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NINE MILE POINT
NUCLEAR STATION

June 1, 2012

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

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit No. 2, Docket No. 50-410

Emergency License Amendment Request Pursuant to 10 CFR 50.90: Revision of the Main Steam Isolation Valve Allowable Leakage Rate Limit

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC (NMPNS) hereby requests an emergency amendment to Nine Mile Point Unit 2 (NMP2) Renewed Facility Operating License NPF-69. The proposed amendment would modify Technical Specification (TS) Section 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," by revising Surveillance Requirement (SR) 3.6.1.3.12 for the leakage rate through the main steam isolation valves (MSIV). The current MSIV leakage rate limit of less than or equal to 24 standard cubic feet per hour (scfh) would be revised to allow a leakage rate of less than or equal to 40 scfh through any one of the four main steam lines. The allowable leakage rate of 24 scfh would remain unchanged for the other three main steam lines.

During the current NMP2 refueling outage, one MSIV (2MSS*AOV7C located outside the primary containment) failed the 10 CFR 50, Appendix J, as-left leakage rate test. Despite the performance of extensive troubleshooting and maintenance activities on both the valve actuator and valve internals, subsequent leakage rate test results still exceeded 24 scfh. Operability of the MSIVs is required prior to plant startup. Thus, the inability to achieve acceptable as-left leakage rate test results for valve 2MSS*AOV7C is preventing resumption of operation of the unit and achieving rated power. Information contained in Attachment 3 to the Enclosure demonstrates that the criteria of 10 CFR 50.91(a)(5) are met for issuance of the amendment on an emergency basis.

The Enclosure provides a description and technical bases for the proposed amendment and an existing TS page marked up to show the proposed changes. NMPNS has concluded that the activities associated with

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the proposed amendment represent no significant hazards consideration under the standards set forth in 10 CFR 50.92. Upon approval, NMPNS will implement the amendment within three days.

Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this license amendment request, with Enclosure, to the appropriate state representative.

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,

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

I, Ken Langdon, being duly sworn, state that I am Vice President-Nine Mile Point, and that I am duly authorized to execute and file this license amendment request 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 Onondaga, this 1st day of June, 2012.

WITNESS my Hand and Notarial Seal:

Notary Public

DENNIS E. VANDEPUTTE
Notary Public, State of New York
No. 01VA6183401
Qualified in Onondaga County
Certificate Filed in Oswego County
Commission Expires 3/17/2016

My Commission Expires:

3/17/2016
Date

KL/DEV

Enclosure: Evaluation of the Proposed Change

cc: Regional Administrator, Region I, NRC
Project Manager, NRC
Resident Inspector, NRC
A. L. Peterson, NYSERDA

ENCLOSURE

EVALUATION OF THE PROPOSED CHANGE

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1.0 SUMMARY DESCRIPTION

This evaluation supports a request to amend Renewed Facility Operating License NPF-69 for Nine Mile Point Unit 2 (NMP2).

The proposed amendment would revise Technical Specification (TS) Section 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," by revising Surveillance Requirement (SR) 3.6.1.3.12 for main steam isolation valve (MSIV) leakage rate. The current leakage rate limit of less than or equal to 24 standard cubic feet per hour (scfh) for each MSIV would be revised to allow a leakage rate of less than or equal to 40 scfh through any one of the four main steam lines. The allowable leakage rate of 24 scfh would remain unchanged for the other three main steam lines. Thus, the total allowable main steam line leakage rate would increase from 96 scfh to 112 scfh. The allowable leakage rate through a particular steam line would apply to each of the two MSIVs in that line.

During the current NMP2 refueling outage, one MSIV (2MSS*AOV7C located outside the primary containment) failed the 10 CFR 50, Appendix J, as-left leakage rate test, with a measured leakage rate of approximately 32 scfh. Despite the performance of extensive troubleshooting and maintenance activities on both the valve actuator and valve internals, the subsequent leakage rate test result still exceeded 24 scfh. The calculated radiological consequences for design basis accidents remain within applicable regulatory limits when considering the proposed increase in allowable leakage rate through one main steam line, thereby maintaining public health and safety.

The additional information provided in Attachment 3 demonstrates that the criteria of 10 CFR 50.91(a)(5) are met for issuance of the proposed amendment on an emergency basis.

