Sam Belcher
Vice President-Nine Mile Point

P.O. Box 63
Lycoming, New York 13093
315.349.5200
315.349.1321 Fax

Constellation Energy
Nine Mile Point Nuclear Station

June 29, 2009

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

License Amendment Request Pursuant to 10 CFR 50.90: Adoption of NEI 94-01, Revision 2, and Extension of Primary Containment Integrated Leakage Rate Test Interval to Fifteen (15) Years - Technical Specification 5.5.12, 10 CFR 50 Appendix J Testing Program Plan

REFERENCE: (a) Letter from M. J. Maxin (NRC) to J. C. Butler (NEI) dated June 25, 2008, Final Safety Evaluation for Nuclear Energy Institute (NEI) Topical Report (TR) 94-01, Revision 2, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" and Electric Power Research Institute (EPRI) Report No. 1009325, Revision 2, August 2007, "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals" (TAC No. MC9663)

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC (NMPNS) hereby requests an amendment to the Nine Mile Point Unit 2 (NMP2) Renewed Facility Operating License NPF-69. The proposed change to the Technical Specifications (TS) contained herein would revise NMP2 TS 5.5.12, "10 CFR 50 Appendix J Testing Program Plan," by replacing the reference to Regulatory Guide (RG) 1.163 with a reference to Nuclear Energy Institute (NEI) topical report NEI 94-01 (NRC-approved version specified in the 10 CFR 50 Appendix J Program Plan) as the implementation document used by NMPNS to develop the NMP2 performance-based leakage testing program in accordance with Option B of 10 CFR 50, Appendix J.

Revision 2 of NEI 94-01 describes an approach for implementing the optional performance-based requirements of Option B, including provisions for extending primary containment integrated leak rate test (ILRT) intervals to 15 years, and incorporates the regulatory positions stated in RG 1.163. In the safety evaluation issued by NRC letter dated June 25, 2008 (Reference a), the NRC concluded that NEI

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94-01, Revision 2, describes an acceptable approach for implementing the optional performance-based requirements of Option B of 10 CFR 50, Appendix J, and found that NEI 94-01, Revision 2, is acceptable for referencing by licensees proposing to amend their TS in regards to containment leakage rate testing, subject to the limitations and conditions noted in Section 4.0 of the safety evaluation.

In accordance with the guidance in NEI 94-01, Revision 2, NMPNS proposes to extend the interval for the primary containment ILRT, which is required to be performed by 10 CFR 50, Appendix J, from 10 years to no longer than 15 years from the last ILRT. The proposed amendment would allow the next ILRT for NMP2 to be performed within 15 years from the last ILRT as opposed to the current 10-year interval, and would allow successive ILRTs to be performed at 15-year intervals (assuming acceptable performance history). The technical analysis for the proposed amendment is consistent with the guidance in Section 9.2.3 of NEI 94-01, Revision 2, including performance of a confirmatory plant-specific risk assessment, and addresses the limitations and conditions identified in the NRC safety evaluation (Reference a).

The Enclosure provides a description and technical bases for the proposed change, an existing TS page marked up to show the proposed change, and the NMP2 confirmatory risk assessment. 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. The enclosed submittal contains no regulatory commitments.

Approval of the proposed amendment is requested by March 1, 2010, with implementation within 30 days of receipt of the approved amendment. Approval by the requested date is needed to support planning activities for the next NMP2 refueling outage, which is currently scheduled to begin in spring 2010.

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,

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 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 Oswego, this 29 day of June, 2009.

WITNESS my Hand and Notarial Seal:

Lisa M. Clark
Notary Public

My Commission Expires:

9/12/09
Date

LISA M. CLARK
Notary Public in the State of New York
Oswego County Reg. No. 01CL6029220
My Commission Expires 9/12/09

SB/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

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ATTACHMENTS

1.0 SUMMARY DESCRIPTION

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

The proposed amendment revises NMP2 Technical Specification (TS) 5.5.12, "10 CFR 50 Appendix J Testing Program Plan," by replacing the reference to Regulatory Guide (RG) 1.163 (Reference 1) with a reference to Nuclear Energy Institute (NEI) topical report NEI 94-01 (NRC-approved version specified in the 10 CFR 50 Appendix J Program Plan) as the implementation document used by Nine Mile Point Nuclear Station, LLC (NMPNS) to develop the NMP2 performance-based leakage testing program in accordance with Option B of 10 CFR 50, Appendix J.

Revision 2 of NEI 94-01 (Reference 2) describes an approach for implementing the optional performance-based requirements of Option B, including provisions for extending primary containment integrated leak rate test (ILRT) intervals to 15 years, and incorporates the regulatory positions stated in RG 1.163. In the safety evaluation (SE) issued by NRC letter dated June 25, 2008 (Reference 3), the NRC concluded that NEI 94-01, Revision 2, describes an acceptable approach for implementing the optional performance-based requirements of Option B of 10 CFR 50, Appendix J, and found that NEI 94-01, Revision 2, is acceptable for referencing by licensees proposing to amend their TS in regards to containment leakage rate testing, subject to the limitations and conditions noted in Section 4.0 of the safety evaluation.

In accordance with the guidance in NEI 94-01, Revision 2, NMPNS proposes to extend the interval for the primary containment ILRT, which is required to be performed by 10 CFR 50, Appendix J, from 10 years to no longer than 15 years from the last ILRT. The current 10-year ILRT for NMP2 is due by April 11, 2010, which would require the test to be performed during the spring 2010 refueling outage. The proposed amendment would allow the next ILRT for NMP2 to be performed within 15 years from the last ILRT (i.e., by April 11, 2015), as opposed to the current 10-year interval, and would allow successive ILRTs to be performed at 15-year intervals (assuming acceptable performance history). The performance of fewer ILRTs will result in significant savings in radiation exposure to personnel, cost, and critical path time during future refueling outages.

The technical analysis for the proposed amendment is consistent with the guidance in Section 9.2.3 of NEI 94-01, Revision 2, including performance of a confirmatory plant-specific risk assessment, and addresses the limitations and conditions identified in the NRC safety evaluation (Reference 3).

2.0 DETAILED DESCRIPTION

2.1 Description of the Proposed Change

NMP2 TS 5.5.12, "10 CFR 50 Appendix J Testing Program Plan," Item a, currently states:

> *A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B with the exemptions stated in Section 2.D(ii) of the Operating License. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, entitled, "Performance-Based Containment Leak-Test Program," dated September 1995 with the following exceptions:*
>
> 1. *The measured leakage of main steam isolation valves (MSIVs) is excluded from the combined leakage rate of 0.6 L_a, and as-found testing is not required to be performed on the MSIVs.*

2. *Primary containment air lock door seals are tested prior to re-establishing primary containment OPERABILITY when something has been done that would bring into question the validity of the previous air lock door seal test.*

The proposed change would revise the initial paragraph of TS 5.5.12.a by replacing the reference to RG 1.163 with a reference to NEI 94-01(changes underlined), and would revise the first listed exception by deleting the portion regarding as-found testing of the MSIVs (marked with a strikethrough), as shown below:

A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B with the exemptions stated in Section 2.D(ii) of the Operating License. This program shall be in accordance with the guidelines previously reviewed and accepted by the NRC, specifically those described in NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" (NRC-accepted version specified in the 10 CFR 50 Appendix J Program Plan), with the following exceptions:

1. *The measured leakage of main steam isolation valves (MSIVs) is excluded from the combined leakage rate of 0.6 L_a~~, and as found testing is not required to be performed on the MSIVs~~.*

2. *Primary containment air lock door seals are tested prior to re-establishing primary containment OPERABILITY when something has been done that would bring into question the validity of the previous air lock door seal test.*

Attachment 2 to this Enclosure contains existing TS page 5.5-11 marked up to show the proposed changes to TS 5.5.12.a.

