Thomas A. Lynch
Plant General Manager

P.O. Box 63
Lycoming, New York 13093
315.349.5205
315.349.1321 Fax

Constellation Energy
Nine Mile Point Nuclear Station

September 18, 2009

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 – Technical Specification Sections 3.2.7.1 and 4.2.7.1

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC (NMPNS) hereby requests an amendment to the Nine Mile Point Unit 1 (NMP1) Renewed Facility Operating License DPR-63. The proposed amendment would modify 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. The proposed TS changes include the addition of applicable reactor operating conditions, addition of actions to be taken when pressure isolation valve (PIV) leakage is not within limit, relocation of the PIV leakage limit criterion from TS Table 3.2.7.1 to Specification 4.2.7.1.a, replacement of the existing PIV leakage test frequencies with a reference to the Inservice Testing Program, and deletion of TS Table 3.2.7.1, "Primary Coolant System Pressure Isolation Valves." The list of PIVs would be relocated from TS Table 3.2.7.1 to the NMP1 Updated Final Safety Analysis Report, consistent with the guidance in Generic Letter 91-08, "Removal of Component Lists from Technical Specifications."

The Enclosure provides a description and technical bases for the proposed changes, and existing TS pages marked up to show the proposed changes. NMPNS has concluded that the activities associated with the proposed amendment represent no significant hazards consideration under the standards set forth in 10 CFR 50.92. A list of regulatory commitments contained in this submittal is provided in Attachment 1 to the Enclosure.

Approval of the proposed license amendment is requested by December 4, 2009, with implementation within 30 days of receipt of the approved amendment. Approval by the requested date is desired to permit timely online maintenance of a currently degraded PIV, thereby eliminating the potential for unnecessary plant shutdown and startup transients that would otherwise be required by the current TS requirements.

A001

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 T. F. Syrell, Licensing Director, at (315) 349-5219.

Very truly yours,

Thyrel

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

I, Thomas A. Lynch, being duly sworn, state that I am the Nine Mile Point Plant General Manager, 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.

Thyrel

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 18th day of September, 2009.

WITNESS my Hand and Notarial Seal:

Tonya L Jones
Notary Public

My Commission Expires:

11/12/2010
Date

TONYA L. JONES
Notary Public in the State of New York
Oswego County Reg. No. 01JO6083354
My Commission Expires 11/12/2010

TAL/DEV

Enclosure: Evaluation of the Proposed Change

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

ENCLOSURE

EVALUATION OF THE PROPOSED CHANGE

TABLE OF CONTENTS

1.0 SUMMARY DESCRIPTION

2.0 DETAILED DESCRIPTION

- 2.1 Description of the Proposed Change
- 2.2 Background

3.0 TECHNICAL EVALUATION

4.0 REGULATORY EVALUATION

- 4.1 Applicable Regulatory Requirements/Criteria
- 4.2 Precedent
- 4.3 Significant Hazards Consideration
- 4.4 Conclusions

5.0 ENVIRONMENTAL CONSIDERATION

6.0 REFERENCES

ATTACHMENTS

1. List of Regulatory Commitments
2. Proposed Technical Specification Changes (Mark-up)
3. Changes to Technical Specification Bases

1.0 SUMMARY DESCRIPTION

This evaluation supports a request to amend Renewed Facility Operating License DPR-63 for Nine Mile Point Unit 1 (NMP1).

The proposed amendment would modify 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 (ISTS), NUREG-1433, Revision 3.1 (Reference 1). The proposed TS changes include the addition of applicable reactor operating conditions, addition of actions to be taken when pressure isolation valve (PIV) leakage is not within limit, relocation of the PIV leakage limit criterion from TS Table 3.2.7.1 to Specification 4.2.7.1.a, replacement of the existing PIV leakage test frequencies with a reference to the Inservice Testing (IST) Program, and deletion of TS Table 3.2.7.1, "Primary Coolant System Pressure Isolation Valves." The list of PIVs (but not the maximum allowable leakage values and associated notes) would be relocated from TS Table 3.2.7.1 to the NMP1 Updated Final Safety Analysis Report (UFSAR), consistent with the guidance in Generic Letter (GL) 91-08, "Removal of Component Lists from Technical Specifications" (Reference 2).

