Exelon Generation

200 Exelon Way
Kennett Square, PA 19348

www.exeloncorp.com

10 CFR 50.90

NMP2L2616

March 21, 2016

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NPF-69
NRC Docket No. 50-410

Subject: Supplemental Response to Request for Additional Information by the Office of Nuclear Reactor Regulation to Support Review of Nine Mile Point Nuclear Station, Unit 2, Relocation of Secondary Containment Bypass Leakage Paths Table from Technical Specifications to the Technical Requirements Manual

References:

1. Letter from J. Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "License Amendment Request - Relocation of Secondary Containment Bypass Leakage Paths Table from Technical Specifications to the Technical Requirements Manual," dated March 23, 2015

2. Letter from B. Mozafari (Senior Project Manager, U.S. Nuclear Regulatory Commission) to Mr. Bryan Hanson (Exelon Generation Company, LLC), "Nine Mile Point Nuclear Station, Unit 2-Request for Additional Information Regarding (CAC MF 5900)," dated December 17, 2015

3. Letter from D. Gudger (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information by the Office of Nuclear Reactor Regulation to Support Review of Nine Mile Point Nuclear Station, Unit 2, Relocation of Secondary Containment Bypass Leakage Paths Table from Technical Specifications to the Technical Requirements Manual," dated January 8, 2016

By letter dated March 23, 2015 (Reference 1), Exelon Generation Company, LLC (Exelon) requested to change the Nine Mile Point Nuclear Station, Unit 2 (NMP2) Technical Specifications (TS). The proposed amendment request would modify NMP2 TS by relocating the secondary containment bypass leakage paths table from the TS to the Technical Requirements Manual.

On December 8, 2015, the U.S. Nuclear Regulatory Commission (NRC) emailed a draft Request for Additional Information (RAI). On December 11, 2015, a clarification teleconference was held between NRC and Exelon personnel. The formal RAI (Reference 2) was provided on December 17, 2015.

On January 8, 2016, Exelon submitted to the NRC the RAI response (Reference 3). Subsequent to this submittal, a second clarification teleconference was performed between the NRC and Exelon on March 1, 2016.

Attachment 1 to this letter contains the NRC's RAI immediately followed by Exelon's supplemental RAI response. This supplement replaces the RAI response provided on January 8, 2016 (Reference 3), and clarifies the original submittal (Reference 1) as requested during the clarification call on March 1, 2016.

Exelon has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration provided to the NRC in Reference 1. The additional information provided in this response does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Furthermore, the additional information provided in this response does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

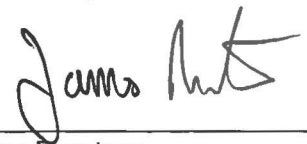
With the supplemental information provided in the attached response, Exelon requests approval of the proposed amendment by April 19, 2016. The requested approval date supports the implementation of the hardened containment vent modifications at NMP2 to comply with the schedule required by NRC Order EA-13-109, Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions, dated June 6, 2013. Once approved, the amendment shall be implemented prior to restart from NMP2 2016 refueling outage.

There are no commitments contained in this response.

If you should have any questions regarding this submittal, please contact Ron Reynolds at 610-765-5247.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 21st day of March 2016.

Respectfully,



James Barstow
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachment 1: Supplemental Response to Request for Additional Information
Attachment 2: Revised Technical Specification Pages and Bases Marked-Up Pages

cc:	USNRC Region I Regional Administrator	w/attachments
	USNRC Senior Resident Inspector – NMP	"
	USNRC Project Manager, NRR – NMP	"
	A. L. Peterson, NYSERDA	"

ATTACHMENT 1

Nine Mile Point Nuclear Station, Unit 2
Relocation of Secondary Containment Bypass Leakage Paths
Docket No. 50-410

Supplemental Response to Request for Additional Information

RAI STSB-1:

In the existing NMP2 TS, Table 3.6.1.3-1 specifies a numerical value for allowable leakage for each leakage path in standard cubic feet per hour. Surveillance Requirement (SR) 3.6.1.3.11 states:

> Verify the leakage rate for the secondary containment bypass leakage paths is within the limits of Table 3.6.1.3-1 when pressurized to ≥ 40 psig.

