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NINE MILE POINT
NUCLEAR STATION

P.O. Box 63
Lycoming, New York 13093

May 18, 2012

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit No. 1; Docket No. 50-220

American Society of Mechanical Engineers (ASME) Code, Section XI, Inservice Inspection Program - 10 CFR 50.55a Request Number RR-PTRR-02, Rev. 1 - Response to NRC Request for Additional Information (TAC No. ME8534)

REFERENCES:

(a) Letter from P. M. Swift (NMPNS) to Document Control Desk (NRC), dated April 27, 2012, American Society of Mechanical Engineers (ASME) Code, Section XI, Inservice Inspection Program - 10 CFR 50.55a Request Number RR-PTRR-02

(b) Email from B. Vaidya (NRC) to J. J. Dosa (NMPNS), dated May 11, 2012, ME8534 - Request for Additional Information (RAI) Re: Relief Request RR-PTRR-02

Nine Mile Point Nuclear Station, LLC (NMPNS) hereby transmits supplemental information requested by the NRC (reference b) in support of a previously submitted request for approval of a 10 CFR 50.55a request for the remainder of the fourth ten-year Inservice Inspection (ISI) Interval for Nine Mile Point Unit 1 (NMP1) (reference a). Based on discussions with the NRC staff on May 10, 2012, responses to the Request for Additional Information (RAI) are included in Attachment 1. A revised 10 CFR 50.55a request (RR-PTRR-02, Rev. 1) is included as Attachment 2, and replaces the original request in its entirety.

A similar request for Edwin I. Hatch Nuclear Plant Unit No. 2 was approved by the NRC by letter dated January 30, 2012, from N. L. Salgado (NRC) to M. J. Ajluni (SNC) - Edwin I. Hatch Nuclear Plant, Unit No. 2, Safety Evaluation of Relief Request HNP-ISI-ALT-15, Version 2, for the Fourth 10-year Inservice Inspection Interval, Pressure Testing of Mechanical Joints (TAC NO. ME7690). Relief from the test pressure requirements of IWB-5221 (a) is the area of similarity between the two requests.

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NRR

This request is being submitted on an emergent basis due to recent degrading performance of a NMP1 reactor recirculation pump seal assembly indicating a likely need for replacement prior to the next scheduled refueling outage. NMPNS requests approval of this request by June 6, 2012 to support the maintenance activity associated with replacing the recirculation pump seal flange assembly in a non-refueling outage. Approval of this request will preclude the need to subject individuals to unnecessary dose to enter containment at power and to preclude the need to conduct a full Reactor Pressure Vessel Leak Test and the associated risk of vessel over-pressurization while in a water solid condition, as well as the challenges to reactor pressure vessel level control during transition into and out of test conditions.

This letter contains no new regulatory commitments.

Should you have any questions regarding the information in this submittal, please contact John J. Dosa, Director Licensing, at (315) 349-5219.

Very truly yours,

Paul M. Swift
Manager, Engineering Services

PMS/KJK

Attachments:
1. Response to NRC Request for Additional Information Regarding 10 CFR 50.55a Request Number RR-PTRR-02
2. Nine Mile Point Nuclear Station Unit 1 Fourth Inservice Inspection Interval, 10 CFR 50.55a Request Number RR-PTRR-02, Rev. 1, Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)

cc: Regional Administrator, Region I, NRC
Project Manager, NRC
Resident Inspector, NRC

ATTACHMENT 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION

REGARDING 10 CFR 50.55a REQUEST NUMBER RR-PTRR-02

Nine Mile Point Nuclear Station, LLC
May 18, 2012

ATTACHMENT 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING 10 CFR 50.55a REQUEST NUMBER RR-PTRR-02

By letter dated April 27, 2012, pursuant to 10 CFR 50.55a(a)(3)(i), Nine Mile Point Nuclear Station, LLC (NMPNS) requested NRC approval for the application of a proposed alternative to use the provisions of IWA-4132 of the 2004 edition of the ASME Section XI code for the replacement of the reactor recirculation pump seal flange assemblies rotated from stock, for the remainder of the fourth ten-year Inservice Inspection (ISI) Interval for Nine Mile Point Unit 1 (NMP1). This attachment provides supplemental information in response to the request for additional information documented in the NRC's email dated May 11, 2012. Each individual NRC question is repeated (in italics), followed by the NMPNS response.