2.0 DETAILED DESCRIPTION

2.1 Description of the Proposed Change

TS Section 3.2.7.1

The proposed amendment includes the following revisions to TS Section 3.2.7.1, which are similar in concept to the Limiting Condition for Operation and Condition A for Section 3.4.5 of NUREG-1433:

- The title of the section is revised from "Primary Coolant System Pressure Isolation Valves" to "Reactor Coolant System Pressure Isolation Valve (PIV) Leakage," and the word "primary" is changed to "reactor" in both the Applicability and Objective paragraphs.

- The following two new notes are added preceding Specification 3.2.7.1.a:

  1. *Separate specification entry is allowed for each flow path.*

  2. *Enter applicable specifications for systems made inoperable by PIVs.*

- Specification 3.2.7.1.a is revised by removing the reference to TS Table 3.2.7.1 (which lists the PIVs and associated leakage limits) and by specifying that valve leakage shall be within limit during the power operating and hot shutdown reactor operating conditions.

- A new Specification 3.2.7.1.b is added to incorporate actions to be taken if one or more flow paths with leakage from one or more PIVs is not within limit. These actions and associated clarifying note are:

  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.

TS Section 4.2.7.1

The proposed amendment includes the following revisions to TS Section 4.2.7.1, which are similar in concept to Surveillance Requirement 3.4.5.1 in NUREG-1433:

- The title of the section is revised from "Primary Coolant System Pressure Isolation Valves" to "Reactor Coolant System Pressure Isolation Valve (PIV) Leakage," and the word "primary" is changed to "reactor" in both the Applicability and Objective paragraphs.

- The following new note is added preceding Specification 4.2.7.1.a:

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

- Specification 4.2.7.1.a and the associated footnote (a) are deleted and replaced with the following:

  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.

TS Table 3.2.7.1

The proposed amendment deletes TS Table 3.2.7.1 in its entirety. The list of PIVs (but not the maximum allowable leakage values and associated notes) will be relocated to the NMP1 UFSAR.

Attachment 2 provides the existing TS pages marked-up to show the proposed changes. New proposed TS Bases that reflect the proposed TS changes are provided in Attachment 3 for information only. The added TS Bases will be processed in accordance with the NMP1 TS Bases Control Program (TS 6.5.6).

2.2 Background

PIVs are those valves that isolate the boundary between the high pressure reactor coolant system (RCS) and connected low pressure piping systems. During their service lives, these valves can exhibit varying amounts of reactor coolant leakage through either normal operational wear or mechanical deterioration. The PIV leakage requirements in TS Sections 3.2.7.1 and 4.2.7.1 allow RCS high pressure operation when leakage through these valves exists in amounts that do not compromise safety.

Although the TS requirements provide a limit on allowable PIV leakage rate, the main purpose is to prevent overpressure failure of the low pressure portions of connected systems. Exceeding the leakage limit is an indication that the PIVs 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 that could degrade the ability for long-term core cooling.

Leakage rate limits for PIVs were originally implemented by the NRC in response to concerns regarding inter-system LOCAs, which was identified in the Reactor Safety Study of 1975, WASH-1400. The original NMP1 TS requirements pertaining to PIVs were issued in an NRC Order for Modification of

License dated April 20, 1981 (Reference 3). The current PIV leakage requirement of "0.5 gpm per nominal inch of valve diameter up to a maximum of 5 gpm" was subsequently incorporated by License Amendment No. 140 issued by NRC letter dated April 12, 1993 (Reference 4). Additional PIVs were added to TS Table 3.2.7.1 by License Amendment No 154 issued by NRC letter dated March 20, 1995 (Reference 5).

In May 1991, GL 91-08, "Removal of Component Lists from Technical Specifications" (Reference 2), was issued to provide guidance for removal of component lists from the TS. A license amendment to remove these component lists and relocate them to licensee-controlled documents allows licensees to revise or update the lists in the future without having to apply for another license amendment. Changes to such lists, when relocated to licensee-controlled documents, are subject to review under the provisions of 10 CFR 50.59 and quality assurance program requirements; therefore, a formal means of control over these lists still exists.

Enclosure 1 to GL 91-08 identifies the following specific issues that should be addressed by a request to remove component lists from the TS:

1. Provide an appropriate description of the scope of the components to which the TS requirements apply;

2. Incorporate into the TS any modifications or exceptions contained in notes that are eliminated by removal of the component list; and

3. Confirm that the lists of components removed from the TS have been incorporated into appropriately controlled plant procedures.

