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NINE MILE POINT
NUCLEAR STATION

April 14, 2010

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

License Amendment Request Pursuant to 10 CFR 50.90: Revisions to Primary Coolant System Pressure Isolation Valve Requirements Consistent with Standard Technical Specifications – Response to NRC Request for Additional Information (TAC No. ME2253)

- REFERENCES:**
- (a) Letter from T. A. Lynch (NMPNS) to Document Control Desk (NRC), dated September 18, 2009, License Amendment Request Pursuant to 10 CFR 50.90: Revisions to Primary Coolant System Pressure Isolation Valve Requirements Consistent with Standard Technical Specifications – Technical Specification Sections 3.2.7.1 and 4.2.7.1
 - (b) Letter from R. V. Guzman (NRC) to S. L. Belcher (NMPNS), dated March 18, 2010, Request for Additional Information Regarding Nine Mile Point Nuclear Station, Unit No. 1 – License Amendment Request Re: Revisions to Primary Coolant System Pressure Isolation Valve Requirements Consistent with Standard Technical Specifications (TAC No. ME2253)

Nine Mile Point Nuclear Station, LLC (NMPNS) hereby transmits supplemental information requested by the NRC in support of a previously submitted request for amendment to Nine Mile Point Unit 1 (NMP1) Renewed Operating License DPR-63. The initial request, dated September 18, 2009 (Reference a) proposed to revise Technical Specification Sections 3.2.7.1 and 4.2.7.1, "Primary Coolant System

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Pressure Isolation Valves,” to incorporate requirements that are consistent with Section 3.4.5 of the Improved Standard Technical Specifications, NUREG-1433, Revision 3.1. The supplemental information, provided in Attachment 1 to this letter and in Attachments 2 and 3 referenced therein, responds to the request for additional information (RAI) documented in the NRC’s letter dated March 18, 2010 (Reference b).

In the Significant Hazards Consideration section of Reference (a), the description of the proposed amendment stated that the existing pressure isolation valve (PIV) leakage test frequencies were being replaced with a reference to the Inservice Testing (IST) Program. Based on the supplemental information provided in this letter, the amendment description is modified to state that the existing PIV leakage test frequencies are being replaced with a test frequency of “24 months.” This is considered an administrative change since the 24-month frequency is based on the requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), which is also the basis for preparation of the previously-referenced IST Program. The NMPNS responses to the three standards set forth in 10 CFR 50.92 that were provided in the Significant Hazards Consideration section of Reference (a) are not otherwise affected.

Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this supplemental information to the appropriate state representative. This letter contains no new regulatory commitments.

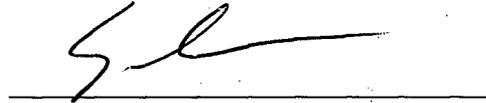
Should you have any questions regarding the information in this submittal, please contact T. F. Syrell, Licensing Director, at (315) 349-5219.

Very truly yours,



STATE OF NEW YORK :
: TO WIT:
COUNTY OF OSWEGO :

I, Sam Belcher, being duly sworn, state that I am Vice President Nine Mile Point, and that I am duly authorized to execute and file this supplemental information on behalf of Nine Mile Point Nuclear Station, LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Nine Mile Point employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 14 day of April, 2010.

WITNESS my Hand and Notarial Seal:


Notary Public

My Commission Expires:

9/12/2013
Date

Lisa M. Doran
Notary Public in the State of New York
Oswego County Reg. No. 01DO6029220
My Commission Expires 9/12/2013

SB/DEV

- Attachments:
1. Nine Mile Point Unit 1 – Response to NRC Request for Additional Information Regarding the Proposed Revisions to the Technical Specification Requirements for Primary Coolant System Pressure Isolation Valves
 2. Revision to Proposed Technical Specification Changes (Mark-up)
 3. Revised Changes to Technical Specification Bases

cc: S. J. Collins, NRC
R. V. Guzman, NRC
Resident Inspector, NRC
A. L. Peterson, NYSERDA

ATTACHMENT 1

**NINE MILE POINT UNIT 1
RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION
REGARDING THE PROPOSED REVISIONS TO THE TECHNICAL
SPECIFICATION REQUIREMENTS FOR PRIMARY COOLANT
SYSTEM PRESSURE ISOLATION VALVES**

ATTACHMENT 1

NINE MILE POINT UNIT 1 RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING THE PROPOSED REVISIONS TO THE TECHNICAL SPECIFICATION REQUIREMENTS FOR REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

By letter September 18, 2009, Nine Mile Point Nuclear Station, LLC (NMPNS) requested an amendment to the Nine Mile Point Unit 1 (NMP1) Renewed Facility Operating License DPR-63. The proposed amendment would revise Technical Specification (TS) Sections 3.2.7.1 and 4.2.7.1, "Primary Coolant System Pressure Isolation Valves," to incorporate requirements that are consistent with Section 3.4.5 of the Improved Standard Technical Specifications, NUREG-1433, Revision 3.1. This attachment provides supplemental information in response to the request for additional information documented in the NRC's letter dated March 18, 2010. Each individual NRC question is repeated (in italics), followed by the NMPNS response.