NRC RAI-1

In Section 4 of the April 27, 2012 submittal it states that the 2010 Edition of ASME Section XI Code has been updated to recognize the acceptability of applying the IWA-4132, Items Rotated From Stock, alternative requirements to other items including pressure-retaining items of pump seal packages (such as the NMP1 recirculation pump seal assemblies). IWA-4132(a) of the 2010 Edition of Section XI states, "The rotation shall be only for testing or preventive maintenance of the removed items."

Explain why the replacement of the NMP1 reactor recirculation pump seal assembly which is exhibiting "degrading performance" is preventive maintenance and not corrective maintenance.

NMPNS Response

The basis for requesting implementation of IWA-4132 for Reactor Recirculation Pump (RRP) mechanical seals was based on the 2010 edition of the ASME code. The overall activity is not preventive maintenance. It is corrective maintenance of the non-pressure retaining portions of the mechanical seal assembly.

ATTACHMENT 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING 10 CFR 50.55a REQUEST NUMBER RR-PTRR-02

NRC RAI-2

In the April 27, 2012 submittal it is stated that the request is being submitted on an emergent basis due to the recent degrading performance of a reactor recirculation pump seal assembly.

Provide a description of the degradation. Also, provide an explanation as to why you have requested this alternative for the remainder of the fourth ten-year Inservice Inspection interval and not for a time period to replace this particular pump seal assembly.

NMPNS Response

Description of degradation

On March 24, 2012, Reactor Recirculation Pump 15 (RRP-15) seal second stage pressure was steady at around 518 psig when a plant down power to about 66% power was performed for control rod sequence exchange and turbine testing. The plant returned to 100% power approximately 15 hours later. On March 25, 2012, the second stage pressure increased to 553 psig and continued to rise to approximately 819 psig over the course of 15 hours. During this time frame, the only observed degradation was in second stage seal pressure rising with no meaningful change in any seal temperature, additionally drywell leakage did not meaningfully change when RRP-15 second stage seal pressure rose. During the afternoon of March 25, 2012 troubleshooting was performed to reduce RRP-15 pump speed which resulted in second stage pressure returning to approximately 526 psig, well within the normal expected performance monitoring pressure range of 490-560 psig.

Since March 25, 2012, this cycling of RRP-15 second stage seal pressure has occurred nine times. There has been varying degrees of seal pressure changes. In all cases, there has not been a meaningful change in seal temperatures or drywell equipment drain leakage rates. Seal temperatures have remained around 95-105F. The most recent pressure rise in the second stage seal pressure started on April 27, 2012 and has remained elevated.

Reason for requesting the alternative for the remainder of the 10 year interval

This alternative is requested for the remainder of the 10 year interval because RRP seals do experience leakage, and require replacement periodically. RRP seals are periodically rebuilt and rotated from one pump to another for preventive maintenance during refueling outages and corrective maintenance of non-pressure retaining portions of the seal assembly. Having the alternative included in the remainder of the 10 year interval will preclude the need to request another 10 CFR 50.55a request on short notice for the same or similar hardship as describe in Attachment 2.

ATTACHMENT 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING 10 CFR 50.55a REQUEST NUMBER RR-PTRR-02

NRC RAI-3

In Section 3 of the April 27, 2012 submittal the requirements of 10 CFR 50.55a(b)(2)(xxvi), Pressure Testing Class 1, 2, and 3 Mechanical Joints are accurately described, which states, "The repair and replacement provisions in IWA-4540(c) of the 1998 Edition of Section XI for pressure testing Class 1, 2, and 3 mechanical joints must be applied when using the 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section. "

The 1998 Edition of ASME Section XI IWA-4540(c) states, "Mechanical joints made in installation of pressure retaining items shall be pressure tested in accordance with IWA-5211 (a). " Sections 3 and 4 of the proposed alternative appear to state that by invoking IWA-4132 "Items Rotated from Stock", of the 2010 Edition of ASME Section XI the pressure testing required by 10 CFR 50.55a(b)(2)(xxvi), Pressure Testing of Class 1, 2 and 3 Mechanical Joints would not be required. The NRC staff believes that all mechanical joints made in the installation of Class 1, 2 and 3 pressure retaining items shall be pressure tested in accordance with IWA-5211(a) except those specifically exempted by IWA-4540(c) of the 1998 Edition of Section XI. The ASME Code has taken actions which have eliminated the requirements for pressure testing mechanical joints in editions and addenda of Section XI later than the 1998 Edition, such as the elimination of IWA-4540(c) and the elimination of pressure testing from IWA-4132. The NRC staff has reviewed these actions and determined the need to place a requirement in the regulations as shown in 10 CFR 50.55a(b)(2)(xxvi) which requires the pressure testing of mechanical joints. The NRC staff has approved requested alternatives for several BWR plants that would allow the pressure of the leakage test done to satisfy the IWA-5211(a) requirement to be reduced (for an example see ADAMS Accession Number ML12025A010).