The proposed change is deletion of Table 3.6.1.3-1 and revision of SR 3.6.1.3.11 to state:

> Verify the leakage rate for the secondary containment bypass leakage paths is within the limits when pressurized to ≥ 40 psig.

The staff requests additional information to explain why a numerical value limit on the secondary containment bypass leakage is not retained within the proposed SR 3.6.1.3.11 itself. Typically, the safety analysis for a facility assumes a specific amount of bypass leakage when calculating dose consequences. This leakage limit is reflected in the TS to ensure operation within the bounds of the safety analysis.

The regulation at 10 CFR 50.36(c)(3) requires TSs to include items in the category of surveillance requirements, which are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the Limiting Conditions for Operations will be met. The leakage limit for the pathways to be considered operable must be specified in the TS.

The staff compared the proposed revision of SR 3.6.1.3.11 with the guidance provided in Generic Letter 91-08. The Generic Letter recommended that the limitation on containment leakage rate be revised to state:

> A combined leakage rate of less than or equal to [0.10 La] for all penetrations that are secondary containment bypass leakage paths when pressurized to Pa.

This requirement has also been retained in the Standard TS.

Provide a technical justification for not retaining a numerical limit on allowable leakage on the secondary containment bypass pathways or propose a change to SR 3.6.1.3.11 to reflect the appropriate limit. If it is proposed to specify the leakage limit in terms of a combined leakage rate, please review LCO 3.6.1.3 Condition D and its associated Required Actions to ensure consistency with the proposed change to SR 3.6.1.3.11.

Exelon Supplemental Response to RAI STSB-1:

Based on a clarification call between the U.S. Nuclear Regulatory Commission (NRC) and Exelon conducted on March 1, 2016, the following supplemental information is provided to the license amendment request submitted on March 23, 2015 (Reference 1), and the above Request for Additional Information.

In summary, the following changes are requested. Technical Specification (TS) Table 3.6.1.3-1 will be relocated from the TS to the Technical Requirements Manual (TRM) which is a licensee controlled document. Surveillance Requirement (SR) 3.6.1.3.11 will be revised to include three numerical values for the limiting secondary containment leakage rates based on the previously NRC approved Alternative Source Term (AST) licensing basis for Nine Mile Point Unit 2 (NMP2) (References 2 and 3). Finally, as a result of a plant modification to address the hardened vent as specified in NRC Order EA-13-109 (Reference 4), a secondary containment bypass leakage path is eliminated from the current TS Table 3.6.1.3-1.

The hardened vent modification includes the replacement of Primary Containment Isolation Valve (PCIV) 2CPS*AOV109 and the relocation of this valve from inside primary containment to outside primary containment. Valves 2CPS*SOV133 and 2CPS*V51 provide motive air to the 2CPS*AOV109 air actuator. Therefore, since 2CPS*AOV109 will no longer be located inside primary containment, the motive air lines and valves inside containment will be removed in their entirety and the lines will be cut and isolated by a welded cap on both the inside and outside of primary containment penetration Z92.

Valves 2CPS*SOV133 and 2CPS*V51 are currently listed in TS Table 3.6.1.3-1. The TS Table specifies an allowable leakage value applicable to each valve in Standard Cubic Feet per Hour (SCFH). Removal of valves 2CPS*SOV133 and 2CPS*V51 from primary containment eliminates the secondary containment bypass leakage path such that the two valves can be deleted from TS Table 3.6.1.3-1. Removal of this secondary containment bypass leakage path is conservative with respect to dose consequences following a LOCA. Therefore, the LOCA dose consequence analysis was not modified as a result of this change.

The secondary containment bypass leakage paths and limits specified in the current TS Table 3.6.1.3-1 are direct inputs to the approved AST licensing basis for NMP2 for the Loss of Coolant Accident (LOCA) evaluation as submitted in License Amendment Request dated May 31, 2007 (Reference 2), and approved by Amendment 125 (Reference 3). As detailed in Exelon Design Analysis H21C-106 (Reference 5), these pathways release activity across four different release points; each release point having unique atmospheric dispersion coefficients. Additionally, each pathway has unique flow and fission product removal characteristics. As a result of these varying release pathway characteristics, the current approved LOCA AST licensing basis is not configured to transform the multiple leakage limits into a single numerical value. Based on the AST analysis methodology, the secondary containment bypass leakage pathways are divided into the following (4) groups: Main Steam Isolation Valves (open/closed), Bypass (Drywell), Bypass (Suppression Chamber), and Bypass (Delayed from Drywell). SR 3.6.1.3.12 requires verification of the leakage rate through each main steam isolation valve; therefore, the remaining three groups are identified as the secondary containment bypass leakage associated with SR 3.6.1.3.11.

