 40, or 50 °F.

Surv. Weld

This indicates that the unirradiated USE was from the surveillance weld having the same weld wire heat number.

Equiv. to Surv. Weld

This indicates that the unirradiated USE was from the surveillance weld having different weld wire heat number.

Sister Plant

This indicates that the unirradiated USE was derived by using the reported value from other plants with the same weld wire heat number.

Blank

indicates that there is insufficient data to determine the unirradiated USE. These licensees will utilize Topical Report NEDO-32205, Revision 1 to demonstrate USE compliance to Appendix G, 10 CFR Part 50.

The NRC staff's evaluation of NMPC's plant specific equivalent margin analysis is being reported separately to you under TAC No. M86107.

The information requested by this letter is within the scope of the overall burden estimated in GL 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)." The estimated average number of burden hours is 200 person hours for each addressee's response. This estimate pertains only to the identified response-related matters and does not include the time required to implement actions required by the regulations. This action is covered by the Office of Management and Budget Clearance Number 3150-0011, which expires June 30, 1994.

Sincerely,

Original signed by:

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

Enclosures:
1. Pressure-Temperature Limit Table
2. Upper-Shelf Energy Table
3. Nomenclature Key

cc w/enclosures:
See next page

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