RAI-1

Provide the specific Surveillance Requirement (SR) frequency intervals for Technical Specification (TS) 3.2.7.1/4.2.7.1 as related to the generic terminology in the applicable American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) and explain how the SR frequency intervals are incorporated into the TSs for NMP1.

Response

NMPNS is revising the proposed change to TS Surveillance Requirement (SR) 4.2.7.1.a. Rather than referencing the Inservice Testing (IST) Program for the reactor coolant system pressure isolation valve (PIV) leakage test frequency, NMPNS proposes to specify the PIV leakage test frequency as "24 months."

The 24-month leakage test frequency is established in accordance with the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), 2004 Edition, which is the applicable code for the NMP1 fourth ten-year IST interval. In accordance with the OM Code, ISTC-1300, the PIVs are Category A valves since their seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their required function. For Category A valves other than containment isolation valves, the OM Code, ISTC-3630, specifies a test frequency of at least once every 2 years. Since the OM Code is also the basis for preparation of the previously referenced IST program, the proposed change to TS SR 4.2.7.1.a is considered administrative in nature.

Specifying the leakage test frequency as 24 months rather than 2 years is consistent with the terminology used in the Improved Standard Technical Specifications, NUREG-1433. The PIV test frequency will actually appear in the NMP1 surveillance scheduling and tracking database as 730 days. The provisions of NMP1 TS SR 4.0.2, which allow a maximum surveillance interval extension of 25% of the specified interval, would be applicable to the PIV leakage test frequency.

Attachment 2 provides revised markups of existing TS pages to show the proposed changes. Only Insert 5 for TS Page 116 is affected. Revisions to the proposed TS Bases that reflect the proposed TS changes are provided in Attachment 3 for information only. Only new TS Bases Page 117b is affected. The revisions are indicated by a vertical bar drawn in the right hand margins.

ATTACHMENT 1

NINE MILE POINT UNIT 1 RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING THE PROPOSED REVISIONS TO THE TECHNICAL SPECIFICATION REQUIREMENTS FOR REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

RAI-2

TS 4.2.7.1.a is being changed to reference the Inservice Testing (IST) Program for pressure isolation valve (PIV) test frequency. The fourth interval IST Program Plan (Agencywide Documents Access Management System Accession No. ML081900568) states the frequency is per the TSs. Explain how the frequency is determined using the IST Program.

Response

As described in the response to RAI-1 above, NMPNS is revising the proposed change to TS SR 4.2.7.1.a to specify the PIV leakage test frequency as “24 months” rather than referencing the IST Program. The 24-month test frequency is based on the ASME OM Code frequency for Category A valves other than containment isolation valves. Following NRC approval of the license amendment request, appropriate changes to the IST Program documentation will be incorporated as part of normal license amendment implementation activities.

ATTACHMENT 2

REVISION TO PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

The current versions of the following NMP1 Technical Specification (TS) pages have been marked-up by hand to reflect the revised proposed changes:

116

117

REACTOR

LIMITING CONDITION FOR OPERATION

3.2.7.1 PRIMARY COOLANT SYSTEM PRESSURE ISOLATION VALVES

(PIV) LEAKAGE

Applicability:

Applies to the operating status of isolation valves for systems connected to the primary coolant system.

Objective:

To increase the reliability of primary coolant system pressure isolation valves thereby reducing the potential of an intersystem loss of coolant accident.

Specification:

Insert 1

a. The integrity of each pressure isolation valve listed in Table 3.2.7.1 shall be demonstrated. Valve leakage shall not exceed the amounts indicated.

Insert 3

c

If Specification a cannot be met, an orderly shutdown shall be initiated within 1 hour and the reactor shall be in the cold shutdown condition within 10 hours.

3.2.7.1.b

Insert 2

REACTOR

SURVEILLANCE REQUIREMENT

4.2.7.1 PRIMARY COOLANT SYSTEM PRESSURE ISOLATION VALVES

(PIV) LEAKAGE

Applicability:

Applies to the periodic testing of primary coolant system pressure isolation valves.