2.0 DETAILED DESCRIPTION

2.1 Description of the Proposed Change

The current TS SR 3.6.1.3.12 requires the leakage rate through each MSIV to be less than or equal to 24 scfh when tested at greater than or equal to 40 psig.

The proposed change would revise SR 3.6.1.3.12 to state the following:

> Verify leakage rate through any one main steam line is $\leq$ 40 scfh and through each of the other three main steam lines is $\leq$ 24 scfh, when tested at $\geq$ 40 psig.

Attachment 1 provides the existing TS page marked-up to show the proposed changes. A marked-up page showing corresponding changes to the TS Bases is provided in Attachment 2 for information only. The TS Bases changes will be processed in accordance with the NMP2 TS Bases Control Program (TS 5.5.10).

2.2 Background

The main steam system transports steam from the reactor vessel to the main turbine and other steam-driven auxiliary equipment. Each of the four main steam lines contains two MSIVs. One MSIV in each main steam line is located inside the primary containment, and the other is located outside the primary containment. The MSIVs close automatically to limit fission product release from the primary containment following a design basis loss of coolant accident (LOCA) and to limit the release of reactor

coolant in the event of a main steam line pipe break outside primary containment. Each MSIV is a 26-inch, Y-pattern globe valve.

The current NMP2 analyses of the radiological consequences of design basis accidents (DBA) are based on alternative source term (AST) methodology using the guidance described in NRC Regulatory Guide (RG) 1.183 and Standard Review Plan (SRP) 15.0.1. The following four bounding accidents are analyzed using the AST methodology:

- Loss of coolant accident (LOCA)
- Main steam line break accident
- Fuel handling accident
- Control rod drop accident

NMPNS submitted a license amendment request to adopt the AST methodology by letter dated May 31, 2007 (Reference 1), as supplemented by NMPNS letter dated January 7, 2008 (Reference 2). The NMP2 AST analyses were reviewed and approved by the NRC, as discussed in the safety evaluation accompanying the NRC's issuance of License Amendment No. 125 on May 29, 2008 (Reference 3). These analyses were performed based on the extended power uprate (EPU) power level of 3,988 MWt.

The proposed increase in allowable main steam line leakage rate affects only the LOCA analysis, which is summarized in Section 15.6.5.5 of the NMP2 Updated Safety Analysis Report (USAR). The current LOCA analysis assumes a leakage rate of 24 scfh (the current TS limit) for each MSIV.

During the current NMP2 refueling outage, one MSIV (2MSS*AOV7C located outside the primary containment) failed the as-left leakage rate test, with a measured leakage rate of approximately 32 scfh. Despite the performance of extensive troubleshooting and maintenance activities on both the valve actuator and valve internals, subsequent leakage rate test results (ranging from about 27 to 34 scfh) still exceeded 24 scfh. The analyses and evaluations discussed in the next section demonstrate that increasing the TS leakage rate limit through any one main steam line from 24 scfh to 40 scfh will not result in the radiological consequences of the design basis LOCA exceeding any applicable regulatory limits and is, therefore, acceptable.

3.0 TECHNICAL EVALUATION

The impact of the proposed change in the allowable main steam line leakage rate on the calculated radiological consequences of a LOCA for the control room and offsite receptors has been evaluated. The NMP2 LOCA radiological consequence analyses submitted in Reference 1 and summarized in USAR Section 15.6.5.5 are based on AST methodology and consider core inventory release magnitude, composition, and timing of release; pathways for transport of the activity released from the core to the environment; appropriate dilution, holdup, and radionuclide removal mechanisms; and shine dose pathways. The release pathways included in the analyses are:

1. Primary containment (PC) leakage directly to the secondary containment (SC; i.e., the Reactor Building).
2. Traversing in-core probe (TIP) leakage from the PC to the SC.
3. Main steam line leakage from the PC to the environment (bypasses SC).
4. Leakage through other piping system containment isolation valves that bypasses SC.
5. Engineered safety feature system leakage from the PC into the SC.

6. Release via the PC purge valves (containment purge in the pressure control mode is assumed to be in progress when the LOCA occurs).
7. Shine dose pathways (Reactor Building to Control Room, external plume to Control Room, and Control Room filter to Control Room).