2.2 Background

2.2.1 Description of Primary Containment System

The primary containment is described in Updated Safety Analysis Report (USAR) Sections 3.8.1, 3.8.3, and 6.2.1. The Mark II pressure suppression containment system consists of the drywell, the pressure suppression chamber (which stores a large volume of water) and the drywell floor which separates the drywell and suppression chamber. The primary containment structure houses the reactor vessel, the reactor recirculation system, and other branch connections of the reactor coolant pressure boundary (RCPB).

The original design of the primary containment preceded the issuance of American Society of Mechanical Engineers (ASME) Section III, Division 2. As a result, the reinforced concrete primary containment was designed and constructed to the requirements of the American Concrete Institute (ACI), Building Code Requirements for Reinforced Concrete, ACI 318-71. The primary containment steel liner is designed following the requirements of ASME Section III, Division 1, and the regions around the containment penetrations are designed to meet the requirements of ASME Section III, Division 2.

The drywell is a steel-lined reinforced concrete vessel in the shape of a frustum of two cones, closed by a dome with a torispherical head. The drywell has a base diameter of approximately 91 ft and a top diameter of approximately 34 ft. The floor of the drywell serves both as a pressure barrier between the drywell and the suppression chamber and as the support structure for the reactor pedestal, downcomer vent lines, and other penetrations. The steel liner on the top surface of the drywell floor functions as a positive gas-tight membrane between the drywell and the suppression chamber to ensure that steam can enter the suppression chamber only through the downcomer vent lines or the safety/relief valve (SRV) discharge lines. This liner is anchored and seal-welded to the reactor pedestal wall, the primary containment liner knuckle, and the drywell floor penetrations and embedments. The drywell floor slopes away from the containment wall liner and towards the drywell floor drain system.

The drywell houses the reactor vessel and associated equipment. The primary function of the drywell is to contain the radioactivity and withstand pressures and temperatures resulting from a breach of the RCPB, up to and including an instantaneous circumferential break of a single reactor recirculation pump suction pipe, and to provide a holdup time for decay of any radioactive material released. The drywell is designed to resist the forces of an internal design pressure of 45 psig in combination with thermal, seismic, and other loads as outlined in USAR Chapter 3.

The pressure suppression chamber is a cylindrical, stainless steel clad, steel-lined, reinforced concrete vessel located below the drywell, having an inside diameter of approximately 91 feet. The foundation mat, to which the vessel is anchored, is lined with steel plates within the inside diameter of the cylinder. The steel plates are welded to each other and to steel embedments to maintain the primary containment function of a gas-tight enclosure.

The pressure suppression pool, which is contained within the pressure suppression chamber, stores sufficient water to condense the steam released from blowdown of the reactor coolant system after a loss of coolant accident (LOCA) or from SRV discharge during accident or normal operational transients. Steam is transferred to the pressure suppression pool by the downcomer vent lines and the discharge piping of the SRVs. In addition to serving as a heat sink for transients and accidents, the pressure suppression pool also provides a reservoir of water for the core standby cooling systems. The downcomer vent lines are open to the drywell and submerged below the low water level of the suppression pool, providing a path for uncondensed steam to enter the pool. The downcomers project 3 to 6 inches above the sloped drywell floor so that small quantities of water leakage flow past the downcomers and are collected in the drywell floor drain system.

Vacuum breakers provide a return flow path from the suppression chamber gas space to the drywell. The vacuum breakers are designed to limit the negative differential pressure between the drywell and the suppression chamber to less than the design value of 10 psid. The vacuum breaker valves are mounted in piping that connects the drywell and suppression chamber. Each of the four vacuum breaker flow paths has two relief valves in series to ensure a leak-tight boundary under positive drywell-to-suppression chamber differential pressure conditions. Since the vacuum breakers are located inside the drywell, they do not form an extension of the primary containment boundary.

2.2.2 Testing Requirements of 10 CFR 50, Appendix J

The testing requirements of 10 CFR 50, Appendix J, provide assurance that leakage from the containment, including systems and components that penetrate the containment, does not exceed the allowable leakage values specified in the TS, and that periodic surveillance of reactor containment penetrations and isolation valves is performed so that proper maintenance and repairs are made during the service life of the containment and the systems and components penetrating primary containment. The limitation on containment leakage provides assurance that the containment would perform its design function following an accident up to and including the plant design basis accident. Appendix J identifies three types of required tests: (1) Type A tests, intended to measure the primary containment overall integrated leakage rate; (2) Type B tests, intended to detect local leaks and to measure leakage across pressure-containing or leakage limiting boundaries (other than valves) for primary containment penetrations; and (3) Type C tests, intended to measure containment isolation valve leakage rates. Type B and C tests identify the vast majority of potential containment leakage paths. Type A tests identify the overall (integrated) containment leakage rate and serve to ensure continued leakage integrity of the containment structure by evaluating those structural parts of the containment not covered by Type B and C testing.

In 1995, 10 CFR 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," was amended to provide a performance-based Option B for the containment leakage testing requirements. Option B requires that test intervals for Type A, Type B, and Type C testing be determined by using a performance-based approach. Performance-based test intervals are based on consideration of the operating history of the component and resulting risk from its failure. The use of the term "performance-based" in 10 CFR 50 Appendix J refers to both the performance history necessary to extend test intervals as well as to the criteria necessary to meet the requirements of Option B.

Also in 1995, RG 1.163 (Reference 1) was issued. The RG endorsed NEI 94-01, Revision 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" (Reference 5), with certain modifications and additions. Option B, in concert with RG 1.163 and NEI 94-01, Revision 0, allows licensees with a satisfactory ILRT performance history (i.e., two consecutive, successful Type A tests) to reduce the test frequency for the containment Type A (ILRT) test from three tests in 10 years to one test in 10 years. This relaxation was based on an NRC risk assessment contained in NUREG-1493, "Performance-Based Containment Leak-Test Program" (Reference 6), and EPRI TR-104285, "Risk Impact Assessment of Revised Containment Leak Rate Testing Intervals" (Reference 7), both of which showed that the risk increase associated with extending the ILRT surveillance interval was very small.

By letter dated August 31, 2007, the NEI submitted Revision 2 of NEI 94-01 and EPRI TR-1009325, Revision 2, "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals," to the NRC staff for review.

NEI 94-01, Revision 2 (Reference 2), describes an approach for implementing the optional performance-based requirements of Option B described in 10 CFR Part 50, Appendix J, which includes provisions for extending Type A (ILRT) intervals to up to 15 years and incorporates the regulatory positions stated in RG 1.163. It delineates a performance-based approach for determining Type A, Type B, and Type C containment leakage rate surveillance testing frequencies. This method uses industry performance data, plant-specific performance data, and risk insights in determining the appropriate testing frequency. NEI 94-01, Revision 2, also discusses the performance factors that licensees must consider in determining test intervals. However, it does not address how to perform the tests because these details can be found in existing documents (e.g., ANSI/ANS-56.8-2002). The NRC final SE issued by letter dated June 25, 2008 (Reference 3), documents the NRC's evaluation and acceptance of NEI 94-01, Revision 2, subject to the specific limitations and conditions listed in Section 4.1 of the SE. The accepted version of NEI 94-01 has subsequently been issued as Revision 2-A dated October 2008 (Reference 4).