The current approved AST LOCA analysis documents the procedure used to convert volumetric flow rate under test conditions to volumetric flow rate under accident conditions (page C3 of Reference 5). This procedure is employed to establish volumetric flow rates under test conditions for the three groups of secondary bypass leakage for the proposed TS SR 3.6.1.3.11 as detailed below.

A brief description of the three groups is as follows:

a Bypass (Drywell): Includes all bypass pathways with no delays considered originating in the drywell except those listed below in the third group. This leakage group will

have a combined effective leakage rate less than or equal to 8.74 SCFH. This value is calculated by dividing the combined actual flowrate of 3.394 CFH by 0.388.

b Bypass (Suppression Chamber): Includes all bypass pathways with no delays considered originating in the suppression chamber. This leakage group will have a combined effective leakage rate less than or equal to 1.67 SCFH. This value is calculated by dividing combined actual flowrate of 0.6483 CFH by 0.388.

c Bypass (Delayed from Drywell): Includes feedwater, 14" containment purge, and reactor water cleanup, delays are considered and conservatively combined. This leakage group will have a combined effective leakage rate less than or equal to 28.17 SCFH. This value is calculated by dividing combined actual flowrate of 10.93 CFH by 0.388.

It is noted that in the above description the combined effective leakage rate corresponds to the combined leakage rate weighted by the X/Q normalization factor as outlined in the AST analysis (page C6 of Reference 5). In addition, the AST analysis uses the term "Wetwell" which is synonymous with Suppression Chamber.

The proposed revision to SR 3.6.1.3.11 as shown in Attachment 2 reflects the limits of the three groups described above. The TS Table 3.6.1.3-1 will be relocated to the TRM as shown in Attachment 2. The elimination of valves 2CPS*SOV133 and 2CPS*V51 as a result of the hardened vent modification will be reflected in the new TRM table. Changes to the TRM are licensee controlled and subject to the provisions of 10 CFR 50.59.

TS Limiting Condition for Operation 3.6.1.3, Condition D, and its associated Required Actions, were reviewed and no changes are necessary as a result of this proposed change. However, changes to the applicable TS Bases section is provided in Attachment 2.

The marked up TS pages and marked up TS Bases pages provided with this supplemental response supersedes the previously submitted marked up pages provided in the license amendment request dated March 23, 2015, and the RAI response submittal dated January 8, 2016, in their entirety.

References:

1. Letter from J. Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "License Amendment Request - Relocation of Secondary Containment Bypass Leakage Paths Table from Technical Specifications to the Technical Requirements Manual," dated March 23, 2015

2. Letter from K. Nietmann (Nine Mile Point Nuclear Station) to Document Control Desk (U.S. NRC), "License Amendment Request Pursuant to 10 CFR 50.90: Application of Alternate Source Term," dated May 31, 2007 (ML071580314)

3. Letter from R. Guzman (Senior Project Manager, U.S. Nuclear Regulatory Commission) to K. Polson (Nine Mile Point Nuclear Station), "Nine Mile Point Nuclear Station, Unit 2- Issuance of Amendment RE: Implementation of Alternative Radiological Source Term (TAC NO. MD5758)," dated May 29, 2008 (ML081230439)

4. NRC Order EA-13-109, "Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 6, 2013

5. H21C-106, "Unit 2 LOCA w/LOOP AST Methodology," dated May 31, 2007 [Attachment 7 to Reference 2, ML071580354]

ATTACHMENT 2

Nine Mile Point Nuclear Station, Unit 2
Relocation of Secondary Containment Bypass Leakage Paths
Docket No. 50-410

PROPOSED TECHNICAL SPECIFICATION and BASES MARKED-UP PAGES

TS Pages 3.6.1.3-1, -12, -14 and -15

Bases Pages B3.6.1.3-1 through -3, -8, -18 and -19

TRM Pages 3.6-23a and -23b

Secondary Containment Bypass Leakage Valve

DELETE

3.6 CONTAINMENT SYSTEMS

3.6.1.3 Primary Containment Isolation Valves (PCIVs)

LCO 3.6.1.3 Each PCIV and each ~~non-PCIV listed in Table 3.6.1.3-1~~ shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
When associated instrumentation is required to be OPERABLE per LCO 3.3.6.1, "Primary Containment Isolation Instrumentation."