Section 3.4.5 of the ISTS, NUREG-1433, Revision 3.1 (Reference 1), describes currently accepted PIV leakage requirements. The proposed changes to NMP1 TS Sections 3.2.7.1 and 4.2.7.1 are generally consistent with NUREG-1433, except that the custom format of the NMP1 TS and the use of certain terminology (e.g., reactor operating conditions versus Modes) have been retained. Section 3.4.5 of the ISTS includes applicable operating modes, actions to be taken when PIVs are not within the leakage limit, and a reference to the IST Program for surveillance test frequency. It does not contain a table listing the PIVs.

3.0 TECHNICAL EVALUATION

The following analysis addresses each proposed TS change outlined in Section 2.1, Description of the Proposed Change.

TS Section 3.2.7.1

Section Title and Wording Change

The title of the section is revised from "Primary Coolant System Pressure Isolation Valves" to "Reactor Coolant System Pressure Isolation Valve (PIV) Leakage." This is an administrative change that more specifically reflects the purpose of the TS section and is consistent with NUREG-1433. The replacement of the word "primary" with "reactor" in the Applicability and Objective paragraphs is an editorial change for consistency with the section title change.

Addition of NOTES

Two new Notes are added preceding Specification 3.2.7.1.a to provide clarifications for the proper application of Specification 3.2.7.1. The first Note ("Separate specification entry is allowed for each flow path") clarifies that the specification can be entered separately for each flow path based on the functional independence of the flow paths. The second Note ("Enter applicable specifications for systems made inoperable by PIVs") requires entry into the specifications for systems rendered inoperable as a result of inoperable PIVs. This Note requires an evaluation of affected systems if a PIV is inoperable. The leakage may affect system operability, or isolation of a leaking flow path with an alternate valve may degrade the ability of the interconnected system to perform its safety function. As a result, the applicable specifications for the systems made inoperable by PIVs must be entered to assure appropriate remedial actions are taken, if necessary, for the affected systems. These two Notes do not alter the application of the PIV leakage requirements, but serve to enhance the understanding of the expectations for applying these requirements. The Notes are consistent with NUREG-1433 except that the wording has been modified slightly to maintain consistency with the NMP1 TS format.

Deletion of Reference to TS Table 3.2.7.1 in Specification 3.2.7.1.a

The reference to TS Table 3.2.7.1 (which lists the PIVs and associated leakage limits) is deleted from Specification 3.2.7.1.a and is replaced with a requirement that valve leakage shall be within limit during the power operating and hot shutdown reactor operating conditions. The list of PIVs (but not the maximum allowable leakage values and associated notes) will be relocated to the NMP1 UFSAR. The listing of valves that are subject to the PIV leakage specification is related to design and is not necessary for ensuring PIV leakage is maintained within limits. Therefore, the relocated list is not required to be in the TS to provide adequate protection of the public health and safety. This change is also consistent with the guidance in GL 91-08, which allows lists of components to be relocated to licensee-controlled documents (see additional discussion below regarding the deletion of TS Table 3.2.7.1).

Current Specification 3.2.7.1.a does not indicate any operating condition applicability. The addition of the power operating and hot shutdown reactor operating conditions as the applicable operating conditions is appropriate since PIV leakage potential is greatest when the RCS is pressurized. In the cold shutdown and refueling conditions, leakage limits are not provided because the lower RCS pressure results in a reduced potential for leakage and for a LOCA outside the primary containment. Accordingly, the potential for adverse consequences of PIV leakage is far lower during these operating conditions.

Addition of New Specification 3.2.7.1.b, Actions to be Taken if PIV Leakage Not Within Limit

Specification 3.2.7.1 currently requires plant shutdown if any PIV leakage exceeds the specified maximum allowable leakage. New Specification 3.2.7.1.b adds actions to be taken if one or more flow paths with leakage from one or more PIVs is not within limit, consistent with NUREG-1433. These actions will eliminate the potential to initiate an unnecessary plant shutdown when sufficient flow path isolation can be provided. The first action (b.1) requires that the high pressure portion of the affected system be isolated from the low pressure portion by use of one closed manual, deactivated automatic, or check valve within 4 hours. The second action (b.2) requires that the high pressure portion of the affected system be isolated from the low pressure portion by use of a second closed manual, deactivated automatic, or check valve within 72 hours. These action completion times provide reasonable intervals for isolating the flow path and restoring a leaking PIV to operable status. This change will not adversely impact nuclear safety because the flow path will be sufficiently isolated, the period of time without redundant isolation capability will be appropriately limited, and the probability of a second valve failing during this time period is low.