a. *Section 5.5.a of the request states that the seal cartridge assembly will be bench tested and the seal flange and cap screws will be exposed to 1050 psig, which is slightly greater than normal operating pressure.*

   Does this bench test pressure comply with IWA-5211(a)? If not, explain why it is acceptable.

b. *Section 5.5.b of the request states, "Following seal cartridge installation on the pump, during the normal drywell closeout inspection, an additional visual inspection of the mechanical joint shall be performed at approximately 900 psig system pressure."*

   1. *Does this pressure comply with IWA-5211(a)? If not, explain why it is acceptable.*
   2. *What percentage of the pressure corresponding to 100% rated reactor power is 900 psig?*
   3. *Will the inspection be performed to the Section XI, IWA-2212 VT-2 Examination requirements by a certified VT-2 examiner?*
   4. *During the system leakage test, what hold time will be maintained prior to the visual inspection?*
   5. *Is the joint to be inspected an insulated or non-insulated component?*

NMPNS Response

a. Yes. The specified pressure is consistent with IWA-5211(a). A pressure of 1050 psig is slightly above normal operating pressure of 1035 psig.

b. Section 5.5.b responses, based on RR-PTRR-02, Rev.1 (Attachment 2)

ATTACHMENT 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING 10 CFR 50.55a REQUEST NUMBER RR-PTRR-02

1. No. A pressure of 900 psig is below normal operating pressure of 1035 psig. As stated in RR-PTRR-02 Rev.1 (attachment 2), NMPNS will perform the 900 psig VT-2 after a one-hour hold time for repair/ replacement activities of mechanical joint connections which are non-insulated (such as Rector Recirculation Pump seals), or an eight-hour hold time for insulated components (such as Safety Relief Valves). Since the reactor coolant system pressure boundary is subjected to a leakage test and visual examination at nominal operating pressure (i.e., 1035 psig) near the end of every refueling outage and monitoring systems detect leakage inside the drywell, a leakage test and visual examination performed at 900 psig for the repair/replacement of mechanical joint connections provide adequate assurance of structural and pressure boundary integrity.

2. A pressure of 900 psig is approximately 87% of pressure at 100% rated reactor power.

3. Yes. As stated in RR-PTRR-02 Rev.1 (Attachment 2), NMPNS will perform the 900 psig VT-2 after a one-hour hold time for repair/ replacement activities of mechanical joint connections which are non-insulated (such as Rector Recirculation Pump seals), or an eight-hour hold time for insulated components (such as Safety Relief Valves).

4. Hold times of one-hour for repair/ replacement activities of mechanical joint connections which are non-insulated (such as Rector Recirculation Pump seals), or an eight-hours for insulated components (such as Safety Relief Valves) will be maintained prior to the visual inspection.

5. The Reactor Recirculation Pump seal mechanical joint is non-insulated.

ATTACHMENT 2

NINE MILE POINT NUCLEAR STATION UNIT 1

FOURTH INSERVICE INSPECTION INTERVAL

10 CFR 50.55a REQUEST NUMBER RR-PTRR-02, REV. 1

PROPOSED ALTERNATIVE IN ACCORDANCE WITH

10 CFR 50.55a(a)(3)(ii)

Nine Mile Point Nuclear Station, Unit 1
Fourth Inservice Inspection Interval
10 CFR 50.55a Request Number RR-PTRR-02 Rev. 1

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(ii)

1. **ASME Code Components Affected**

System:	Reactor Recirculation System
Class:	Quality Group A (ASME Code Class 1)
Component Description:	Reactor Recirculation Pump Mechanical Joint
Components Affected:	Reactor Recirculation Pumps 32-187, 32-188, 32-189, 32-190, 32-191

2. **Applicable Code Edition and Addenda**

ASME Section XI 2004 Edition (No Addenda)

3. **Applicable Code Requirements**

a) IWA-4540(a) requires a hydrostatic or system leakage test, in accordance with IWA-5000, for repair/replacement activities performed by welding or brazing on a pressure-retaining boundary prior to, or as part of, returning to service.

b) IWA-5213(b) requires a ten-minute hold time for non-insulated components and a four-hour hold time for insulated components prior to performing the VT-2 leakage test.

c) IWB-5221 (a) requires the system leakage test to be conducted at a pressure not less than the nominal pressure associated with 100% rated reactor power. .