EPRI TR-1009325, Revision 2 (Reference 8), provides a risk impact assessment for optimized ILRT intervals of up to 15 years, utilizing current industry performance data and risk-informed guidance, primarily Revision 1 of RG 1.174, "An Approach for using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (Reference 9). The NRC final SE issued by letter dated June 25, 2008, documents the NRC's evaluation and acceptance of EPRI TR-1009325, Revision 2, subject to the specific limitations and conditions listed in Section 4.2 of the SE. An accepted version of EPRI TR-1009325 has subsequently been issued as Revision 2-A (also identified as TR-1018243) dated October 2008 (Reference 10).

2.2.3 Current NMP2 TS Requirements

On August 13, 1996, the NRC approved License Amendment No. 74 for NMP2 (Reference 11), authorizing implementation of the containment leak rate testing requirements of 10 CFR 50, Appendix J, Option B, with exemptions stated in Section 2.D(ii) of the NMP2 Operating License. The amendment added TS 6.8.4.f, "10 CFR 50 Appendix J Testing Program Plan," to require Type A, B and C testing in accordance with RG 1.163, with the following two identified exceptions:

1. The measured leakage of main steam isolation valves (MSIVs) is excluded from the combined leakage rate of 0.6 L_a, and as-found testing is not required to be performed on the MSIVs.

2. Primary containment air lock door seals are tested prior to re-establishing primary containment OPERABILITY when something has been done that would bring into question the validity of the previous air lock door seal test.

The NRC approved these exceptions to RG 1.163 in the safety evaluation that accompanied issuance of License Amendment No. 74 (Reference 11).

TS 6.8.4.f was subsequently re-numbered as TS 5.5.12 in License Amendment No. 91 (conversion to improved TS), issued by NRC letter dated February 15, 2000 (Reference 12). As described in TS 5.5.12, the maximum allowable primary containment leakage rate (L_a) is 1.1% of primary containment air weight per day at the peak calculated design basis LOCA containment internal pressure (P_a) of 39.75 psig.

3.0 TECHNICAL EVALUATION

3.1 Adoption of NEI 94-01, Revision 2

As required by 10 CFR 50.54(o), the NMP2 primary reactor containment shall be subject to the requirements set forth in 10 CFR 50, Appendix J. Option B of Appendix J requires that test intervals for Type A, Type B, and Type C testing be determined by using a performance-based approach. Currently, the NMP2 10 CFR 50 Appendix J Testing Program Plan is based on RG 1.163, which endorses NEI 94-01, Revision 0, with certain modifications and additions. This license amendment request proposes to revise the NMP2 10 CFR 50 Appendix J Testing Program Plan by implementing the guidance in NEI 94-01, Revision 2. Revision 2 of NEI 94-01 describes an approach for implementing the optional performance-based requirements of Option B, including provisions for extending Type A (ILRT) intervals to 15 years, and incorporates the regulatory positions stated in RG 1.163.

In the safety evaluation issued by NRC letter dated June 25, 2008 (Reference 3), the NRC concluded that NEI 94-01, Revision 2, describes an acceptable approach for implementing the optional performance-based requirements of Option B of 10 CFR 50, Appendix J, and found that NEI 94-01, Revision 2, is acceptable for referencing by licensees proposing to amend their TS in regards to containment leakage rate testing, subject to the limitations and conditions noted in Section 4.0 of the safety evaluation. The following table addresses each of the six (6) limitations and conditions for NEI 94-01, Revision 2, listed in Section 4.1 of the NRC safety evaluation.

Limitation/Condition (from Section 4.1 of NRC safety evaluation)	NMP2 Response
1. For calculating the Type A leakage rate, the licensee should use the definition in the NEI TR 94-01, Revision 2, in lieu of that in ANSI/ANS-56.8-2002. (Refer to SE Section 3.1.1.1).	Following NRC approval of this license amendment request, NMPNS will use the definition in Section 5.0 of NEI 94-01, Revision 2, for calculating the Type A leakage rate when future NMP2 Type A tests are performed.
2. The licensee submits a schedule of containment inspections to be performed prior to and between Type A tests. (Refer to SE Section 3.1.1.3).	A schedule of containment inspections is provided in Section 3.2.2 of this Enclosure. Drywell interior coating inspections (Section 3.2.5.2 of this Enclosure) provide an additional opportunity to identify containment system structural problems.
3. The licensee addresses the areas of the containment structure potentially subjected to degradation. (Refer to SE Section 3.1.3).	General visual examination of accessible interior and exterior surfaces of the containment system for structural problems is typically conducted in accordance with the NMP2 Containment Inservice Inspection (ISI) Plan and Schedule (Section 3.2.2 of this Enclosure), which implements the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, Subsections IWE and IWL, as required by 10 CFR 50.55a(g). The NMP2 containment system does not employ any moisture barriers and is not equipped with a sand cushion. There are no primary containment surface areas that require augmented examination in accordance with ASME Section XI, IWE-1240.
4. The licensee addresses any tests and inspections performed following major modifications to the containment structure, as applicable. (Refer to SE Section 3.1.4).	There are no currently planned or anticipated major modifications to the NMP2 containment structure. The station design change process would address testing requirements for any future containment structure modifications.
5. The normal Type A test interval should be less than 15 years. If a licensee has to utilize the provision of Section 9.1 of NEI TR 94-01, Revision 2, related to extending the ILRT interval beyond 15 years, the licensee must demonstrate to the NRC staff that it is an unforeseen emergent condition. (Refer to SE Section 3.1.1.2).	NMPNS acknowledges and accepts this NRC staff position, as communicated to the nuclear industry in Regulatory Issue Summary (RIS) 2008-27 dated December 8, 2008.

Limitation/Condition (from Section 4.1 of NRC safety evaluation)	NMP2 Response
6. For plants licensed under 10 CFR Part 52, applications requesting a permanent extension of the ILRT surveillance interval to 15 years should be deferred until after the construction and testing of containments for that design have been completed and applicants have confirmed the applicability of NEI TR 94-01, revision 2, and EPRI Report No. 1009325, Revision 2, including the use of past containment ILRT data.	Not applicable. NMP2 is not licensed under 10 CFR Part 52.

3.1.1 Evaluation of Technical Specification Changes

10 CFR 50, Appendix J, Option B, Section V.B, "Implementation," states:

> "The regulatory guide or other implementation document used by a licensee or applicant for an operating license under this part or a combined license under part 52 of this chapter to develop a performance-based leakage-testing program must be included, by general reference, in the plant technical specifications. The submittal for technical specification revisions must contain justification, including supporting analyses, if the licensee chooses to deviate from methods approved by the Commission and endorsed in a regulatory guide."

To comply with this requirement, TS 5.5.12.a currently references RG 1.163, which was issued in September 1995. RG 1.163 states that NEI 94-01, Revision 0, provides methods acceptable to the NRC for complying with Option B of 10 CFR 50, Appendix J, with four exceptions described therein.

The proposed change replaces the reference to RG 1.163 with a reference to NEI 94-01; however, rather than specify a specific revision of NEI 94-01, the proposed TS change is worded to indicate that the Appendix J Testing Program must be in accordance with NRC-reviewed and accepted guidelines (i.e., NEI 94-01), with the specific version of those guidelines specified in the Appendix J Testing Program Plan. These proposed TS changes are consistent with the regulatory requirement to include the implementation document used to develop the performance-based leakage testing program, by general reference, in the plant TS, and assures that only NRC-reviewed and accepted guidance is used to develop the program. In addition, these changes will allow the use of later NRC-accepted versions of NEI 94-01 without the unnecessary burden (on both NMPNS and the NRC) of processing a license amendment.

NMP2 TS 5.5.12.a currently lists two exceptions to the guidelines contained RG 1.163 (which references NEI 94-01, Revision 0). These exceptions were approved by the NRC in the safety evaluation that accompanied issuance of License Amendment No. 74 (Reference 11). The following discussion addresses these two exceptions.