Both of the added actions are modified by the provision that each valve used to satisfy actions b.1 and b.2 must meet the same leakage requirements as the PIVs and must be in the RCS boundary or the high pressure portion of the system. This assures that the valves are qualified to perform the pressure isolation function.

TS Section 4.2.7.1

Section Title and Wording Change

The title of the section is revised from "Primary Coolant System Pressure Isolation Valves" to "Reactor Coolant System Pressure Isolation Valve (PIV) Leakage." This is an administrative change that more specifically reflects the purpose of the TS section. The replacement of the word "primary" with "reactor" in the Applicability and Objective paragraphs is an editorial change for consistency with the section title change.

Addition of NOTE

A new Note ("Not required to be performed in the hot shutdown reactor operating condition") is added preceding Specification 4.2.7.1.a. This Note, which is consistent with NUREG-1433, permits entry into the hot shutdown condition for leakage testing at high differential pressures with stable conditions that are not possible in the cold shutdown and refueling conditions.

Replace Specification 4.2.7.1.a and Associated Footnote with a Revised Surveillance Requirement

Specification 4.2.7.1.a currently requires periodic leakage testing on each PIV listed in TS Table 3.2.7.1, at the following frequencies:

- 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 is performed.

In addition, Footnote (a) to Specification 4.2.7.1.a provides an allowance to measure leakage indirectly if accomplished in accordance with approved procedures and supported by calculations showing that the method is capable of demonstrating valve compliance with the leakage criteria.

Consistent with NUREG-1433, the above testing requirements are replaced with a requirement to verify that the equivalent leakage of each PIV is ≤ 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 IST Program. The leakage acceptance criterion (≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm) was previously stated in TS Table 3.2.7.1, Footnote (a)1. The test pressure represents the RCS nominal operating pressure of 1030 psig with a tolerance of plus or minus 20 psig. Consistent with the Bases for TS Section 3.4.5 in NUREG-1433 and the American Society of Mechanical Engineers Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code), testing at a lower pressure differential than between the specified maximum RCS pressure and the normal pressure of the connected system (the maximum pressure differential) is permitted, with the observed leakage rate

adjusted to the maximum pressure differential by assuming leakage is directly proportional to the pressure differential to the one-half power. This test differential pressure adjustment, which is currently stated in TS Table 3.2.7.1, Footnote (a)3, is described in the proposed TS Bases that are included in Attachment 3 to this Enclosure.

The test frequencies currently stated in Specification 4.2.7.1.a are replaced with a reference to the IST Program. Specific test frequencies are not required to be in the TS to assure the PIVs are periodically leak tested since the IST Program, required by 10 CFR 50.55a, provides the leak test requirements for these valves. Compliance with 10 CFR 50.55a, and as a result the IST Program, is required by the NMP1 operating license, and programmatic controls for the IST Program are established in TS Section 6.5.4, "Inservice Testing Program."

The current TS requirement to leak test a PIV prior to returning the valve to service after maintenance, repair or replacement is performed is deleted. Any time the operability of a system or component has been affected by maintenance, repair or replacement of a component, post-maintenance testing is required to demonstrate operability of the system or component. After restoration of a component that caused a required surveillance requirement to be failed, Specification 4.0.1 requires the appropriate surveillances (in this case, Specification 4.2.7.1.a) to be performed to demonstrate operability of the affected component. This is further discussed in the Bases for Specification 4.0.1.

TS Table 3.2.7.1

The proposed amendment deletes TS Table 3.2.7.1 in its entirety. The list of PIVs (but not the maximum allowable leakage values and associated notes) will be relocated to the NMP1 UFSAR. As noted in Section 2.2, "Background," Enclosure 1 to GL 91-08 identifies the following specific issues that should be addressed by a request to remove component lists from the TS:

1. Provide an appropriate description of the scope of the components to which the TS requirements apply;

2. Incorporate into the TS any modifications or exceptions contained in notes that are eliminated by removal of the component list; and

3. Confirm that the lists of components removed from the TS have been incorporated into appropriately controlled plant procedures.

With regard to Item 1 above, the scope of the PIVs to which the requirements of TS Sections 3.2.7.1 and 4.2.7.1 apply was initially established in the NRC Order for Modification of License dated April 20, 1981 (Reference 3), as subsequently modified by License Amendment No. 154 (Reference 5). The list of PIVs in TS Table 3.2.7.1 will be relocated to the NMP1 UFSAR; however, the TS requirements relating to PIVs remain applicable. Therefore, deletion of TS Table 3.2.7.1 and removal of references to the table from the text to TS Section 3.2.7.1 and 4.2.7.1 does not affect the scope of components to which the TS requirements apply.