ACTIONS

---------- NOTES ----------

1. Penetration flow paths may be unisolated intermittently under administrative controls.

2. Separate Condition entry is allowed for each penetration flow path.

3. Enter applicable Conditions and Required Actions for systems made inoperable by PCIVs.

4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Only applicable to penetration flow paths with two or more PCIVs. ---------- One or more penetration flow paths with one PCIV inoperable except due to leakage not within limit.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND	4 hours except for main steam line AND 8 hours for main steam line (continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.1.3.6	Perform leakage rate testing for each primary containment purge valve with resilient seals.	184 days AND Once within 92 days after opening the valve
SR 3.6.1.3.7	Verify the isolation time of each MSIV is ≥ 3 seconds and ≤ 5 seconds.	In accordance with the Inservice Testing Program
SR 3.6.1.3.8	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	24 months
SR 3.6.1.3.9	Verify a representative sample of reactor instrumentation line EFCVs actuates to the isolation position on an actual or simulated instrument line break signal.	24 months
SR 3.6.1.3.10	Remove and test the explosive squib from each shear isolation valve of the TIP System.	24 months on a STAGGERED TEST BASIS
SR 3.6.1.3.11	~~Verify the leakage rate for the secondary containment bypass leakage paths is within the limits of Table 3.6.1.3-1 when pressurized to ≥ 40 psig.~~	In accordance with 10 CFR 50 Appendix J Testing Program Plan

DELETE

Verify the leakage rate for the secondary containment bypass leakage when pressurized to ≥40 psig is:
a. Bypass (Drywell): ≤ 8.74 SCFH; and
b. Bypass (Suppression Chamber): ≤ 1.67 SCFH; and
c. Bypass (Drywell with delays): ≤ 28.17 SCFH

(continued)

DELETE

Table 3.6.1.3-1 (page 1 of 2)
Secondary Containment Bypass Leakage Paths Leakage Rate Limits

VALVE NUMBER	PER VALVE LEAK RATE (SCFH)
2MSS*MOV111 2MSS*MOV112	1.875
2MSS*MOV208	0.625
2CMS*SOV74A, B (d) 2CMS*SOV75A, B (d) 2CMS*SOV76A, B (d) 2CMS*SOV77A, B (d)	0.2344
2DER*MOV119 2DER*RV344	(a)
2DER*MOV120	1.25
2DER*MOV130 2DER*MOV131	0.625
2DFR*MOV120	1.875
2DFR*MOV121 2DFR*RV228	(b)
2DFR*MOV139 2DFR*MOV140	0.9375
2WCS*MOV102 2WCS*MOV112	2.5
2FWS*V23A, B 2FWS*V12A, B	12.0
2CPS*AOV104 2CPS*AOV106	4.38
2CPS*AOV105 2CPS*AOV107	3.75

(continued)

(a) The combined leakage rate for these two valves shall be ≤ 1.25 SCFH.

(b) The combined leakage rate for these two valves shall be ≤ 1.875 SCFH.

The information from this Technical Specification section has been relocated to the TRM and maintained in accordance with the 10 CFR 50 Appendix J Testing Program Plan.

DELETE

Table 3.6.1.3-1 (page 2 of 2)
Secondary Containment Bypass Leakage Paths Leakage Rate Limits

VALVE NUMBER	PER VALVE LEAK RATE (SCFH)
2CPS*SOV119 2CPS*SOV120 2CPS*SOV121 2CPS*SOV122	0.625
2IAS*SOV164 2IAS*V448	0.9375
2IAS*SOV165 2IAS*V449	0.9375
2GSN*SOV166 2GSN*V170	(c)
2IAS*SOV166 2IAS*SOV184	(c)
2IAS*SOV167 2IAS*SOV185	(c)
2IAS*SOV168 2IAS*SOV180	(c)
2CPS*SOV132 2CPS*V50	(c)
2CPS*SOV133 2CPS*V51	(c)

(c) The combined leak rate for these penetrations shall be ≤ 3.6 SCFH. The assigned leakage rate through a penetration shall be that of the valve with the highest leakage rate in that penetration. However, if a penetration is isolated by one closed and de-activated automatic valve, closed manual valve, or blind flange, the leakage through the penetration shall be the actual pathway leakage.