<u>First Exception</u>

The first exception consists of two parts:

a. "The measured leakage of main steam isolation valves (MSIVs) is excluded from the combined leakage rate of 0.6 L_a."

This represented an exception to NEI 94-01, Revision 0, Section 10.2, because treatment of MSIV leakage apart from L_a differed from the guidance in NEI 94-01, Revision 0, in that the combined leakage for Type B and C tests must meet the acceptance criterion of 0.6 L_a. The NRC accepted this exception on the basis that it was consistent with an existing exemption from the requirements of Appendix J authorized by NMP2 Operating License paragraph 2.D(ii)(b). The exemption was granted because MSIV leakage was treated separately from L_a in the radiological consequence analyses for the design basis LOCA.

The proposed change to TS 5.5.12.a retains this exception. NEI 94-01, Revision 2, Section 10.2, still indicates that the combined leakage for Type B and C tests must meet the acceptance criterion of 0.6 L_a (by reference to Section 6.4.4 of ANSI/ANS-56.8-2002 (Reference 21)), and the current radiological consequence analyses for the design basis LOCA that are based on the alternative source term (Reference 13) continue to treat MSIV leakage separately from L_a. The associated exemption from the requirements of Appendix J is included in NMP2 Renewed Facility Operating License paragraph 2.D(ii)(b). Thus, the basis for the previous NRC acceptance of this exception remains unchanged.

b. "As-found testing is not required to be performed on the MSIVs."

This also represented an exception to NEI 94-01, Revision 0, Section 10.2. The NRC accepted this exception on the basis that the MSIV test interval was not performance-based and the MSIV leakage was not included in L_a.

The proposed change to TS 5.5.12.a deletes this exception. Consistent with NEI 94-01, Revision 2, Section 10.2, the MSIV Type C test interval is non-performance based and is limited to 30 months. NMPNS intends to follow the guidance in Section 3.3.4 of ANSI/ANS-56.8-2002, which is referenced by NEI 94-01, Revision 2. This guidance indicates that an as-found test is required before work is done that can affect the leak rate of a component whose leakage integrity is suspect (i.e., has demonstrated poor reliability in maintaining an acceptably low leakage rate).

<u>Second Exception</u>

This exception states:

> "Primary containment air lock door seals are tested prior to re-establishing primary containment OPERABILITY when something has been done that would bring into question the validity of the previous air lock door seal test."

This represented an exception to NEI 94-01, Revision 0, Section 10.2.2.1, which states only that air lock door seals must be tested prior to re-establishing containment integrity. This exception allows not testing the air lock door seals prior to re-establishing containment integrity when the reactor has been in a condition where containment integrity is not required but the air lock was not opened during the plant shutdown. The basis for this exception was that the air lock door seals will continue to perform their safety function if nothing has been done to invalidate the previous air lock door seal test.

The proposed change to TS 5.5.12.a retains this exception, since NEI 94-01, Revision 2, Section 10.2.2.1, still states only that air lock door seals must be tested prior to re-establishing containment integrity. The basis for the previous NRC acceptance of this exception remains unchanged.

3.1.2 Evaluation of Existing Exemptions from 10 CFR 50, Appendix J Requirements

10 CFR 50, Appendix J, Option B, Section V.B, "Implementation," states:

> "Specific exemptions to Option A of this appendix that have been formally approved by the AEC or NRC, according to 10 CFR 50.12, are still applicable to Option B of this appendix, if necessary, unless specifically revoked by the NRC."

NMP2 implemented Option B of 10 CFR 50, Appendix J, via License Amendment No. 74 that was issued by NRC letter dated August 13, 1996 (Reference 11). At that time, evaluation of the need/basis for the exemptions listed in paragraph 2.D(ii) of the NMP2 Operating License was performed. The evaluation concluded that three of the four existing exemptions authorized by paragraph 2.D(ii) at that time continued to be necessary to support implementation of Option B. These were items (b) regarding MSIV leakage; (c) regarding the hydraulic control system for the reactor recirculation flow control valves; and (d) regarding the traversing incore probe system shear valves. The NRC safety evaluation that accompanied issuance of License Amendment No. 74 concluded that retaining these three prior exemptions was appropriate and consistent with the provisions of Option B of 10 CFR 50, Appendix J.

Paragraph 2.D(ii) of the NMP2 Renewed Facility Operating License, issued on October 31, 2006, continues to authorize the same three prior exemptions noted above. The proposed change to TS 5.5.12.a replaces the reference to RG 1.163 with a reference to NEI 94-01 (NRC-approved version specified in the 10 CFR 50 Appendix J Program Plan) as the implementation document used by NMPNS to develop the NMP2 performance-based leakage testing program in accordance with Option B of 10 CFR 50, Appendix J. This change does not alter the need or basis for the three exemptions currently authorized by paragraph 2.D(ii) of the NMP2 Renewed Facility Operating License.

3.2 Extension of ILRT Interval to 15 Years

NEI 94-01, Revision 2, allows extensions of ILRT intervals based upon two consecutive, periodic successful Type A tests and the requirements stated in Section 9.2.3 of NEI 94-01. To support the proposed change to extend the ILRT interval to 15 years, the following evaluation presents NMP2 ILRT performance history, addresses each of the subsections in Section 9.2.3 of NEI 94-01, Revision 2, and discusses other considerations relating to maintaining containment integrity.

3.2.1 Type A Test Performance History

Acceptable performance history is defined as successful completion of two consecutive periodic Type A tests where the calculated performance leakage rate was less than 1.0 L_a. A preoperational Type A test may be used as one of the two Type A tests that must be successfully completed to extend the test interval, provided that an engineering analysis is performed to document why a preoperational Type A test can be treated as a periodic test. Elapsed time between the first and last tests in a series of consecutive satisfactory tests used to determine performance shall be at least 24 months.

As defined in NEI 94-01, Revision 2, the performance leakage rate is calculated as the sum of the Type A upper confidence limit (UCL) and as-left minimum pathway leakage rate (MNPLR) for all Type B and Type C pathways that were in service, isolated, or not lined up in their test position (i.e., drained and vented to containment atmosphere) prior to performing the Type A test. In addition, leakage pathways that were isolated during performance of the test because of excessive leakage must be factored into the performance determination. The performance criterion for Type A tests is a performance leak rate of less than 1.0 L_a.

For the 1986 preoperational Type A test, the total time UCL leakage rate was 0.2815 wt% / day, excluding the minimum pathway leakage for isolated pathways. The minimum pathway leakage rate for Type B and C pathways not in service was 0.0087 wt% / day. There were no leakage pathways isolated during the performance of the test. Therefore, the performance leakage rate was 0.2815 + 0.0087 = 0.2902 wt% / day. The test was performed at peak accident pressure, P_a (39.75 psig).

For the 1991 periodic Type A test, the total time UCL leakage rate was 0.2880 wt% / day, excluding the minimum pathway leakage for isolated pathways. The minimum pathway leakage rate for Type B and C pathways not in service was 0.017 wt% / day. During the test, a leakage pathway through a containment pressure transmitter was isolated. Although no local leakage rate for this pathway was available, a maximum leakage through this pathway of 0.312 wt% / day was calculated. Therefore, the performance leakage rate was 0.2880 + 0.017 + 0.312 = 0.617 wt% / day. The test was performed at peak accident pressure, P_a (39.75 psig).

For the 2000 periodic Type A test, the total time UCL leakage rate was 0.2131 wt% / day, excluding the minimum pathway leakage for isolated pathways. The minimum pathway leakage rate for Type B and C pathways not in service was 0.0686 wt% / day. There were no leakage pathways isolated during the performance of the test. Therefore, the performance leakage rate was 0.2131 + 0.0686 = 0.2817 wt% / day. The test was performed at peak accident pressure, P_a (39.75 psig).