With regard to Item 2 above, there are 3 footnotes in the TS Table 3.2.7.1 list of PIVs. The first footnote ("Leakage rates shall be limited to 0.5 gpm per nominal inch of valve diameter up to a maximum of 5 gpm") is incorporated into the proposed revision to Specification 4.2.7.1.a. The second footnote ("Test differential pressure shall not be less than 150 psid") is deleted. This test requirement was included in the NRC Order for Modification of License dated April 20, 1981 that initially established the PIV testing requirements. Inclusion of this detail in the TS is not required since the IST Program, required by 10 CFR

50.55a, provides the leak test requirements for these valves. Reference to the IST Program is included in the proposed revision to Specification 4.2.7.1.a. The third footnote ("The observed leakage at the test differential pressure shall be adjusted to the functional maximum pressure differential") is also a detail that is not required to be included in the TS since the IST Program provides the leak test requirements for these valves. Consistent with NUREG-1433, this test provision is described in the proposed TS Bases that are included in Attachment 3 to this Enclosure.

With regard to Item 3 above, NMPNS will ensure that the list of PIVs is relocated to the NMP1 UFSAR upon implementation of the license amendment. Changes to the UFSAR are controlled in accordance with the provisions of 10 CFR 50.59.

Conclusions

The proposed changes to the requirements specified in TS Sections 3.2.7.1 and 4.2.7.1 for the RCS PIVs are consistent with NUREG-1433 and will continue to ensure that excessive leakage through these valves is properly identified and resolved. Testing in accordance with the IST Program will detect PIV leakage in excess of the established limits. When these limits are exceeded, required actions will initiate appropriate activities to minimize the impact of the leakage. Inclusion of these actions will eliminate the potential to initiate an unnecessary plant shutdown when sufficient flow path isolation can be provided. Relocation of the list of PIVs from the TS to a licensee-controlled document (the UFSAR) in accordance with the guidance in GL 91-08 is an administrative change that does not alter the TS requirements that are applicable to the PIVs. Thus, the proposed changes will not have an adverse impact on nuclear safety.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The RCS operational leakage limits and PIV leakage limits protect the RCS pressure boundary described in 10 CFR 50.2 and 10 CFR 50.55a(c). The current RCS operational leakage requirements specified in TS Section 3.2.5, and the current PIV leakage limits specified in TS Section 3.2.7.1, are not altered by the proposed amendment.

The proposed changes to NMP1 TS Sections 3.2.7.1 and 4.2.7.1 are generally consistent with the ISTS (NUREG-1433 - Reference 1), except that the custom format of the NMP1 TS and the use of certain terminology (e.g., reactor operating conditions versus Modes) have been retained. NUREG-1433 provides recommended contents for TS limiting conditions for operation, applicability, actions, and surveillance requirements that have been generically approved by the NRC.

GL 91-08 (Reference 2) provides guidance for the removal of component lists from the TS. The proposed amendment has addressed the guidance of GL 91-08 for the removal of the list of PIVs (TS Table 3.2.7.1) from the TS.

4.2 Precedent

The NRC has previously approved a license amendment for Limerick Generating Station for the relocation of the list of PIVs from the TS to a licensee-controlled document, in accordance with the guidance of GL 91-08 and consistent with NUREG-1433 (see Reference 6). For Limerick, the licensee-controlled document is the Technical Requirements Manual (TRM), whereas NMPNS is proposing to

relocate the list of NMP1 PIVs to the NMP1 UFSAR. For both the Limerick TRM and the NMP1 UFSAR, the applicable change control process is 10 CFR 50.59.

4.3 Significant Hazards Consideration

Nine Mile Point Nuclear Station, LLC (NMPNS) is requesting an amendment to Renewed Facility Operating License DPR-63 for Nine Mile Point Unit 1 (NMP1). The proposed amendment would modify 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 the Improved Standard Technical Specifications, NUREG-1433, Revision 3.1. The proposed TS changes include the addition of applicable reactor operating conditions, addition of actions to be taken when pressure isolation valve (PIV) leakage is not within limit, relocation of the PIV leakage limit criterion from TS Table 3.2.7.1 to Specification 4.2.7.1.a, replacement of the existing PIV leakage test frequencies with a reference to the Inservice Testing (IST) Program, and deletion of TS Table 3.2.7.1, "Primary Coolant System Pressure Isolation Valves." The list of PIVs (but not the maximum allowable leakage values and associated notes) would be relocated from TS Table 3.2.7.1 to the NMP1 Updated Final Safety Analysis Report (UFSAR), consistent with the guidance in Generic Letter (GL) 91-08, "Removal of Component Lists from Technical Specifications."