(d) The LCO requirements and leakage rate limit shall apply until such time as a modification eliminates the potential secondary containment bypass leakage path.

The information from this Technical Specification section has been relocated to the TRM and maintained in accordance with the 10 CFR 50 Appendix J Testing Program Plan.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1.3 Primary Containment Isolation Valves (PCIVs)

BASES

secondary containment bypass leakage valves

DELETE

DELETE

BACKGROUND

The function of the PCIVs and the ~~non-PCIVs listed in Table 3.6.1.3-1 (2CMS*SOV74A, 74B, 75A, 75B, 76A, 76B, 77A, and 77B)~~, in combination with other accident mitigation systems, is to limit fission product release during and following postulated Design Basis Accidents (DBAs) to within limits. Primary containment isolation within the time limits specified for those PCIVs designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a DBA.

The OPERABILITY requirements for PCIVs help ensure that an adequate primary containment boundary is maintained during and after an accident by minimizing potential paths to the environment. Therefore, the OPERABILITY requirements provide assurance that the primary containment function assumed in the safety analysis will be maintained. These isolation devices consist of either passive devices or active (automatic) devices. Manual valves, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges (which include plugs and caps as listed in Reference 1), and closed systems are considered passive devices. Check valves, or other automatic valves designed to close without operator action following an accident, are considered active devices. Two barriers in series are provided for each penetration, except for penetrations isolated by excess flow check valves, so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analysis. One of these barriers may be a closed system.

The 12 and 14 inch primary containment purge valves are PCIVs that are qualified for use during all operational conditions. The 12 and 14 inch primary containment purge valves are normally maintained closed in MODES 1, 2, and 3 to ensure the primary containment boundary is maintained. However, the purge valves may be open when being used for pressure control, inerting, de-inerting, ALARA, or air quality considerations since they are fully qualified.

(continued)

BASES

BACKGROUND (continued)

A two inch bypass line is provided when the primary containment full flow line to the Standby Gas Treatment (SGT) System is isolated.

APPLICABLE SAFETY ANALYSES

The PCIVs LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory, and establishing the primary containment boundary during major accidents. As part of the primary containment boundary, PCIV ~~(and non-PCIVs listed in Table 3.6.1.3-1)~~ OPERABILITY supports leak tightness of primary containment. Therefore, the safety analysis of any event requiring isolation of primary containment is applicable to this LCO.

secondary containment bypass leakage valves

DELETE

The DBAs that result in a release of radioactive material for which the consequences are mitigated by PCIVs are a loss of coolant accident (LOCA) and a main steam line break (MSLB) (Refs. 2 and 3). In the analysis for each of these accidents, it is assumed that PCIVs are either closed or function to close within the required isolation time following event initiation. This ensures that potential paths to the environment through PCIVs (including primary containment purge valves) are minimized. Of the events analyzed in References 2 and 3, the LOCA is the most limiting event due to radiological consequences. In addition, the ~~non-PCIVs listed in Table 3.6.1.3-1~~ are also assumed to be closed during the LOCA. The closure time of the main steam isolation valves (MSIVs) is a significant variable from a radiological standpoint. The MSIVs are required to close within 3 to 5 seconds since the 3 second closure time is assumed in the MSIV closure (the most severe overpressurization transient) analysis (Ref. 4) and 5 second closure time is assumed in the MSLB analysis (Ref. 3). Likewise, it is assumed that the primary containment isolates such that release of fission products to the environment is controlled.

secondary containment bypass leakage valves

DELETE

The secondary containment bypass leakage paths leakage rate limits are relocated to the Technical Requirements Manual (TRM) Table 3.6.1.3-1 and are maintained in accordance with the 10 CFR 50 Appendix J Testing Program Plan.

The DBA analysis assumes that isolation of the primary containment is complete and leakage terminated, except for the maximum allowable leakage, L_a, prior to fuel damage.