The above-described Type A test results were all less than the maximum allowable containment leakage rate (L_a at P_a) of 1.1% containment air weight per day at a pressure of 39.75 psig. This performance history supports extending the ILRT interval to 15 years.

3.2.2 Supplemental Inspection Requirements (NEI 94-01, Revision 2, Section 9.2.3.2)

Prior to initiating a Type A test, a general visual examination of accessible interior and exterior surfaces of the containment system for structural problems that may affect either the containment structure leakage integrity or the performance of the Type A test is performed. This inspection is typically conducted in accordance with the NMP2 Containment ISI Plan and Schedule (hereafter referred to as the IWE/IWL ISI program), which implements the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, Subsections IWE and IWL, as required by 10 CFR 50.55a(g). The applicable code edition and addenda for the second ten-year interval IWE/IWL ISI program is the 2001 Edition through 2003 Addenda of ASME Section XI. There are currently no relief requests associated with the second ten-year interval IWE/IWL ISI program. In the event that either a Subsection IWE or IWL examination is not scheduled to be performed during the same outage as the Type A test, a separate general visual inspection is required to be performed.

The examinations performed in accordance with the IWE/IWL ISI program satisfy the general visual examinations requirements specified in 10 CFR 50, Appendix J, Option B. Identification and evaluation of inaccessible areas are addressed in accordance with the requirements of 10 CFR 50.55a(b)(2)(ix)(A) and 10 CFR 50.55a(b)(2)(viii)(E). Examination of pressure-retaining bolted connections and evaluation of containment bolting flaws or degradation are performed in accordance with the requirements of 10 CFR 50.55a(b)(ix)(G) and 10 CFR 50.55a(b)(ix)(H). Each ten-year ISI interval is divided into three approximately equal-duration inspection periods. A minimum of one inspection during each inspection period of the ISI interval is required by the IWE/IWL ISI program. Since a 15-year ILRT interval spans at least four ISI inspection periods, the frequency of the examinations performed in accordance with the IWE/IWL ISI program satisfies the requirement of NEI 94-01, Revision 2, Section 9.2.3.2, to perform the general visual examinations during at least three other outages before the next Type A test if the Type A test interval is to be extended to 15 years. This is illustrated by the following table showing the inspection periods for the NMP2 first and second ten-year IWE/IWL ISI intervals.

NMP2 Containment Inservice Inspection Periods (IWE/IWL)

Inspection Interval	Inspection Period	Period Start Date	Period End Date	Refuel Outage	Refuel Outage Year
1	1	April 5, 1998	April 4, 2001	RFO-07	2000
1	2	April 5, 2001	April 5, 2005	RFO-08 RFO-09	2002 2004
1	3	April 5, 2005	April 4, 2008	RFO-10 RFO-11	2006 2008
2	1	April 5, 2008	April 4, 2011	RFO-12	2010
2	2	April 5, 2011	April 4, 2015	RFO-13 RFO-14	2012 2014
2	3	April 5, 2015	April 4, 2018	RFO-15 RFO-16	2016 2018

The last Type A test was completed in April 2000 during refueling outage 07 (RFO-07). Based on a 15-year Type A test interval, the next Type A test would be scheduled for RFO-14 in 2014 (during Inspection Interval 2, Period 2). Thus, three containment system general visual examinations performed in accordance with the IWE/IWL ISI program take place prior to the 2014 Type A test (i.e., during Inspection Interval 1, Periods 2 and 3, and during Inspection Interval 2, Period 1).

There are no primary containment surface areas that require augmented examination in accordance with ASME Section XI, IWE-1240.

3.2.3 Deficiencies Identified During Supplemental Inspections (NEI 94-01, Revision 2, Section 9.2.3.3)

Consistent with the guidance provided in NEI 94-01, Revision 2, Section 9.2.3.3, abnormal degradation of the primary containment structure identified during the conduct of IWE/IWL ISI program examinations or at other times is entered into the corrective action program for evaluation to determine the cause of the degradation and to initiate appropriate corrective actions.

3.2.4 Plant-Specific Confirmatory Analyses (NEI 94-01, Revision 2, Section 9.2.3.4)

3.2.4.1 Methodology

An evaluation has been performed to assess the risk impact of extending the NMP2 containment ILRT interval from 10 years to 15 years. This plant-specific risk assessment followed the guidance in NEI 94-01, Revision 2-A (Reference 4), the methodology described in Electric Power Research Institute (EPRI) TR-1009325, Revision 2-A (Reference 10), and the NRC regulatory guidance outlined in RG 1.174 (Reference 9) on the use of Probabilistic Risk Assessment (PRA) findings and risk insights in support of a request to change the licensing basis of the plant. In addition, the methodology used for Calvert Cliffs Nuclear Power Plant (Reference 14) to estimate the likelihood and risk implications of corrosion-induced leakage of steel containment liners going undetected during the extended ILRT interval was also used.

The current NMP2 Level 1 and Level 2 internal events PRA model was used to perform the plant-specific risk assessment. This PRA model has been updated to meet Capability Category II of ASME PRA Standard RA-Sb-2005 (Reference 15) and Regulatory Guide 1.200, Revision 1 (Reference 16). The model includes analyses for the dominant external events (seismic and fire), taken from the NMP2 Individual Plant Examination of External Events (IPEEE). Though the IPEEE seismic and fire event models have not been updated since the original IPEEE, they have been used to estimate the effect on total LERF of including these external events in the ILRT interval extension risk assessment.

In the safety evaluation issued by NRC letter dated June 25, 2008 (Reference 3), the NRC concluded that the methodology in EPRI TR-1009325, Revision 2, is acceptable for referencing by licensees proposing to amend their TS to extend the ILRT surveillance interval to 15 years, subject to the limitations and conditions noted in Section 4.0 of the safety evaluation. The following table addresses each of the four (4) limitations and conditions for the use of EPRI TR-1009325, Revision 2, listed in Section 4.2 of the NRC safety evaluation.

Limitation/Condition (from Section 4.2 of NRC safety evaluation)	NMP2 Response
1. The licensee submits documentation indicating that the technical adequacy of their PRA is consistent with the requirements of RG 1.200 relevant to the ILRT extension.	NMP2 PRA quality is addressed in Section 3.2.4.2 of this Enclosure.
2. The licensee submits documentation indicating that the estimated risk increase associated with permanently extending the ILRT surveillance interval to 15 years is small, and consistent with the clarification provided in Section 3.2.4.5 of this SE. Specifically, a small increase in population dose should be defined as an increase in population dose of less than or equal to either 1.0 person-rem per year or 1 percent of the total population dose, whichever is less restrictive. In addition, a small increase in CCFP should be defined as a value marginally greater than that accepted in previous one-time ILRT extension requests. This would require that the increase in CCFP be less than or equal to 1.5 percentage point.	EPRI Report No. 1009325, Revision 2-A, incorporates these population dose and Conditional Containment Failure Probability (CCFP) acceptance guidelines, and these guidelines have been used for the NMP2 plant-specific risk assessment.
3. The methodology in EPRI Report No. 1009325, Revision 2, is acceptable except for the calculation of the increase in expected population dose (per year of reactor operation). In order to make the methodology acceptable, the average leak rate for the pre-existing containment large leak rate accident case (accident case 3b) used by the licensees shall be 100 La instead of 35 La.	EPRI Report No. 1009325, Revision 2-A, incorporates the use of 100 L_a as the average leak rate for the pre-existing containment large leak rate accident case (accident case 3b), and this value has been used in the NMP2 plant-specific risk assessment.
4. A license amendment request (LAR) is required in instances where containment over-pressure is relied upon for emergency core cooling system (ECCS) performance.	NMP2 does not rely on containment overpressure to assure adequate net positive suction head for ECCS pumps following design basis accidents (see USAR Section 6.3.2.2).