Objective:

To increase the reliability of primary coolant system pressure isolation valves thereby reducing the potential of an intersystem loss of coolant accident.

Specification:

Insert 4

Insert 5

a. Periodic leakage testing (a) on each valve listed in Table 3.2.7.1 shall be accomplished prior to exceeding 2% power while in the power operating condition every time the plant is placed in a cold shutdown condition for refueling, each time the plant is placed in a cold shutdown condition for 72 hours if testing has not been accomplished in the preceding 9 months, and prior to returning the valve to service after maintenance, repair or replacement work is performed.

(a) To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with the leakage criteria.

DELETED

TABLE 3.2.7.1

PRIMARY COOLANT SYSTEM PRESSURE ISOLATION VALVES

<u>System</u>	<u>Valve No.</u>	<u>Maximum^(a) Allowable Leakage</u>
1. Core Spray System	40-03	≤ 5.0 gpm
	40-13	≤ 5.0 gpm
2. Condensate Supply to Core Spray (Keep Fill System)	40-20	≤ 5.0 gpm
	40-21	≤ 5.0 gpm
	40-22	≤ 5.0 gpm
	40-23	≤ 5.0 gpm
3. Core Spray Supply to Shutdown Cooling (Waterseal)	38-165	≤ 0.375 gpm
	38-166	≤ 0.375 gpm
	38-167	≤ 0.375 gpm
	38-168	≤ 0.375 gpm
	38-169	≤ 0.375 gpm
	38-170	≤ 0.375 gpm
	38-171	≤ 0.375 gpm
38-172	≤ 0.375 gpm	

Footnote:

- (a) 1. Leakage rates shall be limited to 0.5 gpm per nominal inch of valve diameter up to a maximum of 5 gpm.
2. Test differential pressure shall not be less than 150 psid.
3. The observed leakage at test differential pressure shall be adjusted to the functional maximum pressure differential.

INSERT 1 (for TS Page 116; Specification 3.2.7.1)

-----NOTES-----

1. Separate specification entry is allowed for each flow path.
2. Enter applicable specifications for systems made inoperable by PIVs.

INSERT 2 (for TS Page 116; Specification 3.2.7.1.a)

be within limit during the power operating and hot shutdown reactor operating conditions.

INSERT 3 (for TS Page 116; New Specification 3.2.7.1.b)

- b. If one or more flow paths with leakage from one or more PIVs is not within limit:
 1. Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated automatic, or check valve within 4 hours, and
 2. Isolate the high pressure portion of the affected system from the low pressure portion by use of a second closed manual, deactivated automatic, or check valve within 72 hours.

Each valve used to satisfy Specifications b.1 and b.2 above must have been verified to meet Specification 4.2.7.1.a and be in the reactor coolant system boundary or the high pressure portion of the system.

INSERT 4 (for TS Page 116; Specification 4.2.7.1)

-----NOTE-----

Not required to be performed in the hot shutdown reactor operating condition.

INSERT 5 (for TS Page 116; Specification 4.2.7.1.a)

The equivalent leakage of each reactor coolant system PIV shall be verified to be ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at a reactor coolant system pressure ≥ 1010 psig and ≤ 1050 psig, at a frequency ~~in accordance with the Inservice Testing Program~~ of 24 months.

ATTACHMENT 3

REVISED CHANGES TO TECHNICAL SPECIFICATION BASES

New proposed NMP1 Technical Specifications (TS) Bases (Pages 117a and 117b) that reflect the proposed TS changes are provided for information only.

NEW TS BASES PAGE

BASES FOR 3.2.7.1 AND 4.2.7.1 REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE (PIV) LEAKAGE

The function of reactor coolant system (RCS) PIVs is to separate the high pressure RCS from an attached low pressure system. This protects RCS pressure boundary described in 10 CFR 50.2 and 10 CFR 50.55a(c) (Refs. 1 and 2). The PIVs, which are listed in the NMP1 UFSAR (Reference 3), are designed to meet the requirements of Reference 4. During their service lives, these valves can exhibit varying amounts of reactor coolant leakage through either normal operational wear or mechanical deterioration. Leakage through these valves is not included in any allowable leakage specified in Specification 3.2.5, "Reactor Coolant System Leakage."