The LOCA analyses assume a concurrent loss of offsite power and consider two single failure scenarios:

Scenario 1 – One MSIV fails to close
Scenario 2 – One division of emergency AC power fails to operate (emergency diesel generator failure)

The analyses have determined that the case involving failure of one MSIV to close results in the limiting calculated radiological consequences.

The proposed change in the allowable leakage rate through one main steam line affects only the main steam line leakage release pathway and its associated holdup and radionuclide removal mechanisms. As discussed in Reference 1, the main steam line leakage pathway model includes four parallel main steam line flow paths to the environment. For the three lines with both the inboard and outboard MSIVs closed, the model credits deposition of activity only in the piping between the closed valves. Particulate settling rates were calculated by using the 3rd percentile values from AEB-98-03, "Assessment of Radiological Consequences for the Perry Pilot Plant Application using the Revised (NUREG-1465) Source Term." For the main steam line with an MSIV that is assumed not to close, the volume between the MSIVs is ignored and no credit for deposition is taken. In addition, credit is taken for the delay of activity releases via the main steam line leakage pathway consisting of the time for the leakage to travel from the outboard MSIV to the point of release to the environment.

The proposed amendment would allow a leakage rate through any one main steam line of 40 scfh, while maintaining the allowable leakage rate limit of 24 scfh for each of the other three main steam lines. This change has been incorporated into the LOCA analysis model as follows:

- The 40 scfh leakage rate is assumed to occur in the main steam line in which one of the MSIVs fails to close. The activity release delay time for this main steam line decreases from 5.26 hours to 4.25 hours. As noted above, since only one MSIV is closed, no credit is taken for deposition of activity in this line.

- For the other three main steam lines, the leakage rate remains 24 scfh. The activity release delay time is updated from 7.11 hours to 8.74 hours, and deposition of activity in the piping between the closed inboard and outboard MSIVs is credited as before.

As described in USAR Section 6.2.3.2.4, the calculation of activity release delay times is based on characterizing the leakage flow as isentropic flow through an orifice. The calculated activity release delay times noted above (4.25 hours and 8.74 hours) incorporate the post-LOCA long-term primary containment pressure and temperature profiles developed for the EPU license amendment. The EPU analyses utilized the General Electric SHEX computer code and credited more effective containment heat removal due to improved residual heat removal system heat exchanger performance, resulting in more effective containment pressure reduction. This, in turn, results in longer calculated delay times for activity releases via the main steam line leakage pathways. The NRC accepted the EPU primary containment analyses in Section 2.6 of the safety evaluation accompanying the NRC's issuance of License Amendment No. 140 on December 22, 2011 (Reference 4).

Other than the above, the methodology, inputs, and assumptions used in the current licensing basis LOCA analysis remain unchanged.

The calculated radiological consequences for the postulated LOCA, with the effects of the proposed changes incorporated, are provided in Table 1, along with results for the current licensing basis analysis and the applicable regulatory limits. The Control Room dose is most affected because the main steam line leakage pathway release is assumed to be at ground level. As indicated in Table 1, the Exclusion Area Boundary (EAB), Low Population Zone (LPZ), and Control Room doses all remain within the regulatory limits.

Table 1

LOCA Radiological Consequence Analysis for Increased MSIV Leakage Through One Main Steam Line

(rem Total Effective Dose Equivalent - TEDE)

Dose Component	Offsite Dose		Control Room Dose (30-day)
	EAB (2-hr)	LPZ (30-day)	
Limiting Case (MSIV failure)	0.76	0.79	1.82
Regulatory Limit (10 CFR 50.67)	25	25	5
Current Analysis*	0.66	0.77	1.65

* EAB, LPZ, and Control Room doses from USAR Section 15.6.5 (Table 15.6-16b).

The impact of the proposed amendment on habitability of the Technical Support Center (TSC) following a LOCA has also been evaluated. The evaluation concluded that the combined 30-day inhalation, immersion, and shine doses do not exceed 5 rem TEDE.

The impact of the increase in leakage rate through one main steam line on compliance with 10 CFR 50.49, "Environmental qualification of electrical equipment important to safety for nuclear power plants," has been evaluated. The radiation dose basis for the environmental qualification (EQ) analyses is Technical Information Document (TID)-14844, "Calculation of Distance Factors for Power and Test Reactor Sites." The evaluation confirmed that equipment already included in the EQ program continues to be qualified for the radiological environment resulting from the increased main steam line leakage. The evaluation also identified minor changes in the EQ qualification basis resulting in two new components requiring qualification. These two components (Rosemount transmitters in the control building heating, ventilation, and air conditioning system) have been confirmed to be fully qualified for the accident environment, thereby meeting the requirements of 10 CFR 50.49.