3.2.4.2 PRA Quality

The NMP2 PRA is a Level 2 PRA that includes both internal and external events. Severe accident sequences have been developed from internally and externally initiated events, including internal floods, internal fires, and seismic events. The sequences have been developed to the radiological release end state; i.e., source term release to environment.

The NMP2 PRA is based on a detailed model of the plant developed from the Individual Plant Examination (IPE) and IPEEE projects, which underwent NRC review and the BWROG Certification Process. NRC reviews of the IPE and IPEEE are documented in the NRC staff evaluations dated August 18, 1994 for the IPE (Reference 17) and dated August 12, 1998 for the IPEEE (Reference 18). Review comments, current plant design, current procedures, plant operating data, current industry PRA techniques, and general improvements identified by the NRC have been incorporated into the current PRA model. The model is maintained in accordance with Constellation PRA procedures.

The NMP2 PRA internal events model has recently been updated to meet ASME PRA Standard RA-Sb-2005 (Reference 15) and RG 1.200, Revision 1 (Reference 16). The updated PRA model meets ASME Capability Category II requirements. The industry peer review of the updated PRA model has not yet been performed; however, a preliminary self-assessment of the model performed prior to the recent update identified gaps relative to RG 1.200 that were similar to those identified in the detailed self-assessment that was performed for the Nine Mile Point Unit 1 (NMP1) PRA model prior to its RG 1.200 update. The gaps identified for the NMP1 PRA were used to plan the NMP2 PRA model update. In addition, the NMP2 PRA update has been prepared by the same team of individuals that completed the recent NMP1 PRA update, which also meets ASME Capability Category II requirements. The NMP1 PRA update had few industry peer review team findings, and the peer review team commended NMPNS on the overall PRA model, supporting analyses, and documentation quality. A summary of the NMP1 PRA update peer review findings was submitted to the NRC by NMPNS letter dated December 4, 2008 (Reference 19). The findings were related primarily to specific documentation details and had an insignificant impact on the PRA results. These findings and other peer review suggestions have been considered in the NMP2 PRA update. As such, the updated NMP2 PRA model is considered acceptable for use in assessing the risk impact of extending the NMP2 containment ILRT interval from 10 years to 15 years.

3.2.4.3 Summary of Plant-Specific Risk Assessment Results

The findings of the NMP2 risk assessment confirm the general findings of previous studies (References 6 and 8) that the risk impact associated with extending the ILRT interval from 3 in 10 years to one in 15 years is small. The NMP2 plant-specific results are summarized below.

1. Core Damage Frequency (CDF) is not significantly impacted by the proposed change. NMP2 does not rely on containment overpressure to assure adequate net positive suction head for ECCS pumps following design basis accidents; thus, the CDF change is negligible and the relevant acceptance criterion is Large Early Release Frequency (LERF).

2. The increase in LERF based on consideration of internal events only is conservatively estimated as 7.3E-08/yr. The guidance in RG 1.174 defines very small changes in LERF as those that are less than 1E-07/yr. Therefore, the estimated change in LERF is determined to be very small using the guidelines of RG 1.174.

RG 1.174 also states that when the calculated increase in LERF is in the range of 1.0E-06 to 1.0E-07 per reactor year, applications will be considered only if it can be reasonably shown that the total LERF is less than 1.0E-05 per reactor year. An assessment of the impact from external events (seismic and fire) was also performed. In this case, the total increase in LERF for combined internal and external events was conservatively estimated as 1.01E-07, and the combined total LERF is well below the RG 1.174 acceptance criteria for total LERF of 1.0E-05.

3. The calculated increase in the 50-mile population dose is 3.7E-02 person-rem per year. EPRI TR-1009325, Revision 2-A, states that a small increase in population dose is defined as an increase of less than or equal to either 1.0 person-rem per year or 1 percent of the total population dose (0.014 person-rem per year), whichever is less restrictive. Thus, the calculated 50-mile population dose increase is small using the guidelines of EPRI TR-1009325, Revision 2-A. Moreover, the risk impact when compared to other severe accident risks is negligible.

4. The calculated increase in the Conditional Containment Failure Probability (CCFP) is 0.87%. EPRI TR-1009325, Revision 2-A, states that increases in CCFP of less than or equal to 1.5 percentage points is very small. Therefore, the calculated CCFP increase is judged to be very small.

Details of the NMP2 risk assessment are contained in Attachment 3 to this Enclosure.

3.2.5 Additional Considerations

3.2.5.1 Type B and Type C Testing Program

The NMP2 Appendix J, Type B and Type C testing program requires testing of electrical penetrations, airlocks, hatches, flanges, and valves within the scope of the program as required by 10 CFR 50, Appendix J, Option B, and TS 5.5.12. The Type B and Type C testing program consists of local leak rate testing of penetrations with a resilient seal, expansion bellows, double-gasketed manways, hatches and flanges, drywell airlocks, and containment isolation valves that serve as a barrier to the release of the post-accident primary containment atmosphere. These components are tested with air or nitrogen at a pressure greater than or equal to 39.75 psig (P_a).

A review of the most recent Type B and Type C test results and their comparison with the allowable leakage rate specified in TS 5.5.12.d.1 was performed. The combined Type B and Type C leakage acceptance criterion (0.6 L_a) is 494.6 scfh. The maximum and minimum pathway leak rate summary totals for the last two refueling outages are shown below.

Refueling Outage	Maximum Pathway		Minimum Pathway	
	Leakage (scfh)	**% of 0.6 L_a (494.6 scfh)**	**Leakage (scfh)**	**% of 0.6 L_a (494.6 scfh)**
RFO11 - 2008	132.47	26.8%	82.3	16.6%
RFO10 - 2006	102.97	20.8%	85.9	17.4%

As discussed in NUREG-1493 (Reference 6), Type B and Type C tests can identify the vast majority (greater than 95%) of all potential primary containment leakage paths. This amendment request adopts the guidance in NEI 94-01, Revision 2 in place of NEI 94-01, Revision 0, but otherwise does not affect the scope, performance, or scheduling of Type B or Type C tests. Type B and Type C testing will continue to provide a high degree of assurance that primary containment integrity is maintained.

Frequently disassembled Type B penetrations (those with seals and gaskets, and bolted connections) are typically tested on a 30-month interval, whereas the test interval for infrequently disassembled Type B penetrations is typically 120 months (performance-based). Type C test intervals are performance-based (except for those valves on a fixed interval; e.g., MSIVs and feedwater isolation valves). Type C penetrations have had generally good performance and are typically tested on a 60-month interval. The Type B and Type C tests are scheduled such that approximately equal numbers of components are tested during each refueling outage, to levelize resource requirements.

3.2.5.2 Monitoring of Drywell Interior Coating

In addition to the inspections performed in accordance with the IWE/IWL ISI program, visual inspections of accessible interior surfaces of the drywell are performed each refueling outage to identify evidence of loose, flaking, or degraded painted surfaces. The suppression chamber is not included because it is primarily stainless steel and does not have Service Level 1 coatings. When degraded coatings are identified, evaluations are performed to determine any necessary actions (e.g., repair, removal, or replacement). These inspections provide another opportunity to identify containment system structural problems.