The RCS PIV Specification allows RCS high pressure operation when leakage through these valves exists in amounts that do not compromise safety. Although this specification provides a limit on allowable PIV leakage rate, its main purpose is to prevent overpressure failure of the low pressure portions of connecting systems. The leakage limit is an indication that the PIVs between the RCS and the connecting systems are degraded or degrading. PIV leakage could lead to overpressure of the low pressure piping or components. Failure consequences could be a loss of coolant accident (LOCA) outside of containment, an unanalyzed event that could degrade the ability for low pressure injection. In Reference 5, it was concluded that periodic leakage testing of the PIVs can substantially reduce intersystem LOCA probability.

This Specification applies in the power operating and hot shutdown reactor operating conditions because the PIV leakage potential is greatest when the RCS is pressurized. In the cold shutdown, refueling, and major maintenance reactor operating conditions, leakage limits are not provided because the lower reactor coolant pressure results in a reduced potential for leakage and for a LOCA outside the containment. Accordingly, the potential for the consequences of reactor coolant leakage is far lower during these conditions.

Note 1 to Specification 3.2.7.1 has been provided that allows separate Condition entry for each affected RCS PIV flow path because the actions in Specification 3.2.7.1.b provide appropriate compensatory measures for separate, affected RCS PIV flow paths. Note 2 to Specification 3.2.7.1 requires an evaluation of affected systems if a PIV is inoperable. The leakage may have affected system operability, or isolation of a leaking flow path with an alternate valve may have degraded the ability of the interconnected system to perform its safety function. As a result, the applicable actions for systems made inoperable by PIVs must be entered. This ensures appropriate remedial actions are taken, if necessary, for the affected systems.

If leakage from one or more RCS PIVs is not within limit, the flow path must be isolated by at least one closed manual, deactivated automatic, or check valve within 4 hours. Four hours provides time to reduce leakage in excess of the allowable limit and to isolate the flow path if leakage cannot be reduced while corrective actions to reseal the leaking PIVs are taken. The 4 hours allows time for these actions and restricts the time of operation with leaking valves.

Specification 3.2.7.1.b.2 specifies that the double isolation barrier of two valves be restored by closing another valve qualified for isolation or restoring one leaking PIV. The 72 hour time limit considers the time required to complete the action, the low probability of a second valve failing during this time period, and the low probability of a pressure boundary rupture of the connected low pressure piping when overpressurized to reactor pressure (Ref. 6).

NEW TS BASES PAGE

BASES FOR 3.2.7.1 AND 4.2.7.1 REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE (PIV) LEAKAGE

Valves used for isolation must meet the same leakage requirements as the PIVs and must be on the RCPB or the high pressure portion of the system.

If leakage cannot be reduced or the system isolated, the plant must be brought to an operating condition in which the Specification does not apply. To achieve this status, an orderly shutdown must be initiated within one hour and the plant be brought to the cold shutdown condition within 10 hours. This action may reduce the leakage and also reduces the potential for a LOCA outside the containment.

Performance of leakage testing on each reactor coolant system PIV is required to verify that leakage is below the specified limit and to identify each leaking valve. The leakage limit of 0.5 gpm per inch of nominal valve size up to 5 gpm maximum applies to each valve. Leakage testing requires a stable pressure condition. For two PIVs in series, the leakage requirement applies to each valve individually and not to the combined leakage across both valves. If the PIVs are not individually leakage tested, one valve may have failed completely and not be detected if the other valve in series meets the leakage requirement. In this situation, the protection provided by redundant valves would be lost.

Reference 4 permits leakage testing at a lower pressure differential than between the specified maximum RCS pressure and the normal pressure of the connected system during RCS operation (the maximum pressure differential). The observed rate may be adjusted to the maximum pressure differential by assuming leakage is directly proportional to the pressure differential to the one-half power.

The 24-month Frequency required by the Inservice Testing Program is ~~within~~ based on the ASME OM Code Frequency. Specification 4.2.7.1 is modified by a Note that states the leakage Surveillance is not required to be performed in the hot shutdown condition. Entry into this condition is permitted for leakage testing at high differential pressures with stable conditions that are not possible in the cold shutdown or refueling conditions.

References:

1. 10 CFR 50.2.
2. 10 CFR 50.55a(c).
3. UFSAR, Section V.D.
4. ASME Code for Operation and Maintenance of Nuclear Power Plants.
5. Letter from T. A. Ippolito (NRC) to D. P. Dise (NMPC) dated April 20, 1981, "Order for Modification of License Concerning Primary Coolant System Pressure Isolation Valves," included attached Technical Evaluation Report TER-C5257-237, Rev. 1, dated March 20, 1981.
6. NEDC-31339, "BWR Owners Group assessment of Emergency Core Cooling System Pressurization in Boiling Water Reactors," November 1986.