



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

August 11, 2011

Mr. Samuel L. Belcher  
Vice President Nine Mile Point  
Nine Mile Point Nuclear Station, LLC  
P.O. Box 63  
Lycoming, NY 13093

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING NINE MILE POINT  
NUCLEAR STATION, UNIT NO. 1 - RELIEF REQUEST NO. 11SI-004 (TAC NO.  
ME5789)

Dear Mr. Belcher:

By letter dated March 4, 2011 (Agencywide Documents Access Management System (ADAMS) Accession No. ML110680291), as superseded by letter dated March 25, 2011 (ML110950307), Nine Mile Point Nuclear Station, LLC, submitted for Nuclear Regulatory Commission (NRC) staff review and approval, Relief Request No. 11SI-004, an alternative to the requirements of Title 10 of the *Code of Federal Regulations*, Section 50.55a(g) for the Repair of Control Rod Drive Housing Penetrations for the remainder of the license renewal period of extended operation for Nine Mile Point, Unit No. 1.

The NRC staff is reviewing the information provided in that letter and has determined that additional information is needed to support its review. Enclosed is the NRC staff's request for additional information (RAI). The RAI was discussed with your staff on August 10, 2011, and it was agreed that your response would be provided by September 30, 2011.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Guzman", followed by a horizontal line.

Richard V. Guzman, Senior Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-220

Enclosure:  
As stated

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION (RAI)

NINE MILE POINT NUCLEAR STATION, LLC

NINE MILE POINT, UNIT NO. 1

REQUEST FOR RELIEF NO. 11SI-004

RELATED TO REPAIR OF CONTROL ROD DRIVE HOUSING PENETRATIONS

DOCKET NO. 50-220

The Nuclear Regulatory Commission (NRC) staff is reviewing the information provided by Nine Mile Point Nuclear Station, LLC (NMPNS or the licensee) for Nine Mile Point Nuclear Station, Unit No. 1, in its letter dated March 4, 2011, as superseded by letter dated March 25, 2011, and has determined that additional information is necessary to complete the review of Relief Request No. 11SI-004. The NRC staff has determined that additional information requested below will be needed to support its review.

1. American Society of Mechanical Engineers Boiler Pressure and Vessel Code (ASME Code), Section XI, 2004 Edition, no Addenda, IWA-4610(a) requires the use of thermocouples and recording instruments to monitor process temperatures. In Paragraph 5A of Relief Request No. 11SI-004, the licensee requests relief from using thermocouples for interpass temperature monitoring as specified in IWA-4610(a). In lieu of using thermocouples to monitor and verify process temperatures, the licensee proposes in Paragraph 5B of the relief request to verify maximum interpass temperature by performing heat transfer calculations or by performing temperature measurement on a test coupon that is no thicker than the bottom head and control rod drive (CRD) housing wall thickness. The test coupon welding would use the maximum heat input permitted by the applicable welding procedure specification.

The measurement of interpass temperature in this application is critical for at least two reasons. Maintaining a maximum interpass temperature is critical to maintaining the corrosion resistance of the stainless steel filler metal and base metal, and it is also critical in maintaining the notch toughness of the low alloy steel reactor vessel material. Therefore, maintaining a maximum interpass temperature is absolutely necessary; and since this cannot be done by direct measurement, all effort must be concentrated on maintaining a correct maximum interpass temperature, and the use of both methods of maximum interpass temperature determination shown in Paragraph 5B of the relief request is imperative.

In response to this question, please indicate if the licensee will modify its relief request to require both heat transfer calculations and temperature measurement on a test coupon that is no thicker than the bottom head and CRD housing wall thickness to be performed. If both methods are not performed or direct measurement of interpass temperature measurement is not made, please describe how an acceptable level of quality and safety can be maintained in this repair.

Enclosure

2. ASME Code Case N-606-1, "Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique for BWR [Boiling Water Reactor] CRD Housing Stub Tube Repairs, Section XI, Division 1," Paragraph 1(f) prohibits peening of the final weld layer. The licensee requests relief from this restriction to allow portions of the final weld surface and the heat affected zone in the lower CRD housing to be rotary peened after acceptance nondestructive evaluation (NDE) has been performed.

Peening is a mechanical process which can crack or otherwise damage welds. It can also mask NDE methods from identifying defects in a weld. If peening is performed on a weld, the potential for creating or masking defects exists and identification of defects in a weld is imperative. Therefore, NDE of the final weld surface, both before peening and after peening, is the best method to identify defects in a weld.

It is understood from the relief request that NDE will be performed prior to implementation of the rotary peening process. Please indicate if NDE will be performed after peening. If so, please describe what type of NDE will be performed to identify defects which may result from the peening process.

3. In the second paragraph on page 1 of Attachment 2 to Relief Request No. 11SI-004, it states, in part, "In the event that roll expansion does not seal the [Control Rod Drive Housing] penetration and stop the leak, a repair shall be performed based on BWR Vessel and Internals Project (BWRVIP)-58-A as depicted in Figure 1 with variations thereto as discussed and justified herein." Section 3 of BWRVIP-58-A, "BWR Vessel and Internals Project, CRD Internal Access Weld Repair," discusses repair of CRD welds. Section 3.3 of BWRVIP-58-A discusses making a weld repair if water is leaking through a crack and states that, "The welding is performed at a pressure (~60 psi) that would prevent leakage of water into the cavity during the welding process. The pressure in the cavity is maintained during the welding process by sealing at the CRD housing flange and at the nozzle bore plug. This hyperbaric-chamber environment must be maintained during an initial drying cycle when any residual moisture from the AWJ [Abrasive water jet] process or leakage is removed, and during the first three layers of welding to insure the leak path is sealed."

If this process or any other similar process is performed, then this weld is a dry underwater weld and as such, the rules of ASME Code, Section XI, IWA-4660, "Underwater Welding," apply. The rules of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(b)(2)(xii) also apply, in which case, permission to perform underwater welding must be sought from the NRC.

If the licensee intends to implement the approach identified in Section 3.3 of BWRVIP-58-A, please provide a request, as identified above, consistent with 10 CFR 50.55a(b)(2)(xii) and indicate how the welding process will be performed consistent with ASME Code, Section XI, IWA-4660.

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Sincerely,

/ra/

Richard V. Guzman, Senior Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
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**ADAMS Accession No.:** ML112220093 \* RAI provided by memo. No substantial changes made. NRR-088

OFFICE	LPL1-1/PM	LPL1-1/LA	CPNB/BC*	LPL1-1/BC
NAME	RGuzman	SLittle	MMitchell	NSalgado (DPickett for)
DATE	8/10/11	8/10/11	08/01/11	8/11/11

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