



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

August 22, 2013

Mr. Christopher Costanzo
Vice President Nine Mile Point
Nine Mile Point Nuclear Station, LLC
P. O. Box 63
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT NO. 2 - REQUEST FOR
ADDITIONAL INFORMATION REGARDING THE LICENSE AMENDMENT
REQUEST FOR THE RELOCATION OF PRESSURE AND TEMPERATURE
LIMIT CURVES TO THE PRESSURE AND TEMPERATURE LIMITS REPORT
(TAC NO. MF0345)

Dear Mr. Costanzo:

By letter dated July 31, 2013, Nine Mile Point Nuclear Station, LLC (the licensee) submitted a response to request for additional information (RAI) regarding request for changes to the Nine Mile Point Unit No. 2 (NMP2) Technical Specifications (TSs) pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.90. The proposed amendment would revise the NMP2 TSs as necessary to relocate the pressure and temperature limit curves and associated references to a Pressure and Temperature Limits Report.

The Nuclear Regulatory Commission (NRC) staff has reviewed the information provided in that letter and has determined that additional information is needed to complete its review.

**NOTICE: Enclosure 2 to this letter contains sensitive security-related information.
Upon separation from Enclosure 2, this letter is DECONTROLLED.**

C. Costanzo

-2-

The NRC staff's request for additional information (RAI) is provided in Enclosure 1. The RAI was discussed with your staff on August 19, 2013, and it was agreed that your response would be provided by close of business September 6, 2013.

Sincerely,



Bhalchandra Vaidya, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-410

Enclosure:

1. RAI with Proprietary Information Redacted
2. RAI with Proprietary Information

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ENCLOSURE 1

(WITH SENSITIVE PROPRIETARY INFORMATION REDACTED)

REQUEST FOR ADDITIONAL INFORMATION

NINE MILE POINT NUCLEAR STATION, UNIT NO. 2

LICENSE AMENDMENT REQUEST FOR

THE RELOCATION OF PRESSURE AND TEMPERATURE LIMIT CURVES

TO THE PRESSURE AND TEMPERATURE LIMITS REPORT

DOCKET NUMBER: 50-410

(TAC NUMBER MF0345)

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REQUEST FOR ADDITIONAL INFORMATION
NINE MILE POINT NUCLEAR STATION, UNIT NO. 2
LICENSE AMENDMENT REQUEST FOR
THE RELOCATION OF PRESSURE AND TEMPERATURE LIMIT CURVES
TO THE PRESSURE AND TEMPERATURE LIMITS REPORT
DOCKET NUMBER: 50-410
(TAC NUMBER MF0345)

BACKGROUND

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix G, "Fracture Toughness Requirements," states:

"this appendix specifies fracture toughness requirements for ferritic materials of pressure-retaining components of the reactor coolant pressure boundary (RCPB) of light water nuclear power reactors to provide adequate margins of safety..."

In addition, 10 CFR Part 50, Appendix G, Paragraph IV.A states that:

"the pressure-retaining components of the RCPB that are made of ferritic materials must meet the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), supplemented by the additional requirements set forth in [paragraph IV.A.2, "Pressure-Temperature (P-T) Limits and Minimum Temperature Requirements"]..."

Therefore, 10 CFR Part 50, Appendix G requires that P-T limits be developed for the entire RCPB, consisting of ferritic RCPB materials in the reactor pressure vessel (RPV) beltline (neutron fluence $\geq 1 \times 10^{17}$ n/cm², E > 1 MeV), as well as ferritic RCPB materials not in the RPV beltline (neutron fluence $< 1 \times 10^{17}$ n/cm², E > 1 MeV). This request contains sensitive proprietary information which is indicated by double square brackets.

RAI EVIB 3

The response to request for additional information (RAI) EVIB-1 states that Tables 4-4 and 4-5 of Reference 1 provide a list of all non-beltline vessel reactor coolant pressure boundary (RCPB) components included in the pressure-temperature (P-T) limit evaluation. It appears that all the listed components are non-beltline components in the RPV.

Requested information:

Are there any ferritic components in the RCPB that are not part of the RPV that must be considered in the development of the P-T limits, such as piping components or other pressure vessels? If so, describe how these components were considered in the development of the P-T limits, for example through consideration of the lowest service temperature as defined in the ASME Code, Section III.

RAI EVIB 4

The response to RAI EVIB-1 indicates that all RCPB materials met the applicable ASME Code requirements for fracture toughness, but also states that the Pressure Integrity Specification for the RCPB materials has the following requirement:

“For ferritic RCPB materials ordered where the service temperature is less than 250°F when the system is pressurized to more than 20% of the design pressure, impact tests in accordance with the ASME Code were required to demonstrate adequate fracture toughness properties. For RCPB materials having a minimum service temperature of 250°F or more when the system is pressurized to more than 20% of the design pressure, impact testing was not required. Further, impact testing was not required on components or equipment whose rupture could not result in a loss of coolant exceeding the capability of the normal makeup system to maintain adequate core cooling for the duration of reactor shutdown and orderly cooldown.”

The above requirement of the Pressure Integrity Specification appears inconsistent with the requirements of the ASME Code, Section III, NB-2300, “Fracture Toughness Requirements for Material.”

Requested Information:

Discuss how the impact testing requirements of the Pressure Integrity Specification are consistent with ASME Code, Section III, NB-2300 requirements for fracture toughness of material.

RAI EVIB 5

The response to RAI EVIB-2, Item 1, Water Level Instrumentation (WLI) Nozzle states that the General Electric-Hitachi (GEH) methodology is that any partial penetration nozzle that is located in the beltline region is evaluated using the [[]] methodology as defined in Appendix F of Reference 1. The calculation provided for the pressure-temperature relationship of the WLI nozzle appears to follow the methodology of Appendix F. However, the calculation uses the [[]] from Appendix J of Reference 1.

Requested Information:

1. Clarify whether the NMP2 WLI nozzle is a partial penetration or full penetration nozzle and whether the methodology of Appendix F or Appendix J was used to calculate the P-T limits required for the WLI nozzle.
2. If the NMP2 WLI nozzle is a full-penetration nozzle, justify the use of the [[]] values from Appendix J for evaluating the P-T limits for this nozzle, since the Appendix J methodology is for a partial penetration welded nozzle.
3. Provide the inputs and the calculation of [[
]]

References:

1. NEDC-33178P-A, "GE Hitachi Nuclear Energy Methodology for Development of Reactor Pressure Vessel Pressure-Temperature Curves," Enclosure 1 to MFN 09-506, June 30, 2009 (ADAMS Accession No. ML092370488)

C. Costanzo

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Sincerely,

/ra/

Bhalchandra Vaidya, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-410

Enclosure:

- 1. RAI with Proprietary Information Redacted
- 2. RAI with Proprietary Information

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ADAMS ACCESSION NUMBERS:

Package: ML13232A145

Cover Letter & Enclosure 1: ML13231A128

Enclosure 2: ML13231A131

RAIs transmitted by memo dated 08/08/13

NRR-041

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