The single failure criterion required to be imposed in the conduct of unit safety analyses was considered in the original design of the primary containment purge valves. Two valves in series on each purge line provide assurance that both the supply and exhaust lines could be isolated even if a single failure occurred.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

PCIVs satisfy Criterion 3 of Reference 5.

LCO

PCIVs form a part of the primary containment boundary. The PCIV safety function is related to minimizing the loss of reactor coolant inventory and establishing the primary containment boundary during a DBA.

The power operated, automatic isolation valves are required to have isolation times within limits and actuate on an automatic isolation signal. The valves covered by this LCO are listed with their associated stroke times in Ref. 1.

The normally closed manual PCIVs are considered OPERABLE when the valves are closed and blind flanges in place, or open under administrative controls. Normally closed automatic PCIVs, which are required by design (e.g., to meet 10 CFR 50 Appendix R requirements) to be de-activated and closed, are considered OPERABLE when the valve is closed and de-activated. These passive isolation valves and devices are those listed in Reference 1. Purge valves with resilient seals, secondary containment bypass valves, MSIVs, and hydrostatically tested valves must meet additional leakage rate requirements. Other PCIV leakage rates are addressed by LCO 3.6.1.1, "Primary Containment," as Type B or C testing.

secondary containment bypass leakage valves is

This LCO provides assurance that the PCIVs will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the primary containment boundary during accidents. In addition, the LCO ensures leakage through the ~~non-PCIVs listed in Table 3.6.1.3-1 are~~ within the limits assumed in the accident analysis.

DELETE

DELETE

APPLICABILITY

In MODES 1, 2, and 3, a DBA could cause a release of radioactive material to primary containment. In MODES 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, most PCIVs are not required to be OPERABLE and the primary containment purge valves are not required to be normally closed in MODES 4 and 5. Certain valves are required to be OPERABLE, however, to prevent inadvertent reactor vessel draindown. These valves are

The secondary containment bypass leakage paths leakage rate limits are relocated to the TRM Table 3.6.1.3-1 and are maintained in accordance with the 10 CFR 50 Appendix J Testing Program Plan.

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

Condition C is modified by a Note indicating this Condition is applicable only to those penetration flow paths with only one PCIV. For penetration flow paths with two or more PCIVs, Conditions A and B provide the appropriate Required Actions. This Note is necessary since this Condition is written specifically to address those penetrations with a single PCIV.

Required Action C.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows them to be verified by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment, once they have been verified to be in the proper position, is low.

The secondary containment bypass leakage paths leakage rate limits are relocated to the TRM Table 3.6.1.3-1 and are maintained in accordance with the 10 CFR 50 Appendix J Testing Program Plan.

D.1, D.2, and D.3

With the secondary containment bypass leakage rate (SR 3.6.1.3.11), MSIV leakage rate (SR 3.6.1.3.12), or hydrostatically tested line leakage rate (SR 3.6.1.3.13) not within limit, the assumptions of the safety analysis may not be met. Therefore, the leakage rate must be restored to within limit or the affected penetration flow path must be isolated within the Completion Times appropriate for each type of valve leakage: a) hydrostatically tested line leakage not on a closed system and secondary containment bypass leakage are required to be restored within 4 hours; b) MSIV leakage is required to be restored within 8 hours; and c) hydrostatically tested line leakage on a closed system is required to be restored within 72 hours. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. Required

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.10

The TIP shear isolation valves are actuated by explosive charges. An in place functional test is not possible with this design. The explosive squib is removed and tested to provide assurance that the valves will actuate when required. The replacement charge for the explosive squib shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of the batch successfully fired, and shall be installed in accordance with the manufacturer's recommendations. Other administrative controls, such as those that limit the shelf life and operating life, as applicable, of the explosive charges, must be followed. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

The secondary containment bypass leakage paths leakage rate limits are relocated to the TRM Table 3.6.1.3-1 and are maintained in accordance with the 10 CFR 50 Appendix J Testing Program Plan.

in TRM Table 3.6.1.3-1

individual

SR 3.6.1.3.11

This SR ensures that the leakage rate of secondary containment bypass leakage paths (with the exception of the MSIVs, which are tested per SR 3.6.1.3.12) is less than or equal to the ~~specified~~ leakage rate. While the MSIVs are also classified as secondary containment bypass leakage pathway valves, they are evaluated according to SR 3.6.1.3.12, and if not within limits, actions are required to be taken in accordance with ACTION D. This provides assurance that the assumptions in the radiological evaluations that form the basis of the USAR (Ref. 2) are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. The Frequency is required by the 10 CFR 50 Appendix J Testing Program Plan.

analyzed

DELETE

in the safety analysis (Appendix C of Reference 8)

Bypass leakage is considered part of L_a.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.12

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

MSIV leakage is considered part of L_a.