4. **Reason for Request**

10CFR50.55a(b)(2)(xxvi) *Pressure Testing Class* 1, 2, *and* 3 *Mechanical Joints* provides supplemental code requirements to those of IWA-4540(a) stated above. 10CFR50.55a(b)(2)(xxvi) invokes the IWA-4540(c) repair/replacement activity provisions of the 1998 Edition of Section XI for pressure testing of Class 1, 2, and 3 mechanical joints when using the 2001 Edition through the latest edition and addenda of ASME Section XI. Therefore, even though the ISI Code of Record applicable at Nine Mile Point Unit 1 does not require pressure testing and VT-2 examination of mechanical joint connections, the 1998 Edition of Section XI does.

Relief is requested from the test pressure requirement of IWB-5221 (a) (i.e., 1035 psig) on the basis of hardship as cited below.

- Replacement of some components installed via mechanical joints (e.g., Reactor Recirculation Pump Seals) will likely be necessary during a near term maintenance shutdown. These repair/replacement activities will require a VT-2 leakage examination of the mechanical joint connections during unit startup.

- Nominal operation pressure (i.e., 1035 psig) will not be achieved until a minimum of 12 hours after reaching 900 psig during the startup sequence.

- VT -2 leakage examination inside the dry well (primary containment) represents a hardship at the nominal operating pressure of 1035 psig during start-up because of high dose. The plant must be at or very near 100% power to reach this pressure.

- The adverse conditions associated with a containment entry at rated power would also compromise the quality of the leakage examination due to the hardship imposed on examination personnel.

- Performance of a cold leakage test (that is, a non-nuclear heat-up such as that required following a refueling outage) subsequent to a maintenance shutdown is judged to be an imprudent course of action for the reasons described below.

  - Main Steam Lines are flooded with Main Steam Isolation Valves closed.
  - The reactor pressure vessel (RPV) is required to be virtually water solid.
  - Extensive valve manipulations, system lineups, and procedural controls are required in order to heat up and pressurize the reactor coolant system to establish the necessary test pressure.
  - The additional valve lineups and system reconfigurations necessary to support this test will impose an additional challenge to the affected systems. A normal plant startup would then occur, after completion and subsequent recovery from the cold leakage test.
  - Performing a cold leakage test would add approximately 2 days to the shutdown duration.

5. **Proposed Alternative and Basis for Use**

Relief from the requirements is requested pursuant to 10CFR50.55a(a)(3)(ii), in that compliance with the specified requirements would result in a hardship or unusual difficulty. Nine Mile Point Nuclear Station, LLC (NMPNS) requests authorization to perform the following in support of rotating or installing a new Reactor Recirculation pump seal assembly:

1. For any repair/replacement activities of mechanical joint connections NMPNS will perform the required VT-2 leakage examination at a minimum reactor pressure of 900 psig and corresponding saturation temperature.

2. NMPNS will perform the 900 psig VT-2 after a one-hour hold time for repair/ replacement activities of mechanical joint connections which are un-insulated (such as Rector Recirculation Pump seals), or an eight-hour hold time for insulated components (such as Safety Relief Valves).

3. Disposition of any observed leakage will consider the marginal increase in leakage rates that might occur at the nominal operating pressure associated with 100% rated reactor power (i.e. 1035 psig) and the actual pressure when the examination was performed.

4. In addition, drywell monitoring systems would detect leakage that might occur in mechanical joint connections at higher pressures associated with nominal reactor operation. These systems include drywell air temperature and pressure monitoring and the drywell floor and equipment drain sumps.

Since the reactor coolant system pressure boundary is subjected to a leakage test and visual examination at nominal operating pressure (i.e., 1035 psig) near the end of every refueling outage and monitoring systems detect leakage inside the drywell, a leakage test and visual examination performed at 900 psig for the repair/replacement of mechanical joint connections provide adequate assurance of structural and pressure boundary integrity.

6. **Duration of Proposed Alternative**

NMPNS proposes to implement the proposed alternative through the remainder of the current Fourth ten-year In-Service Inspection interval which began August 23, 2009 and is scheduled to end August 22, 2019

should similar Repair/Replacement activities be required.

7. **Precedents**

This alternative is essentially the same as an alternative previously approved by the NRC for plant Hatch (reference TAC No. ME7690, dated January 30, 2012).

8. **References**

None

9. **Attachments**

None