The impact of the increase in leakage through one main steam line on post-accident vital area access (NUREG-0737, Item II.B.2) has also been evaluated. The radiation dose basis for the vital area access analyses is TID-14844. The main steam line leakage pathway has a low contribution to the NMP2 vital

area doses. The evaluation confirms that doses are less than the 10 CFR 50, Appendix A, General Design Criterion 19 limits and, therefore, vital area access is maintained.

The proposed revision to TS SR 3.6.1.3.12 changes the leakage rate acceptance limit from an "each MSIV" basis to a "through each main steam line" basis. This is similar to the Standard Technical Specifications for General Electric BWR/6 Plants (NUREG-1434, Revision 4.0) and aligns with the manner in which the main steam line leakage pathway is modeled in the LOCA radiological consequence analyses. The allowable leakage rate through a particular main steam line will apply to each of the two MSIVs in that line.

For NMP2, the measured MSIV leakage rates are excluded from the combined leakage rate of 0.6 L_a for Type B and C leak tests, in accordance with TS 5.5.12.a. Thus, the proposed amendment does not affect the total leakage through valves and penetrations subject to the primary containment Type B and C total leakage requirements.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 50.36(c)(3), "Surveillance requirements," states that SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. The proposed change to TS SR 3.6.1.3.12 continues to assure that leakage though the main steam lines is maintained within the values assumed in the LOCA radiological consequence analyses and, therefore, the limiting conditions for operation will be met.

10 CFR 50.67, "Accident source term," establishes acceptable radiation dose limits resulting from design basis accidents for an individual located at the exclusion area boundary or low population zone, and for occupants of the control room. The analyses performed by NMPNS demonstrate that the calculated radiological consequences of a design basis LOCA with increased leakage through one main steam line meet the radiation dose limits specified in 10 CFR 50.67.

10 CFR 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," describes test requirements that provide assurance that the primary containment, including those systems and components that penetrate the primary containment, do not exceed the allowable leakage rate values specified in the TS and their associated bases. The proposed amendment maintains compliance with the requirements of 10 CFR 50, Appendix J.

Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," provides guidance for implementation of 10 CFR 50.67, including assumptions and methods that are acceptable to the NRC staff for performing design basis radiological analyses using an AST. The NMP2 radiological consequence analyses performed for design basis accidents have utilized the guidance in RG 1.183 and in Standard Review Plan 15.0.1. In Reference 3 the NRC concluded that the proposed implementation of AST at NMP2 was acceptable and that there was reasonable assurance that the radiation doses calculated by NMPNS complied with the requirements of 10 CFR 50.67 and the guidance of RG 1.183. The analyses performed for the proposed amendment continue to follow the guidance in RG 1.183 and use the same assumptions and methods approved by the NRC in References 3 and 4.

4.2 Significant Hazards Consideration

Nine Mile Point Nuclear Station, LLC (NMPNS) is requesting an amendment to the Renewed Facility Operating License NPF-69 for Nine Mile Point Unit 2 (NMP2). The proposed amendment would revise Technical Specification (TS) Section 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," by revising Surveillance Requirement (SR) 3.6.1.3.12 for main steam isolation valve (MSIV) leakage rate. The current leakage rate limit of less than or equal to 24 standard cubic feet per hour (scfh) for each MSIV would be revised to allow a leakage rate of less than or equal to 40 scfh through any one of the four main steam lines. The allowable leakage rate of 24 scfh would remain unchanged for the other three main steam lines.

NMPNS has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed amendment revises a TS surveillance requirement to allow a higher leakage rate through any one main steam line. The proposed amendment does not involve any changes to the design or operation of the MSIVs or any other plant systems or equipment as described in the NMP2 Updated Safety Analysis Report (USAR). Closure of one or more MSIVs initiates a reactor coolant system pressure transient that is evaluated in Section 15.2.4 of the NMP2 USAR. The proposed change to the allowable leakage rate through one main steam line does not affect either the manual or automatic actions that would cause MSIVs to close and, therefore, does not increase the probability of an MSIV closure event.