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 involves changes to the TS requirements that apply to reactor coolant system (RCS) PIVs. No physical plant changes are involved. PIVs isolate the boundary between the high pressure RCS and connected low pressure piping systems. The TS requirements are intended to detect PIV degradation that has the potential to cause a loss of coolant accident (LOCA) outside of containment due to the failure of low pressure portions of systems connected to the RCS.

   The proposed changes to the TS requirements are consistent with NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4," and will continue to ensure that excessive leakage through these valves is properly identified and resolved. Testing in accordance with the IST Program will continue to detect PIV leakage in excess of the established limits, which are not being changed. When these limits are exceeded, required actions will initiate appropriate activities to minimize the impact of the leakage. These actions will not adversely impact nuclear safety because the flow paths will be sufficiently isolated, the period of time without redundant isolation capability will be appropriately limited, and the probability of a second valve failing during this time period is low. Thus, the proposed amendment does not result in operation that would make an accident more likely to occur, and does not alter assumptions relative to mitigation of a previously evaluated accident.

   Relocation of the list of PIVs from the TS to a licensee-controlled document (the UFSAR) in accordance with the guidance in GL 91-08 is an administrative change that does not alter the TS requirements that are applicable to the PIVs.

Based on the above discussion, it is concluded that 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 proposed amendment involves changes to the TS requirements that apply to RCS PIVs. These changes to the TS requirements are consistent with NUREG-1433. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in the methods governing normal plant operation. The changes also do not alter the design function of the PIVs and do not adversely affect the ability of the PIVs to perform their design function.

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 involves changes to the TS requirements that apply to RCS PIVs. No physical plant changes are involved. PIVs isolate the boundary between the high pressure RCS and connected low pressure piping systems. The revised TS PIV requirements will continue to ensure that excessive leakage through these valves is properly identified and resolved, such that a LOCA outside of containment due to the failure of low pressure portions of systems connected to the RCS will be no more likely to occur. Thus, the proposed amendment will not result in a design basis or safety limit being exceeded or altered.

Based on the above discussion, it is concluded that 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.

4.4 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. NUREG-1433, Standard Technical Specifications, General Electric Plants, BWR/4, Revision 3.1, December 1, 2005

2. NRC Generic Letter 91-08, Removal of Component Lists from Technical Specifications, May 6, 1991

3. 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

4. Letter from D. S. Brinkman (NRC) to B. R. Sylvia (NMPC) dated April 12, 1993, Issuance of Amendment for Nine Mile Point Nuclear Station Unit No. 1 (TAC No. M79135) [Amendment No. 140]

5. Letter from G. E. Edison (NRC) to B. R. Sylvia (NMPC) dated March 20, 1995, Issuance of Amendment for Nine Mile Point Nuclear Station Unit No. 1 (TAC No. M89786) [Amendment No. 154]

6. Letter from R. V. Guzman (NRC) to C. M. Crane (Exelon Nuclear) dated February 17, 2006, Limerick Generating Station, Unit Nos. 1 and 2 – Issuance of Amendment Re: Pressure Isolation Valve Table (TAC Nos. MC9306 and MC9307) [Amendment Nos. 182 and 144]

ATTACHMENT 1

LIST OF REGULATORY COMMITMENTS

The following table identifies the regulatory commitments in this submittal. Any other statements in this submittal represent intended or planned actions. They are provided for information purposes and are not considered to be regulatory commitments.

REGULATORY COMMITMENT	DUE DATE
The list of PIVs (but not the maximum allowable leakage values and associated notes) will be relocated from TS Table 3.2.7.1 to the NMP1 UFSAR.	Upon implementation of the license amendment.

ATTACHMENT 2

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 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.

reactor

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

each

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

Insert 3

C

b. 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.

reactor

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

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.

Insert 5

[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

	System	Valve No.	Maximum[(a)] Allowable Leakage
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 $\leq$ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at a reactor coolant system pressure $\geq$ 1010 psig and $\leq$ 1050 psig, at a frequency in accordance with the Inservice Testing Program.

ATTACHMENT 3

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.

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 reseat 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).

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 Frequency required by the Inservice Testing Program is within the ASME 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.