SR 3.6.1.3.13

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

REFERENCES

1. Technical Requirements Manual.
2. USAR, Section 15.6.5.
3. USAR, Section 15.6.4.
4. USAR, Section 15.2.4.
5. 10 CFR 50.36(c)(2)(ii).
6. USAR, Section 6.2.4.3.2.
7. 10 CFR 50, Appendix J Option B.
8. H21C-106, "Unit 2 LOCA w/LOOP AST Methodology."

TRM Table 3.6.1.3-1 (page 1 of 2)
Secondary Containment Bypass Leakage Paths Leakage Rate Limits

VALVE NUMBER	VALVE DESCRIPTION	PER VALVE LEAK RATE (SCFH)
2MSS*MOV111 2MSS*MOV112	Main steam drain line (inboard)	1.875
2MSS*MOV208	Main steam drain line (outboard)	0.625
2CMS*SOV74A, B (d) 2CMS*SOV75A, B (d) 2CMS*SOV76A, B (d) 2CMS*SOV77A, B (d)	4 Post-accident sampling lines	0.2344
2DER*MOV119 2DER*RV344 2DER*MOV120	Drywell equipment drain lines	(a) 1.25
2DER*MOV130 2DER*MOV131	Drywell equipment vent line	0.625
2DFR*MOV120 2DFR*MOV121 2DFR*RV228	Drywell floor drain line	1.875 (b)
2DFR*MOV139 2DFR*MOV140	Drywell floor vent line	0.9375
2WCS*MOV102 2WCS*MOV112	RWCU line	2.5
2FWS*V23A, B 2FWS*V12A, B	Feedwater line	12.0
2CPS*AOV104 2CPS*AOV106 2CPS*AOV105 2CPS*AOV107	CPS supply line to drywell CPS supply line to supp. chamber	4.38 3.75

(continued)

(a) The combined leakage rate for these two valves shall be ≤ 1.25 SCFH.

(b) The combined leakage rate for these two valves shall be ≤ 1.875 SCFH.

TRM Markup provided for information only.

TRM Table 3.6.1.3-1 (page 2 of 2)
Secondary Containment Bypass Leakage Paths Leakage Rate Limits

VALVE NUMBER	VALVE DESCRIPTION	PER VALVE LEAK RATE (SCFH)
2CPS*SOV119 2CPS*SOV120 2CPS*SOV121 2CPS*SOV122	CPS supply line to supp. chamber	0.625
2IAS*SOV164 2IAS*V448	Inst. air to ADS accumulators	0.9375
2IAS*SOV165 2IAS*V449	Inst. air to ADS accumulators	0.9375
2GSN*SOV166 2GSN*V170	N2 purge to TIP index mechanism	(c)
2IAS*SOV166 2IAS*SOV184	Inst. air to SRV accumulators	(c)
2IAS*SOV167 2IAS*SOV185	Inst. air to drywell	(c)
2IAS*SOV168 2IAS*SOV180	Inst. air to CPS valve in supp. chamber	(c)
2CPS*SOV132 2CPS*V50	Inst. air to CPS valve in supp. chamber	(c)
~~2CPS*SOV133~~ ~~2CPS*V51~~	~~Inst. air to CPS valve in supp. chamber~~	~~(c)~~

DELETE
DELETE
DELETE

(c) The combined leak rate for these penetrations shall be ≤ 3.6 SCFH. The assigned leakage rate through a penetration shall be that of the valve with the highest leakage rate in that penetration. However, if a penetration is isolated by one closed and de-activated automatic valve, closed manual valve, or blind flange, the leakage through the penetration shall be the actual pathway leakage.

(d) The LCO requirements and leakage rate limit shall apply until such time as a modification eliminates the potential secondary containment bypass leakage path.

TRM Markup provided for information only.