   The radiological consequences of the design basis loss of coolant accident have been evaluated considering the proposed increase in the allowable leakage rate through one main steam line. The calculated radiation doses continue to be less than the limits specified in 10 CFR 50.67. In addition, the impact on post-accident vital area access and environmental qualification of electrical equipment important to safety is minimal and acceptable. Thus, the consequences of previously evaluated accidents are not significantly increased.

   Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The safety function of the MSIVs is to isolate the main steam lines in a timely manner to preclude the uncontrolled release of radioactive steam. The change in the allowable leakage rate through one main steam line does not involve any accident initiators and does not affect the ability of the MSIVs to perform their safety function. The assumed accident performance of other plant structures, systems and components is also not affected. These changes do not involve any physical alteration of the plant (i.e., no new or different type of equipment will be installed), and

installed equipment is not being operated in a new or different manner. Thus, no new failure modes are introduced.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed amendment has no impact on equipment design or operation, and there are no changes being made to safety limits or limiting safety system settings. There are no changes to setpoints at which protective actions are initiated, and the operability requirements for equipment assumed to operate for accident mitigation are not affected.

Revised radiological consequence analyses have been performed to assess the change in allowable leakage rate through one main steam line. These analyses utilized methods and assumptions that are in accordance with the guidance of NRC Regulatory Guide 1.183 and have been previously reviewed and approved by the NRC. The analysis results demonstrate that the calculated radiation doses for the design basis loss of coolant accident are less than the limits specified in 10 CFR 50.67.

Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Based on the above, NMPNS concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.3 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve: (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. Letter from K. J. Nietmann (NMPNS) to Document Control Desk (NRC) dated May 31, 2007, License Amendment Request Pursuant to 10 CFR 50.90: Application of Alternative Source Term (ML071580314)

2. Letter from K. J. Polson (NMPNS) to Document Control Desk (NRC) dated January 7, 2008, License Amendment Request Pursuant to 10 CFR 50.90: Application of Alternative Source Term – Response to NRC Request for Additional Information (TAC No. MD5758) (ML080140133)

3. Letter from R. V. Guzman (NRC) to K. J. Polson (NMPNS) dated May 29, 2008, Nine Mile Point Nuclear Station, Unit No. 2 – Issuance of Amendment Re: Implementation of Alternative Radiological Source Term (TAC No. MD5758) (ML081230439)

4. Letter from R. V. Guzman (NRC) to K. Langdon (NMPNS) dated December 22, 2011, Nine Mile Point Nuclear Station, Unit No. 2 – Issuance of Amendment Re: Extended Power Uprate (TAC No. ME1476) (ML113300040)

ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

The current version of Technical Specification page 3.6.1.3-13 has been marked-up by hand to reflect the proposed changes.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.12	Verify leakage rate through ~~each MSIV is ≤ 24 scfh~~ when tested at ≥ 40 psig.	In accordance with 10 CFR 50 Appendix J Testing Program Plan
SR 3.6.1.3.13	Verify combined leakage rate through hydrostatically tested lines that penetrate the primary containment is within limits.	In accordance with 10 CFR 50 Appendix J Testing Program Plan

any one main steam line is ≤ 40 scfh and through each of the other three main steam lines is ≤ 24 scfh,

ATTACHMENT 2

CHANGES TO TECHNICAL SPECIFICATION BASES (MARK-UP)

The current version of Technical Specification Bases page B 3.6.1.3-19 has been marked-up by hand to reflect the proposed changes. This Bases page is provided for information only.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.12

Insert A

The analyses in Reference ~~1~~ 2 are based on leakage that is less than the specified leakage rate. ~~Leakage through each MSIV must be ≤ 24 scfh when tested at 40 psig.~~ This ensures that MSIV leakage is properly accounted for in determining the overall primary containment leakage rate. The Frequency is required by the 10 CFR 50 Appendix J Testing Program Plan.

MSIV leakage is considered part of L_a.

SR 3.6.1.3.13

Surveillance of hydrostatically tested lines provides assurance that the calculation assumptions of Reference 1 are met. The acceptance criteria for the combined leakage of all hydrostatically tested lines is 1 gpm times the total number of hydrostatically tested PCIVs when tested at $\geq$ 1.10 P_a (43.73 psig). The combined leakage rates must be demonstrated in accordance with the leakage test Frequency required by the 10 CFR 50 Appendix J Testing Program Plan.