3.2.5.3 NRC Information Notice 92-20, Inadequate Local Leak Rate Testing

NRC Information Notice 92-20 was issued to alert licensees to problems with local leak rate testing of two-ply stainless steel bellows used on piping penetrations at some plants. Specifically, local leak rate testing could not be relied upon to accurately measure the leakage rate that would occur under accident conditions since, during testing, the two plies in the bellows were in contact with each other, restricting the flow of the test medium to the crack locations. Any two-ply bellows of similar construction may be susceptible to this problem.

The utilization of bellows as containment pressure retaining boundaries is limited to the following penetrations:

- 2NMT*Z31A, B, C, D and E: Traversing Incore Probe (TIP) drive guide tubes to reactor vessel.

Type B tests are applicable to these penetration bellows. A makeup pressure test is utilized to determine primary containment penetration leak rates. In this test, the TIP tubing is disconnected and, using a test fixture, penetrations 2NMT*Z31A, B, C, D and E are tested together with their associated TIP solenoid-operated ball valve at a test interval of 24 months (based on inservice testing program requirements).

The NMP2 plant-specific risk assessment provided as Attachment 3 to this Enclosure takes into consideration the potential failure of containment bellows assemblies.

3.2.5.4 Aging Management Examination of Containment Penetration Bellows

An augmented VT-1 visual examination of the containment penetration bellows will be performed using enhanced techniques qualified for detecting stress corrosion cracking, per NUREG-1611. This is an addition to the IWE/IWL ISI program and has been reviewed and accepted by the NRC as part of the License Renewal application review (Reference 20). These inspections are beyond the scope of examinations required by ASME Section XI, Table IWE-2500-1, and are not considered augmented examinations as defined in ASME Section XI, IWE-1240.

3.2.5.5 Plant Operational Performance

During power operation, the NMP2 primary containment is inerted with nitrogen to maintain oxygen concentration within TS 3.6.3.2 limits. As a result, the primary containment is maintained at a slightly positive pressure. Drywell pressure is continuously recorded and is verified to be within limits by TS Surveillance Requirement 3.6.1.4.1 every 12 hours. Maintaining the containment pressurized at power and frequently monitoring drywell pressure assures that gross containment leakage that may develop during power operation will be detected.

3.3 Conclusions

NEI 94-01, Revision 2, describes an NRC-accepted approach for implementing the performance-based requirements of 10 CFR 50, Appendix J, Option B. It incorporates the regulatory positions stated in RG 1.163, and includes provisions for extending Type A (ILRT) intervals to 15 years. NEI 94-01, Revision 2, delineates a performance-based approach for determining Type A, Type B, and Type C containment leakage rate surveillance test frequencies. NMPNS is adopting the guidance of NEI 94-01, Revision 2, for the NMP2 10 CFR 50 Appendix J Testing Program Plan described in TS 5.5.12, with two exceptions that were previously reviewed and accepted by the NRC in License Amendment No. 74. Existing exemptions from the requirements of Appendix J authorized by paragraph 2.D(ii) of the NMP2 Renewed Facility Operating License continue to be necessary to support implementation of Option B of Appendix J.

Based on the previous ILRT tests conducted at NMP2, which confirm that the primary containment structure exhibits extremely low leakage, NMPNS concludes that extension of the containment ILRT interval from 10 to 15 years represents minimal risk to increased leakage. The risk is minimized by continued Type B and Type C testing performed in accordance with Option B of 10 CFR 50 Appendix J, inspection activities performed as part of the plant IWE/IWL ISI program, inspections of drywell interior coatings, and by operating experience with a containment that normally operates at a positive pressure (i.e., the pressure from containment inerting). In the aggregate, these provide continuing confidence in containment integrity.

This experience is supplemented by risk analysis studies, including the NMP2 risk analysis provided in Attachment 3 to this Enclosure. The findings of the NMP2 risk assessment confirm the general findings of previous studies, on a plant-specific basis, that extending the ILRT interval from 10 to 15 years results in a very small change to the NMP2 risk profile.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 50.54(o) states that primary reactor containments for water cooled power reactors shall be subject to the requirements set forth in Appendix J of 10 CFR 50.

10 CFR Part 50, Appendix J, Option B, requires that licensees' primary reactor containments meet the leakage rate requirements as delineated by Appendix J. This requirement is met by performance of Type A, B, and C leakage rate testing on the primary containment and its associated components (e.g., valves, penetrations). The leakage rate test results are compared to allowable leakage rate acceptance criteria set forth in Appendix J.

NEI 94-01, Revision 2, describes an approach for implementing the performance-based requirements of 10 CFR 50, Appendix J, Option B. It incorporates the regulatory positions stated in RG 1.163, and includes provisions for extending Type A (ILRT) intervals to 15 years. NEI 94-01, Revision 2, delineates a performance-based approach for determining Type A, Type B, and Type C containment leakage rate surveillance test frequencies. In the safety evaluation issued by NRC letter dated June 25, 2008 (Reference 3), the NRC concluded that NEI 94-01, Revision 2, describes an acceptable approach for implementing the optional performance-based requirements of Option B of 10 CFR 50, Appendix J, and is acceptable for referencing by licensees proposing to amend their TS in regards to containment leakage rate testing, subject to the limitations and conditions noted in Section 4.0 of the safety evaluation.

EPRI TR-1009325, Revision 2, provides a risk impact assessment for optimized ILRT intervals up to 15 years, utilizing current industry performance data and risk-informed guidance. NEI 94-01, Revision 2, states that a plant-specific risk impact assessment should be performed using the approach and methodology described in TR-1009325, Revision 2, for a proposed extension of the ILRT interval to 15 years. In the safety evaluation issued by NRC letter dated June 25, 2008, the NRC concluded that the methodology in EPRI TR-1009325, Revision 2, is acceptable for referencing by licensees proposing to amend their TS to extend the ILRT surveillance interval to 15 years, subject to the limitations and conditions noted in Section 4.0 of the safety evaluation.

The NMP2 10 CFR 50 Appendix J Program Plan will continue to comply with the requirements of 10 CFR 50, Appendix J. The proposed amendment is consistent with the NRC-accepted guidance in NEI 94-01, Revision 2, and ERPI TR-1009325, Revision 2.

4.2 Significant Hazards Consideration

Nine Mile Point Nuclear Station, LLC (NMPNS) is requesting revisions to Nine Mile Point Unit 2 (NMP2) Technical Specification (TS) 5.5.12, "10 CFR 50 Appendix J Testing Program Plan." The proposed amendment would replace the reference to Regulatory Guide (RG) 1.163 with a reference to Nuclear Energy Institute (NEI) topical report NEI 94-01 (NRC-approved version specified in the 10 CFR 50 Appendix J Program Plan) as the implementation document used by NMPNS to develop the NMP2 performance-based leakage testing program in accordance with Option B of 10 CFR 50, Appendix J. The proposed amendment would also extend the interval for the primary containment integrated leak rate test (ILRT), which is required to be performed by 10 CFR 50, Appendix J, from 10 years to no longer than 15 years from the last ILRT.

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 NMP2 10 CFR 50 Appendix J Testing Program Plan. The proposed amendment does not involve a physical change to the plant or a change in the manner in which the plant is operated or controlled. The primary containment function is to provide an essentially leak tight barrier against the uncontrolled release of radioactivity to the environment for postulated accidents. As such, the containment itself and the testing requirements to periodically demonstrate the integrity of the containment exist to ensure the plant's ability to mitigate the consequences of an accident, and do not involve any accident precursors or initiators. Therefore, the probability of occurrence of an accident previously evaluated is not significantly increased by the proposed amendment.