REFERENCES

1. Technical Requirements Manual.

2. USAR, Section 15.6.5.

3. USAR, Section 15.6.4.

4. USAR, Section 15.2.4.

5. 10 CFR 50.36(c)(2)(ii).

6. USAR, Section 6.2.4.3.2.

7. 10 CFR 50, Appendix J Option B.

8. NEDO-32977-A, "Excess Flow Check Valve Testing Relaxation," June 2000.

INSERT A (for TS Bases Page B 3.6.1.3-19)

Leakage through any one main steam line must be $\leq$ 40 scfh and through each of the other three main steam lines must be $\leq$ 24 scfh, when tested at $\geq$ 40 psig. The allowable leakage rate through a particular main steam line applies to each of the two MSIVs in that line.

ATTACHMENT 3

EXPLANATION OF THE EMERGENCY AND

WHY THE SITUATION COULD NOT HAVE BEEN AVOIDED

ATTACHMENT 3
EXPLANATION OF THE EMERGENCY AND WHY THE SITUATION COULD NOT HAVE BEEN AVOIDED

On April 9, 2012, Nine Mile Point Unit 2 (NMP2) commenced a planned shutdown to begin a refueling outage. Thereafter, an as-found leakage rate test of main steam isolation valve (MSIV) 2MSS*AOV7C was completed on April 12, 2012. This is the outboard MSIV for the "C" main steam line. The test results were satisfactory, with a measured leakage rate of 19.1 scfh versus the 24 scfh limit specified in Technical Specification (TS) Surveillance Requirement (SR) 3.6.1.3.12. Thereafter, the valve actuator was removed and replaced with a new actuator in accordance with the NMP2 preventive maintenance program.

An as-left 10 CFR 50, Appendix J, leakage rate test for 2MSS*AOV7C was performed on May 11, 2012. The measured leakage rate exceeded the 24 scfh acceptance limit; however, the valve was not fast-stroked closed by normal means (via the actuator) for the test; therefore, the leakage rate test was repeated on May 13, 2012 after properly fast-stroke closing the valve. The test again failed, with a measured leakage rate of approximately 32 scfh. In an effort to remove any minor foreign material from the valve seating surfaces, a gravity-fed water flush was performed on May 14, 2012 and a pressurized air flush was performed on May 15, 2012. Troubleshooting was also performed to verify that there was no other significant leakage from the test boundary. After each flush, the valve was re-tested. In both cases, the measured leakage rate remained at approximately 32 scfh.

At this point, more extensive repair activities were initiated. Starting May 16, 2012, the actuator was removed from the valve and a vendor was mobilized to inspect the valve internals to identify needed repairs. Visual inspections and mapping of the valve internal seating surfaces were performed, and the piston disc internal stem disc assembly was leak tested with satisfactory results. Cleaning, polishing, lapping, and blue checks were performed and were believed sufficient to achieve acceptable leakage rate test results. The valve and its actuator were subsequently re-assembled, and a leakage rate test was performed on May 22, 2012. The test was again unsuccessful.

Subsequent to the May 22, 2012 test results, additional troubleshooting was performed, including testing the thrust of the actuator and verifying test boundary valve lineups. Bolted connections and valve packing were checked for leaks. An information-only leakage rate test performed on May 25, 2012 revealed no improvement in the measured leakage rate. With all troubleshooting actions exhausted, the actuator was again removed and the valve was re-entered. Visual inspections were performed on the valve internals, including liquid penetrant exams on valve seating surfaces to search for indications. Subsequent to performing visual inspections, a new stem disc and piston disc assembly was fitted up and leak tested satisfactorily. Blue checks were performed satisfactorily at the stem disc to piston disc and piston disc to valve body seats. The valve was reassembled with the new stem disc, piston disc and actuator. On May 29, 2012 a leakage rate test was performed, and measured leakage rate still exceeded the 24 scfh acceptance limit.

Troubleshooting recommenced, including performance of a helium leak check to validate the leakage past valve 2MSS*AOV7C, adjustment of the valve actuator stroke time, and a water flush, followed by fast closure of the valve. Another leakage rate test was performed on May 30, 2012, with unsatisfactory results.

Further troubleshooting and maintenance activities are being pursued to restore the MSIV to a condition that will meet the 24 scfh leakage rate acceptance limit. Nine Mile Point Nuclear Station, LLC (NMPNS) has reviewed applicable industry operating experience and has enlisted the assistance of industry resources that specialize in valve repairs, with the intent to implement a full body repair plan with weld repairs and machining as needed. These activities will further delay startup of the plant, and there is no

assurance that a leakage rate equal to or less than 24 scfh will ultimately be attained. Thus, NMPNS proposes to modify the leakage rate acceptance limit specified in TS SR 3.6.1.3.12. As discussed in Section 3.0 of the Enclosure, increasing the allowable leakage rate through one main steam line from 24 scfh to 40 scfh is acceptable and will not adversely affect the health and safety of the public. Even though an exact cause for valve 2MSS*AOV7C exceeding the 24 scfh leakage rate limit has not been determined, the multiple leakage rate tests performed over the last several weeks have demonstrated that the measured leakage rates are consistently within the range of 27-34 scfh. It is also noted that these tests have all been performed at cold conditions. Industry operating experience indicates that testing at temperatures closer to normal operating conditions results in better leakage performance.

In accordance with TS 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," the MSIVs are required to be operable in Modes 1, 2, and 3. With one or more main steam line penetrations with an MSIV leakage rate not within limit (Condition D), the Required Action (D.1) is to isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange that has been verified to meet the applicable leakage rate of the inoperable valve, with a Completion Time of 8 hours. An additional Required Action (D.2) is to verify the affected penetration flow path is isolated once per 31 days for isolation devices located outside primary containment, and prior to entering Mode 2 or 3 from Mode 4 if primary containment was de-inerted while in Mode 4 (if not performed within the previous 92 days) for isolation devices inside primary containment. If these actions and associated completion times are not met, then the plant must be in Mode 3 within 12 hours and Mode 4 within 36 hours.

Plant startup with 2MSS*AOV7C not meeting the leakage rate SR is allowed by TS Limiting Condition for Operation (LCO) 3.0.4.a, which states that entry into a Mode or other specified condition in the Applicability shall only be made when the associated Actions to be entered permit continued operation in the Mode or other specified condition in the Applicability for an unlimited period of time. This would require that the inboard MSIV on the "C" main steam line (2MSS*AOV6C) be closed and de-activated.

With a main steam line isolated, reactor power is limited to 75 percent of rated (as described in Appendix 15D of the NMP2 Updated Safety Analysis Report (USAR). However, repair and testing of the inoperable MSIV is not possible with the plant at-power due to the industrial and radiological safety hazards created by the adjacent in-service main steam lines. Thus, in order for the plant to resume operation and achieve rated thermal power, the inoperable MSIV must be returned to operable status prior to plant startup.

Based on the above discussion, NMPNS concludes that an emergency situation exists and that the following conditions for issuance of an emergency amendment to increase the allowable leakage rate limit through one main steam line are met:

- Failure to act in a timely manner will prevent resumption of operation and increasing power output up to the plant's licensed power level. Restoration of valve 2MSS*AOV7C to operable status is necessary for the plant to resume operation and achieve rated power conditions, as discussed above. Plant startup continues to be delayed while troubleshooting, maintenance, and testing activities are being performed. These activities are consistent with industry best practices for proper valve repair; however, there is no assurance that these activities will result in reducing the leakage rate to a value equal to or less than 24 scfh.

- The proposed license amendment does not involve a significant hazards consideration, as discussed in Section 4.2 of the Enclosure.

- The application for an emergency amendment has been timely, and failure to make a timely application has not created the emergency. NMPNS has taken prompt, comprehensive actions to address the failed leakage rate tests for valve 2MSS*AOV7C in order to restore the valve to operable status, as discussed above.

- The emergency situation could not have been avoided. An as-found leakage rate test for the subject MSIV was satisfactory and there was no reason to believe that the as-left leakage rate test performed after the valve actuator replacement would not be successful. The other MSIV that had its actuator replaced during the 2012 refueling outage (2MSS*AOV7D) passed its as-left leakage rate test. The as-found leakage rate tests performed at the beginning of the 2012 refueling outage for the other 6 MSIVs were also satisfactory. Also, since 2000, there have been only two MSIV leak rate test failures, and in both cases, NMPNS was able to restore the leakage rate to within the 24 scfh limit.