The proposed amendment adopts the NRC-accepted guidelines of NEI 94-01, Revision 2, for development of the NMP2 performance-based leakage testing program. Implementation of these guidelines continues to provide adequate assurance that during design basis accidents, the primary containment and its components will limit leakage rates to less the values assumed in the plant safety analyses. The potential consequences of extending the ILRT interval from 10 years to 15 years have been evaluated by analyzing the resulting changes in risk. The increase in risk in terms of person-rem per year within 50 miles resulting from design basis accidents was estimated to be acceptably small, and the increase in the large early release frequency resulting from the proposed change was determined to be within the guidelines published in NRC RG 1.174. Additionally, the proposed change maintains defense-in-depth by preserving a reasonable balance among prevention of core damage, prevention of containment failure, and consequence mitigation. NMPNS has determined that the increase in conditional containment failure probability due to the proposed change would be very small. Therefore, it is concluded that the proposed amendment does not significantly increase the consequences of an accident previously evaluated.

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 adopts the NRC-accepted guidelines of NEI 94-01, Revision 2, for development of the NMP2 performance-based leakage testing program, and establishes a 15 year interval for the performance of the primary containment ILRT. The containment and the testing requirements to periodically demonstrate the integrity of the containment exist to ensure the plant's ability to mitigate the consequences of an accident, and do not involve any accident precursors or initiators. The proposed change does not involve a physical change to the plant (i.e., no new or different type of equipment will be installed) or a change to the manner in which the plant is operated or controlled.

   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 adopts the NRC-accepted guidelines of NEI 94-01, Revision 2, for development of the NMP2 performance-based leakage testing program, and establishes a 15 year interval for the performance of the primary containment ILRT. This amendment does not alter the manner in which safety limits, limiting safety system setpoints, or limiting conditions for operation are determined. The specific requirements and conditions of the 10 CFR 50 Appendix J Testing Program Plan, as defined in the TS, ensure that the degree of primary containment structural integrity and leak-tightness that is considered in the plant safety analyses is maintained. The overall containment leakage rate limit specified by the TS is maintained, and the Type A, B, and C containment leakage tests will continue to be performed at the frequencies established in accordance with the NRC-accepted guidelines of NEI 94-01, Revision 2.

Containment inspections performed in accordance with other plant programs serve to provide a high degree of assurance that the containment will not degrade in a manner that is detectable only by an ILRT. In addition, the on-line containment monitoring capability that is inherent to inerted boiling water reactor containments allows for the detection of gross containment leakage that may develop during power operation. This combination of factors ensures that evidence of containment structural degradation is identified in a timely manner. Furthermore, a risk assessment using the current NMP2 Probabilistic Risk Assessment model concluded that extending the ILRT test interval from 10 years to 15 years results in a very small change to the NMP2 risk profile.

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

Based on the above, NMPNS concludes that the proposed change presents no significant hazards considerations 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 surveillance requirements regarding leak rate testing of the primary containment. 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. Regulatory Guide 1.163, "Performance Based Containment Leak-Test Program," September 1995

2. NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," Revision 2, August 2007

3. Letter from M. J. Maxin (NRC) to J. C. Butler (NEI) dated June 25, 2008, Final Safety Evaluation for Nuclear Energy Institute (NEI) Topical Report (TR) 94-01, Revision 2, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" and Electric Power Research Institute (EPRI) Report No. 1009325, Revision 2, August 2007, "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals" (TAC No. MC9663)

4. NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," Revision 2-A, October 2008

5. NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," Revision 0, July 26, 1995

6. NUREG-1493, "Performance-Based Containment Leak-Test Program," September 1995

7. EPRI TR-104285, "Risk Impact Assessment of Revised Containment Leak Rate Testing Intervals," August 1994

8. EPRI TR-1009325, "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals," Revision 2, 2007

9. Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 1, November 2002

10. EPRI TR-1009325, "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals," Revision 2-A, October 2008

11. Letter from D. S. Hood (NRC) to B. R. Sylvia (NMPC) dated August 13, 1996, "Issuance of Amendment for Nine Mile Point Nuclear Station, Unit 2 (TAC No. M94641)"

12. Letter from G. S. Vissing (NRC) to J. H. Mueller (NMPC) dated February 15, 2000, "Conversion to Improved Technical Specifications for Nine Mile Point Nuclear Station Unit No. 2 – Amendment No. 91 to Facility Operating License No. NPF-69 (TAC No. MA3822)"

13. 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)"

14. Letter from C. H. Cruse (Calvert Cliffs Nuclear Power Plant) to Document Control Desk (NRC) dated March 27, 2002, "Response to Request for Additional Information Concerning the License Amendment Request for a One-Time Integrated Leakage Rate Test Extension"

15. ASME RA-Sb-2005, "Addenda to ASME RA-S-2002, Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications," December 30, 2005

16. Regulatory Guide 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Assessment Results for Risk-Informed Activities," Revision 1, January 2007

17. Letter from P. T. Kuo (NRC) to B. R. Sylvia (NMPC) dated August 18, 1994, "Individual Plant Examination for Nine Mile Point Nuclear Station, Unit 2 (TAC No. M74437)"

18. Letter from D. S. Hood (NRC) to J. H. Mueller (NMPC) dated August 12, 1998, "Review of Individual Plant Examination of External Events, Nine Mile Point Nuclear Station, Unit No. 2 (TAC No. M83646)"

19. Letter from K. J. Polson (NMPNS) to Document Control Desk (NRC) dated December 4, 2008, "License Amendment Request Pursuant to 10 CFR 50.90: One-Time Extension of the Primary Containment Integrated Leakage Rate Test Interval – Response to NRC Request for Additional Information (TAC No. MD9453)"

20. NUREG-1900, "Safety Evaluation Report Related to the License Renewal of Nine Mile Point Nuclear Station, Units 1 and 2," September 2006

21. ANSI/ANS-56.8-2002, "Containment System Leakage Testing Requirements," November 27, 2002

ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGE (MARK-UP)

The current version of Technical Specification Page 5.5-11 has been marked-up by hand to reflect the proposed change.

5.5 Programs and Manuals

5.5.12 10 CFR 50 Appendix J Testing Program Plan (continued)

Insert A

Section 2.D(ii) of the Operating License. ~~This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, entitled, "Performance-Based Containment Leak Test Program," dated September 1995 with the following exceptions:~~

1. The measured leakage of main steam isolation valves (MSIVs) is excluded from the combined leakage rate of 0.6 L_a~~, and as-found testing is not required to be performed on the MSIVs~~.

2. Primary containment air lock door seals are tested prior to re-establishing primary containment OPERABILITY when something has been done that would bring into question the validity of the previous air lock door seal test.

b. The peak calculated containment internal pressure (P_a) for the design basis loss of coolant accident is 39.75 psig.

c. The maximum allowable primary containment leakage rate (L_a) at P_a shall be 1.1% of primary containment air weight per day.

d. Leakage Rate acceptance criteria are:

1. Primary Containment leakage rate acceptance criterion is < 1.0 L_a. The combined leakage rate for Type B and C tests on a minimum pathway basis, except for main steam line isolation valves and Primary Containment isolation valves which are hydrostatically tested, is < 0.6 L_a.

   During the first unit startup following testing in accordance with this program, the as-left combined leakage rate acceptance criteria are < 0.6 L_a for the Type B and C tests on a maximum pathway basis, except for main steam line isolation valves and Primary Containment isolation valves which are hydrostatically tested, and ≤ 0.75 L_a for Type A tests.

2. Air lock testing acceptance criteria are:

   (a) Overall air lock leakage rate is ≤ 0.05 L_a when tested at greater than or equal to P_a; and

(continued)

INSERT A (for TS Page 5.5-11)

This program shall be in accordance with the guidelines previously reviewed and accepted by the NRC, specifically those described in NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" (NRC-accepted version specified in the 10 CFR 50 Appendix J Program Plan), with the following exceptions: