VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261
November 8, 2001

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No.: 01- 501
CM/RAB R0
Docket Nos.: 50-338
50-339
License Nos.: NPF-4
NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
NORTH ANNA POWER STATION UNITS 1 AND 2
PROPOSED IMPROVED TECHNICAL SPECIFICATIONS
REQUEST FOR ADDITIONAL INFORMATION
ITS 3.9.4, CONTAINMENT PENETRATIONS
BEYOND SCOPE ISSUE (TAC Nos. MB 1443 and MB 1444)

This letter transmits our response to the NRC's request for additional information (RAI) regarding the North Anna Power Station (NAPS) Units 1 and 2 proposed Improved Technical Specifications (ITS). The North Anna ITS license amendment request was submitted to the NRC in a December 11, 2000 letter (Serial No. 00-606). The NRC requested additional information regarding ITS 3.9.4, "Containment Penetrations." This information was requested in a NRC letter dated July 31, 2001 (TAC Nos. MB1443 and MB1444).

Attached is the NRC's RAI and our response to the RAI. As a result of the NRC's RAI, ITS 3.9.4 has been revised to adopt the Improved Standard Technical Specifications (NUREG-1431) and the current Technical Specifications. This eliminates our beyond scope change.

If you have any further questions or require additional information, please contact us.

Very truly yours,

Leslie N. Hartz
Vice President - Nuclear Engineering

Attachment

Commitments made in this letter: None

A001

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SN: 01-501
Docket Nos.: 50-338/339
Subject: RAI - ITS 3.9.4 – Cont. Penetrations

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Leslie N. Hartz, who is Vice President - Nuclear Engineering, of Virginia Electric and Power Company. She has affirmed before me that she is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of her knowledge and belief.

Acknowledged before me this 8Th day of November, 2001.

My Commission Expires: 3-31-04.

Maggie McClure
Notary Public

(SEAL)

Attachment

Proposed Improved Technical Specifications
Response to Request for Additional Information
ITS 3.9.4, "Containment Penetrations"

Virginia Electric and Power Company
(Dominion)

North Anna Power Station Units 1 and 2

North Anna Improved Technical Specifications (ITS) Review Comments
ITS Section 3.9.4, Containment Penetrations
(TAC Nos. MB 1443 and MB 1444)

RAI Response: After considering the NRC's Requests for Additional Information (RAIs) and reviewing the allowance in the current Technical Specifications (CTS) to have the containment personnel airlock doors open during fuel movement, the Company has determined that TSTF-68, "Containment Personnel Airlock Doors Open During Fuel Movement," is applicable to North Anna. This TSTF was written to allow utilities to incorporate CTS allowances into their Improved Technical Specifications (ITS). The revisions to the North Anna ITS submittal are attached.

Incorporating TSTF-68 into the North Anna ITS eliminates the beyond scope issue (TAC Nos. MB1443 and MB1444) upon which the subject RAIs are based, because the NAPS ITS are now consistent with the CTS, as approved by the NRC, and the Improved Standard Technical Specifications (ISTS). Therefore, response to the RAIs is not required.

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

a. The equipment hatch closed and held in place by four bolts;

b. One door in each air lock is capable of being closed; and MB 1443 MB 1444 R9

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE containment purge and exhaust isolation valve. MB 1443 MB 1444 R9

- - - - - - - - - - - - - - NOTE - - - - - - - - - - - - - -
Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.
- -

APPLICABILITY: During movement of recently irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend movement of recently irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.9.4.1	Verify each required containment penetration is in the required status.	7 days
SR 3.9.4.2	----------NOTE---------- Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.4.c.1. ----------	
	Verify each required containment purge and exhaust valve actuates to the isolation position on manual initiation.	18 months

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R9

B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations

BASES

BACKGROUND

During movement of recently irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, this is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the Appendix J leakage criteria and tests are not required. MB 1443 MB 1444 R9

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the requirements of 10 CFR 100. Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions. MB 1443 MB 1444 R9

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. During movement of recently irradiated fuel assemblies within containment, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced.

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." One of the containment air locks is an integral part of the containment equipment hatch. During refueling the air lock that is part of the containment equipment hatch is typically MB 1443 MB 1444 R9

(continued)

BASES

BACKGROUND (continued)

replaced by a temporary hatch plate. While the temporary hatch plate is installed, there is only one air lock by which to enter containment. The LCO only applies to containment air locks that are installed. Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment OPERABILITY is required. During periods of unit shutdown when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. During movement of recently irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one air lock door must always remain capable of being closed. MB 1443 MB 1444 R9

The requirements for containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted to within regulatory limits. MB 1443 MB 1444 R9

The Containment Purge and Exhaust System includes a 36 inch purge penetration and a 36 inch exhaust penetration. During MODES 1, 2, 3, and 4, the two valves in each of the purge and exhaust flow paths are secured in the closed position. The Containment Purge and Exhaust System is not subject to a Specification in MODE 5. MB 1443 MB 1444 R9

In MODE 6, large air exchanges are necessary to conduct refueling operations. The 36 inch purge system is used for this purpose. MB 1443 MB 1444 R9

The containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Isolation may be achieved by an OPERABLE automatic isolation valve, or by a manual isolation valve, blind flange, or equivalent. Equivalent isolation methods must be approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for the other containment penetrations during recently irradiated fuel movements. MB 1443 MB 1444 R9

APPLICABLE SAFETY ANALYSES

During movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident involving handling recently irradiated fuel. The fuel handling accident is a postulated event that involves damage to irradiated fuel MB 1443 MB 1444 R9

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

(Ref. 1). Fuel handling accidents, analyzed in Reference 2, involve dropping a single irradiated fuel assembly and handling tool. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," in conjunction with a minimum decay time of 100 hours prior to movement of recently irradiated fuel with containment closure capability or movement of fuel that has not been recently irradiated without containment closure capability ensures that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1 (Ref. 2), defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits). MB 1443 MB 1444 R9

Containment penetrations satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

This LCO limits the consequences of a fuel handling accident involving handling recently irradiated fuel in containment by limiting the potential escape paths for fission product radioactivity released within containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE containment purge and exhaust penetrations and containment personnel air locks. For the OPERABLE containment purge and exhaust penetrations, this LCO ensures that these penetrations are isolable by a containment purge and exhaust isolation valve. MB 1443 MB 1444 R9

The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during movement of recently irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident.

The containment personnel air lock doors may be open during movement of recently irradiated fuel in the containment provided that one door is capable of being closed in the event of a fuel handling accident. Should a fuel handling MB 1443 MB 1444 R9

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BASES

LCO (continued)

accident occur inside containment, one personnel air lock door will be closed following an evacuation of the containment. MB 1443 MB 1444 R9

APPLICABILITY

The containment penetration requirements are applicable during movement of recently irradiated fuel assemblies within containment because this is when there is a potential for the limiting fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when movement of irradiated fuel assemblies within containment is not being conducted, the potential for a fuel handling accident does not exist. Additionally, due to radioactive decay, a fuel handling accident involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within a time frame established by analysis. The term recently is defined as all irradiated fuel assemblies, until analysis is performed to determine a specific time.) will result in doses that are well within the guideline values specified in 10 CFR 100 even without containment closure capability. Therefore, under these conditions no requirements are placed on containment penetration status.

ACTIONS

A.1

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Purge and Exhaust Isolation System not capable of manual actuation when the purge and exhaust valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending movement of recently irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position. MB 1443 MB 1444 R9

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open purge and exhaust valves will demonstrate that the valves are not blocked from

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1 (continued)

closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each valve is capable of being manually closed. MB 1443 MB 1444 R9

The Surveillance is performed every 7 days during movement of recently irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident involving handling recently irradiated fuel that releases fission product radioactivity within the containment will not result in a release of significant fission product radioactivity to the environment in excess of those recommended by Standard Review Plan 15.7.4 (Ref. 2). MB 1443 MB 1444 R9

SR 3.9.4.2

This Surveillance demonstrates that each containment purge and exhaust valve actuates to its isolation position on manual initiation. The 18 month Frequency maintains consistency with other similar valve testing requirements. MB 1443 MB 1444 R9 This Surveillance performed during MODE 6 will ensure that the valves are capable of being closed after a postulated fuel handling accident involving handling recently irradiated fuel to limit a release of fission product radioactivity from the containment. The SR is modified by a Note stating that this Surveillance is not required to be met for valves in isolated penetrations. The LCO provides the option to close penetrations in lieu of requiring manual initiation capability. MB 1443 MB 1444 R9

REFERENCES

1. UFSAR, Section 15.4.7.

2. NUREG-0800, Rev. 2, July 1981. MB 1443 MB 1444 R9

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CTS

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

LCO 3.9.4.a

a. The equipment hatch closed and held in place by ~~four~~ 9 bolts; is capable of being (1) TSTF-68 MB1443 MB1444 R9

LCO 3.9.4.b footnote *a

b. One door in each air lock closed; and

LCO 3.9.4.c

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE ~~Containment Purge and Exhaust Isolation System~~ valve (2) Insert TSTF 312 MB1443 MB1444 R9

LCO Note

APPLICABILITY: ~~During CORE ALTERATIONS.~~ During movement of irradiated fuel assemblies within containment. recently TSTF-51

Appl.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME	
A. One or more containment penetrations not in required status.	A.1 Suspend CORE ALTERATIONS.	Immediately	TSTF-51
	AND		
Action	A.~~2~~1 (1) Suspend movement of irradiated fuel assemblies within containment. recently	Immediately	TSTF-51

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---------- NOTE ----------

Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

CTS

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
4.9.4	SR 3.9.4.1	Verify each required containment penetration is in the required status.	7 days
4.6.3.12.c	SR 3.9.4.2	Verify each required containment purge and exhaust valve actuates to the isolation position on ~~an actual or simulated~~ actuation signal. Manual initiation	~~{18}~~ months

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New

NOTE
Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.4.c.1.

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1. The brackets are removed and the proper plant specific information/value is provided.

2. ISTS LCO 3.9.4.c states that each penetration providing direct access from the containment atmosphere to the outside atmosphere must be either be closed or "capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System." ISTS SR 3.4.9.2 requires verification that each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal. North Anna CTS 3.9.4.c.2 states that the containment purge and exhaust must be capable of being closed by an OPERABLE "automatic" valve and CTS Surveillance 4.6.3.1.2.c states that the containment purge and exhaust valves must be verified to close on a Containment Purge and Exhaust isolation signal. ITS LCO 3.9.4.c states that each penetration providing direct access from the containment atmosphere to the outside atmosphere must be either be closed or "capable of being closed by an OPERABLE containment purge and exhaust isolation valve." ITS SR 3.9.4.2 states that each required containment purge and exhaust valve must be verified to actuate to the isolation position on manual initiation. This eliminates the requirement for automatic closure of the containment purge and exhaust valves on a high radiation signal from the containment. MB1443 MB1444 R9

   The North Anna analysis for a fuel handling accident does not assume that the containment purge and exhaust valves are automatically closed following the event. As stated in the Safety Evaluation for North Anna license amendment 198 / 179, dated February 27, 1996, "The staff's dose calculation was based on the assumption that all of the radioactive material released to the containment escapes the containment within 2 hours." No credit is taken for automatic closure of the containment purge and exhaust valves. The North Anna CTS is not consistent with the NRC approved analysis in that the CTS requires a system to be OPERABLE that is not assumed in the accident analysis The ITS corrects this inconsistency. Eliminating the requirement for automatic closure using the Containment Purge and Exhaust System from the ITS also makes the treatment of the containment purge and exhaust valves consistent with the treatment of all other penetrations, which can be unisolated under administrative control provided they can be promptly closed in the event of a fuel handling accident.

   Therefore, these changes are consistent with the North Anna fuel handling accident analysis and the NRC's Safety Evaluation of February 27, 1996.

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B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations

BASES

BACKGROUND

During ~~CORE ALTERATIONS or~~ movement of recently irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, this is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the Appendix J leakage criteria and tests are not required. TSTF-51 MB1443 MB1444 R9 MB 1443 MB1444 R9

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the requirements of 10 CFR 100. Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions. MB 1443 MB 1444 R9

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. During ~~CORE ALTERATIONS or~~ movement of recently irradiated fuel assemblies within containment, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced. recently TSTF-51

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment OPERABILITY is required. During periods of unit shutdown Insert (1) MB 1443 MB 1444 R9

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R9

One of the containment air locks is an integral part of the containment equipment hatch. During refueling the air lock that is part of the containment equipment hatch is typically replaced by a temporary hatch plate. While the temporary hatch plate is installed, there is only one air lock by which to enter containment. The LCO only applies to containment air locks that are installed.

BASES

BACKGROUND (continued)

when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one air lock door must always remain closed.

The requirements for containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted from escaping to the environment. The closure restrictions are sufficient to restrict fission product radioactivity release from containment due to a fuel handling accident during refueling.

The Containment Purge and Exhaust System includes two subsystems. The normal subsystem includes a 42 inch purge penetration and a 42 inch exhaust penetration. The second subsystem, a minipurge system, includes an 8 inch purge penetration and an 8 inch exhaust penetration. During MODES 1, 2, 3, and 4, the two valves in each of the normal purge and exhaust penetrations are secured in the closed position. The two valves in each of the two minipurge penetrations can be opened intermittently, but are closed automatically by the Engineered Safety Features Actuation System (ESFAS). Neither of the subsystems is subject to a Specification in MODE 5.

In MODE 6, large air exchangers are necessary to conduct refueling operations. The normal 42 inch purge system is used for this purpose, and all four valves are closed by the ESFAS in accordance with LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation."

The minipurge system remains operational in MODE 6, and all four valves are also closed by the ESFAS.

or

The minipurge system is not used in MODE 6. All four 8 inch valves are secured in the closed position.

The other containment penetrations that provide direct access from containment atmosphere to outside atmosphere

(continued)

BASES

BACKGROUND (continued)

must be isolated on at least one side. Isolation may be achieved by an OPERABLE automatic isolation valve, or by a manual isolation valve, blind flange, or equivalent. Equivalent isolation methods must be approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for the other containment penetrations during fuel movements (Ref. 1). recently irradiated

MB 1443 MB 1444 R9

(1) TSTF-51

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 2). Fuel handling accidents analyzed in Reference 2 include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," and the minimum decay time of 100 hours prior to CORE ALTERATIONS ensure that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1 (Ref. 3), defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits).

involving handling recently irradiated fuel

(2) involve

Insert 1

in conjunction with

(2) TSTF-51

(1) MB 1443 MB 1444 R9

(2) MB 1443 MB 1444 R9 TSTF-51

Containment penetrations satisfy Criterion 3 of the NRC Policy Statement. 10 CFR 50.36(c)(2)(ii)

(3)

LCO

Insert 2

This LCO limits the consequences of a fuel handling accident in containment by limiting the potential escape paths for fission product radioactivity released within containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE containment purge and exhaust penetrations. For the OPERABLE containment purge and exhaust penetrations, this LCO ensures that these penetrations are isolable by the Containment Purge and Exhaust Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic purge and exhaust valve

involving handling recently irradiated fuel

TSTF-312 TSTF-68 MB 1443 MB 1444 R9 TSTF-51

and containment personnel airlocks

(a) Valve

TSTF-68 MB 1443 MB 1444 R9

(4)

(continued)

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INSERT 1

movement of recently irradiated fuel with containment closure capability or movement of fuel that has not been recently irradiated without containment closure capability } (7)

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INSERT 2

---------- REVIEWER'S NOTE ----------

The allowance to have containment personnel air lock doors open and penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated during fuel movement and CORE ALTERATIONS is based on (1) confirmatory dose calculations of a fuel handling accident as approved by the NRC staff which indicate acceptable radiological consequences and (2) commitments from the licensee to implement acceptable administrative procedures that ensure in the event of a refueling accident (even though the containment fission product control function is not required to meet acceptable dose consequences) that the open airlock can and will be promptly closed following containment evacuation and that the open penetration(s) can and will be promptly closed. The time to close such penetrations or combination of penetrations shall be included in the confirmatory dose calculations. (6)

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BASES

LCO (continued)

closure times specified in the FSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

(4)

TSTF-312 MB 1443 MB 1444 R9
TSTF-68

Insert 1

Insert 2

APPLICABILITY

The containment penetration requirements recently are applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment because this is when there is the limiting a potential for a fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when CORE ALTERATIONS or movement of irradiated fuel assemblies within containment is are not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

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Insert 3

Insert 4

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ACTIONS

A.1 and A.2

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MB 1443 MB 1444 R9

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Purge and Exhaust Isolation System not capable of automatic manual actuation when the purge and exhaust valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending CORE ALTERATIONS and movement of irradiated fuel assemblies recently within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

(4)

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TSTF-51

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open purge and exhaust valves will demonstrate that the valves are not blocked from closing. Also the Surveillance will

(continued)

INSERT 1

The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during ~~CORE ALTERATIONS~~ or movement of recently (5) irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident.

INSERT 2

The containment personnel airlock doors may be open during movement of recently irradiated fuel in the containment ~~and during CORE ALTERATIONS~~ provided that one door is capable of being closed in the event of a fuel handling accident. Should a fuel handling accident occur inside containment, one personnel airlock door will be closed following an evacuation of the containment. (5)

INSERT 3

Additionally, due to radioactive decay, a fuel handling accident involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within a time frame established by analysis. The term recently is defined as all irradiated fuel assemblies, until analysis is performed to determine a specific time.) will result in doses that are well within the guideline values specified in 10 CFR 100 even without containment closure capability. (7)

INSERT 4

---------- REVIEWER'S NOTE ----------

The addition of the term "recently" associated with handling irradiated fuel in all of the containment function Technical Specification requirements is only applicable to those licensees who have demonstrated by analysis that after sufficient radioactive decay has occurred, off-site doses resulting from a fuel handling accident remain below the Standard Review Plan limits (well within 10CFR100).

Additionally, licensees adding the term "recently" must make the following commitment which is consistent with draft NUMARC 93-01, Revision 3, Section 11.2.6 "Safety Assessment for Removal of Equipment from Service During Shutdown Conditions," subheading "Containment -Primary (PWR)/Secondary (BWR)."

"The following guidelines are included in the assessment of systems removed from service during movement irradiated fuel:

- During fuel handling/core alterations, ventilation system and radiation monitor availability (as defined in NUMARC 91-06) should be assessed, with respect to filtration and monitoring of releases from the fuel. Following shutdown, radioactivity in the fuel decays away fairly rapidly. The basis of the Technical Specification OPERABILITY amendment is the reduction in doses due to such decay. The goal of maintaining ventilation system and radiation monitor availability is to reduce doses even further below that provided by the natural decay.

- A single normal or contingency method to promptly close primary or secondary containment penetrations should be developed. Such prompt methods need not completely block the penetration or be capable of resisting pressure.

The purpose of the "prompt methods" mentioned above are to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored."

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(7)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1 (continued)

demonstrate that each valve operator has motive power, which will ensure that each valve is capable of being closed by an OPERABLE automatic containment purge and exhaust isolation signal.

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment.

SR 3.9.4.2

This Surveillance demonstrates that each containment purge and exhaust valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal. The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. In LCO 3.3.6, the Containment Purge and Exhaust Isolation instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS. SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the Inservice Testing Program requirements. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident to limit a release of fission product radioactivity from the containment.

manually
recently
involving handling recently irradiated fuel
Significant
in excess of those recommended by Standard Review Plan 15.7.4 (Ref. 2)
This
involving handling recently irradiated fuel
being closed
Insert
TSTF-51
TSTF-68
TSTF-284
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4

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INSERT

The SR is modified by a Note stating that this Surveillance is not required to be met for valves in isolated penetrations. The LCO provides the option to close penetrations in lieu of requiring automatic actuation capability.

BASES (continued)

REFERENCES

1. GPU Nuclear Safety Evaluation SE-0002000-001. Rev. 0. May 20. 1988.
2. FSAR. Section 15.4.5.
3. NUREG-0800. Section 15.7.4. Rev. 1. July 1981.

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1. Changes are made (additions, deletions, and/or changes) to the ISTS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The reference to a Fuel Handling Accident being initiated by CORE ALTERATIONS or the dropping of a heavy object onto irradiated fuel assemblies is deleted from the Applicable Safety Analyses section of the Bases. CORE ALTERATIONS or dropping of a heavy object onto irradiated fuel assemblies are not assumed to initiate a Fuel Handling Accident. Only the dropping of an irradiated fuel assembly is assumed to initiate a Fuel Handling Accident. MB 1443 MB 1444 R9

3. The criteria of the NRC Final Policy Statement on Technical Specifications Improvements have been included in 10 CFR 50.36(c)(2)(ii). Therefore, references in the ISTS Bases to the NRC Final Policy Statement are revised in the ITS Bases to reference 10 CFR 50.36.

4. Changes are made to reflect consistency with or those changes made to the ITS. The following requirements are renumbered or revised, where applicable, to reflect the changes.

5. TSTF-51 changed the Applicability of ISTS 3.9.4 by eliminating the Applicability, "During CORE ALTERATIONS," and applying the requirements only during movement of "recently" irradiated fuel. Changes to the ISTS 3.9.4 Bases by other TSTFs did not include this change. Therefore, these changes have been revised to be consistent with the changes made by TSTF-51. MB 1443 MB 1444 R9

6. TSTF-68 and TSTF-312 add very similar Reviewer's Notes to the Bases. (In Revision 2 of NUREG-1431, the two Reviewer's Notes are combined into one Note.) The Notes state that the allowance to have containment personnel air lock doors open and penetration flow paths with direct access from the containment atmosphere to the outside atmosphere unisolated during fuel movement is based on (1) confirmatory dose calculations of a fuel handling accident as approved by the NRC staff which indicate acceptable radiological consequences and (2) commitments from the licensee to implement acceptable administrative procedures that ensure in the event of a refueling accident that the open airlock can and will be promptly closed following containment evacuation and that the open penetration(s) can and will be promptly closed. The time to close such penetrations or combination of penetrations shall be included in the confirmatory dose calculations. The confirmatory dose calculations for a fuel handling accident were approved by the NRC staff in a Safety Evaluation for License Amendment 198/179 dated February 27, 1996. The time to close such penetrations or combination of penetrations was included in the confirmatory dose calculations. The Company commits to implement acceptable administrative procedures that ensure in the event of a refueling accident that the open airlock can and will be promptly closed following containment evacuation and that the open penetration(s) can and will be promptly closed. MB 1443 MB 1444 R9

7. TSTF-51 revises the ISTS to only apply Technical Specification controls during movement of "recently" irradiated fuel. A fuel handling accident without containment closure with fuel that has not been irradiated "recently" will not result in offsite doses that exceed the guidelines in 10 CFR 100. Therefore, the containment closure requirements are only required when moving recently irradiated fuel assemblies. The proposed Bases in TSTF-51 defines "recently" irradiated fuel as fuel that has been part of a critical reactor core within a licensee-specified number of days. The Company has not determined a plant-specific value for this decay time. Therefore, the Bases are modified to state that until analyses are performed to determine a specific value, all irradiated fuel assemblies will be considered "recently irradiated." This change appears in the Applicable Safety Analysis and Applicability sections of the Bases. This change is appropriate because it maintains Technical Specifications controls on all irradiated fuel and provides the ability to establish a specific decay time as the definition of "recently" irradiated under the Technical Specifications Bases Control Program.

   A Reviewer's Note is added to the ISTS 3.9.4 Bases to explain the application of TSTF-51, which requires a commitment from the licensee. As stated in TSTF-51, the commitment described in the Reviewer's Note in TSTF-51 is consistent with requirements in NUMARC 93-01. The Company joined the rest of the nuclear industry in committing to implement NUMARC 93-01. Therefore, no additional actions were necessary to implement this commitment.

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8. The brackets have been removed and the proper plant specific information/value has been provided.

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UNIT 1

ITS 3.9.4

A.1

ITS

02-27-96

REFUELING OPERATIONS

CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

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3.9.4 The containment building penetrations shall be in the following status:

LCO 3.9.4.a a. The equipment door closed and held in place by a minimum of four bolts,

LCO 3.9.4.b b. A minimum of one door in each airlock is closed,* and

LCO 3.9.4.C c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either: L.1

1. Closed by an isolation valve, blind flange, or manual valve (or equivalent), or L.6
2. Be capable of being closed by an OPERABLE automatic Containment Purge and Exhaust isolation valve. Insert LCO Note L.4

LCO Note Appl. APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment. (recently) L.5

ACTION:

Action A.1 With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment building. L.5

The provisions of Specification 3.0.3 are not applicable. (recently) A.2

SURVEILLANCE REQUIREMENTS (in the required status)

SR 3.9.4.1 4.9.4 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic Containment Purge and Exhaust isolation valve within 100 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment building by: A.3 L.2 L.5 (recently)

a. Verifying the penetrations are in their closed/isolated condition,** or A.3

b. Testing the Containment Purge and Exhaust isolation valves and system per the applicable portions of Specifications 4.6.3.1.2 and 4.9.9 L.6

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LCO 3.9.4.b * Both doors of the containment personnel airlock may be open provided:

a. One personnel airlock door is OPERABLE (i.e., the door is capable of being closed and that an individual is designated to close the door), and L.8

b1. There is at least 23 feet of water above the top of the reactor pressure vessel flange during movement of fuel assemblies within the containment, or A.5

b2. There is at least 23 feet of water above the top of irradiated fuel assemblies within the reactor pressure vessel during CORE ALTERATIONS excluding movement of fuel assemblies. L.7

** If both doors of the containment personnel airlock are open pursuant to Specification 3.9.4.b above, one door shall be verified to be capable of being closed at the above surveillance frequency. A.4

ITS

SURVEILLANCE REQUIREMENTS (Continued)

b. Prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of the applicable cycling test and verification of isolation time.

4.6.3.1.2 Each containment isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a Phase A containment isolation test signal, each Phase A isolation valve actuates to its isolation position.

b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.

c. Verifying that on a Containment Purge and Exhaust isolation signal, each Purge and Exhaust valve actuates to its isolation position.

d. Cycling each weight or spring loaded check valve not testable during plant operation, through one complete cycle of full travel and verifying that each check valve remains closed when the differential pressure in the direction of flow is less than 1.2 psid and opens when the differential pressure in the direction of flow is greater than or equal to 1.2 psid but less than 5.0 psid.

4.6.3.1.3 The isolation time of each power operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

See ITS 3.6.3

L.3

L.6

SR 3.9.4.2

See ITS 3.6.3

or manual initiation

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Insert SR 3.9.4.2 Note

UNIT 2

A.1

ITS 3.9.4

ITS

02-27-96

REFUELING OPERATIONS

CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

LCO 3.9.4.a a. The equipment door closed and held in place by a minimum of four bolts,

LCO 3.9.4.b b. A minimum of one door in each airlock is closed,* and

LCO 3.9.4.C c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either: (or equivalent) L.1

1. Closed by an isolation valve, blind flange, (or manual valve) or L.6
2. Be capable of being closed by an OPERABLE (automatic) Containment Purge and Exhaust isolation valve. (Insert + LCO Note) L.4

LCO Note Appl. APPLICABILITY: During ~~CORE ALTERATIONS~~ or movement of (recently) irradiated fuel within the containment. L.5

ACTION:

Action A.1 With the requirements of the above specification not satisfied, immediately suspend all operations involving ~~CORE ALTERATIONS~~ or movement of (recently) irradiated fuel in the containment building. L.5

~~The provisions of Specification 3.0.3 are not applicable.~~ A.2

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SURVEILLANCE REQUIREMENTS

SR 3.9.4.1 4.9.4 Each of the above required containment building penetrations shall be determined to be (in the required status) A.3

either ~~in its~~ closed/isolated condition or capable of being closed by an OPERABLE automatic Containment Purge and Exhaust isolation valve within 100 hours prior to the start of and at least once per 7 days during ~~CORE ALTERATIONS~~ or movement of (recently) irradiated fuel in the containment building by: L.2 L.5

a. ~~Verifying the penetrations are in their closed/isolated condition,~~** or A.3

LCO 3.9.4.b * Both doors of the containment personnel airlock may be open provided:

a. One personnel airlock door is OPERABLE (i.e., the door is capable of being closed ~~and that an individual is designated to close the door~~), and L.8

b1. ~~There~~ is at least 23 feet of water above the top of the reactor ~~pressure~~ vessel flange during movement of fuel assemblies within the containment, or A.5

b2. ~~There~~ is at least 23 feet of water above the top of irradiated fuel assemblies within the reactor pressure vessel during CORE ALTERATIONS excluding movement of fuel assemblies. L.7

** ~~If both doors of the containment personnel airlock are open pursuant to Specification 3.9.4.b above, one door shall be verified to be capable of being closed at the above surveillance frequency.~~ A.4

A.1

8-21-80

REFUELING OPERATIONS

CONTAINMENT BUILDING PENETRATIONS

SURVEILLANCE REQUIREMENTS (Continued)

b. Testing the Containment Purge and Exhaust isolation valves and system per the applicable portions of Specifications 4.6.3.1.2 and 4.9.9.

L.6

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ITS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.1.2 Each containment isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a Phase A containment isolation test signal, each Phase A isolation valve actuates to its isolation position.

b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.

See ITS 3.6.3

SR 3.9.4.2

c. Verifying that on a Containment Purge and Exhaust isolation signal each Purge and Exhaust valve actuates to its isolation position.

L3
L.6
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d. Cycling each weight or spring loaded check valve not testable during plant operation, through one complete cycle of full travel and verifying that each check valve remains closed when the differential pressure in the direction of flow is less than 1.2 psid and opens when the differential pressure in the direction of flow is greater than or equal to 1.2 psid but less than 5.0 psid.

See ITS 3.6.3

4.6.3.1.3 The isolation time of each power operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

on manual initiation

Insert SR 3.9.4.2 Note

ADMINISTRATIVE CHANGES

A.1 In the conversion of the North Anna Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 1, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.9.4 states, "The provisions of Specification 3.0.3 are not applicable." CTS 3.9.4 is only applicable during specified conditions of MODE 6. ITS 3.9.4 does not include this statement. ITS LCO 3.0.3 states, "LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4." This changes CTS by deleting an allowance already provided in a different portion of the ITS. MB 1443 MB 1444 R9

This change is acceptable because ITS LCO 3.0.3 requirements are consistent with those stated in the CTS. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 CTS 4.9.4 states, in part, "Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic Containment Purge and Exhaust isolation valve . . . by verifying the penetrations are in their closed/isolated condition." ITS SR 3.9.4.1 states, "Verify each required containment penetration is in the required status." This changes the CTS by eliminating the discussion of the required status of the containment penetrations from the Surveillance.

This change is acceptable because the CTS requirements have not changed. The required status of the penetrations in CTS 4.9.4 is the same as the description in CTS LCO 3.9.4. The ITS eliminates this duplication by referring to the "required status" of the penetrations and relying on the LCO description. The changes to the CTS LCO requirements are described in other DOCS. This change is designated as administrative because it does not result in technical changes to the CTS. MB 1443 MB 1444 R9

A.4 CTS 4.9.4.a is modified by a footnote ** which states "If both doors of the containment personnel airlock are open pursuant to Specification 3.9.4.b above, one door shall be verified to be capable of being closed at the above surveillance frequency." ITS SR 3.9.4.1 states, "Verify each required containment penetration is in the required status." This changes the CTS by eliminating the explicit discussion of the containment personnel airlock surveillance testing.

This change is acceptable because the CTS requirements have not changed. Both the CTS and the ITS require verification that one containment airlock door is capable of

being closed every 7 days. This change is designated as administrative because it does not result in technical changes to the CTS.

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A.5 CTS 3.9.4, Footnote *, states that both doors of the containment personnel airlock may be open provided, in part, that there is at least 23 feet of water above the top of the reactor pressure vessel flange during movement of fuel assemblies within the containment. ITS 3.9.4 does not contain these restrictions.

This change is acceptable because the requirements in the footnote are duplicative of the requirements of ITS LCO 3.9.7, which requires ≥ 23 feet of water above the top of the reactor vessel flange during movement of recently irradiated fuel assemblies within containment. Addition of the word "recently" is addressed in the DOCs of ITS 3.9.7. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

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None

LESS RESTRICTIVE CHANGES

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.9.4.c.1 states that one option for the status of a containment penetration is for it to be, "Closed by an isolation valve, blind flange, or manual valve." ITS 3.9.4.c.1 states that one option for the status of a containment penetration is, "Closed by a manual or automatic isolation valve, blind flange, or equivalent." As all isolation valves are either manual or automatic, the addition of this phrase to the CTS does not result in a change. This changes the CTS by eliminating the phrase "manual valve" and adding the option of having, "or equivalent," as the means of closing the penetration.

The purpose of CTS 3.9.4 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) inside containment analysis. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety

analyses and licensing basis. The option of using an equivalent means of containment penetration isolation is added, which is described in the Bases. This includes the use of manual valves, so the current CTS allowance is retained in the ITS. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

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L.2 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS 4.9.4 states that specified containment penetration surveillances shall be performed, "within 100 hours prior to the start of and at least once per 7 days during..." the specified conditions. ITS SR 3.9.4.1 do not include the, "within 100 hours prior to the start of" Frequency. ITS SR 3.0.1 states, "SRs shall be met during the MODES or other specified conditions in the Applicability for the individual LCOs, unless otherwise stated in the SR." Therefore, under the ITS, the Surveillances must be met prior to the initiation of movement of recently irradiated fuel. This changes the CTS by eliminating the stipulation that the Surveillances be met within 100 hours prior to entering the MODE of Applicability.

The purpose of CTS 4.9.4 is to verify the equipment required to meet the LCO is OPERABLE. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. For CTS 4.9.4, the Surveillance Frequency of 7 days verifying containment penetrations are in the required status is acceptable during the MODE of Applicability, and is also acceptable during the period prior to entering the MODE of Applicability. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS 4.9.4 includes a surveillance Frequency of once per 7 days during specified times in the MODE of Applicability for testing Containment Purge and Exhaust System OPERABILITY. The ITS SR 3.9.4.2 Frequency for the same requirement is 18 months. This changes the CTS by changing the Surveillance Frequency from 7 days to 18 months.

The purpose of CTS 4.9.4 is to verify the equipment required to meet the LCO is OPERABLE. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Containment Purge and Exhaust valve testing is still required, but at a Frequency consistent with the testing frequency for containment isolation valves required in MODES 1, 2, 3, and 4. This Frequency provides an appropriate degree of assurance that the valves are OPERABLE. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

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L.4 *(Category 1 – Relaxation of LCO Requirements)* ITS LCO 3.9.4 Note states, "Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls." CTS 3.9.4 does not include such an allowance. This changes the CTS by allowing containment

penetration flow paths to be unisolated under administrative controls during movement of recently irradiated fuel assemblies.

The purpose of CTS 3.9.4 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) inside containment analysis. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The Reviewer's Note in the ISTS LCO Bases associated with the LCO Note states that the allowance to have the personnel air lock doors open and the penetration flow paths unisolated under administrative control requires confirmatory dose calculations approved by the NRC staff and commitments from the licensee to implement acceptable administrative procedures to ensure that in the event of a refueling accident that the open penetration(s) can and will be promptly closed. The Company commits to implementing administrative procedures to ensure that in the event of a refueling accident, the open air locks and open penetration(s) can and will be promptly closed. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

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L.5 *(Category 2 – Relaxation of Applicability)* CTS 3.9.4 is applicable during CORE ALTERATIONS and movement of irradiated fuel assemblies within containment. ITS 3.9.4 is applicable during movement of recently irradiated fuel assemblies within containment. References to CORE ALTERATIONS in CTS 3.9.4 are eliminated in the Applicability, Action, and Surveillances. All references in CTS 3.9.4 to irradiated fuel are changed to "recently" irradiated fuel. This changes the CTS by eliminating requirements for containment closure during CORE ALTERATIONS and movement of fuel that is not recently irradiated.

The purpose of CTS 3.9.4 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) inside containment analysis. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. There are no accidents postulated to occur during CORE ALTERATIONS which result in significant radioactive release except a fuel handling accident. The analysis for a fuel handling accident assumes it is only initiated by movement of irradiated fuel. No CORE ALTERATIONS except the movement of irradiated fuel are assumed to initiate a fuel handling accident. Therefore, imposing requirements during CORE ALTERATIONS in addition to during movement of irradiated fuel is unnecessary. Fuel handling accidents involving irradiated fuel that has not been recently irradiated will not result in offsite doses in excess of the guidelines in 10 CFR Part 100, even without containment closure. Recently irradiated fuel is defined by the decay time since the fuel has been part of a critical reactor core. The Company has not determined this plant-specific value for North Anna. Therefore, the Bases state that "recently irradiated" fuel is all irradiated fuel, until such time as the appropriate

analyses are performed and the Bases modified in accordance with the Technical Specifications Bases Control Program. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

L.6 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.9.4.c.2 requires open containment purge and exhaust valves to be capable of being closed by an OPERABLE automatic Containment Purge and Exhaust isolation valve. CTS Surveillance 4.9.4.b requires testing the Containment Purge and Exhaust isolation valves and system per the applicable portions of Specification 4.6.3.1.2 and 4.9.9. CTS Surveillance 4.6.3.1.2.c requires verifying every 18 months that on a Containment Purge and Exhaust isolation signal, each Purge and Exhaust valve actuates to its isolation position. ITS LCO 3.9.4.c.2 states that open containment purge and exhaust valves be capable of being closed by an OPERABLE isolation valve. ITS SR 3.9.4.2 requires verification that each required containment purge and exhaust valve actuates to the isolation position on manual initiation. This changes the CTS by eliminating the requirement that open containment purge and exhaust valves close automatically on a Containment Purge and Exhaust isolation signal.

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The purpose of CTS 3.9.4 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) inside containment analysis. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The North Anna analysis for a fuel handling accident does not assume that the containment purge and exhaust valves are automatically closed following the event. As stated in the Safety Evaluation for North Anna license amendment 198 / 179, dated February 27, 1996, "The staff's dose calculation was based on the assumption that all of the radioactive material released to the containment escapes the containment within 2 hours." No credit is taken for automatic closure of the containment purge and exhaust valves. The North Anna CTS is not consistent with the NRC approved analysis in that the CTS requires a system to be OPERABLE that is not assumed in the accident analysis. The ITS corrects this inconsistency. Eliminating the requirement for automatic closure using the Containment Purge and Exhaust System from the ITS also makes the treatment of the containment purge and exhaust valves consistent with the treatment of all other penetrations, which can be unisolated under administrative controls provided they can be promptly closed in the event of a fuel handling accident. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.7 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.9.4.b, footnote *, part b.2, states that if both personnel airlock doors are open, there must be at least 23 feet of water above the top of irradiated fuel assemblies within the reactor pressure vessel during CORE ALTERATIONS excluding movement of fuel assemblies. The ITS

does not have that restriction. This changes the CTS by eliminating the requirement on water level during CORE ALTERATIONS when both containment personnel airlock doors are open.

The purpose of CTS 3.9.4 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) inside containment analysis. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. CORE ALTERATIONS, excluding movement of fuel assemblies, is not assumed to initiate a Fuel Handling Accident. As the water level above the fuel and the requirements for isolating containment are only assumed in the analysis of a Fuel Handling Accident, and CORE ALTERATIONS cannot cause a Fuel Handling Accident, these requirements are not necessary and are eliminated. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

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L.8 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.9.4.b is modified by a footnote * and part a of footnote * states that both doors of the containment personnel airlock may be open provided one door is capable of being closed "and that an individual is designated to close the door." ITS LCO 3.9.4 allows both doors of the containment personnel airlock to be open provided one door is capable of being closed. This changes the CTS by eliminating the requirement that "an individual is designated to close the door."

The purpose of CTS 3.9.4 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) inside containment analysis. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The Reviewer's Note in ISTS LCO 3.9.4 Bases states that the allowance to have containment personnel air lock doors open is based on (1) confirmatory dose calculations of a fuel handling accident as approved by the NRC staff which indicate acceptable radiological consequences and (2) commitments from the licensee to implement acceptable administrative procedures that ensure in the event of a refueling accident that the open airlock can and will be promptly closed following containment evacuation. The confirmatory dose calculations were approved by the NRC staff in the Safety Evaluation for License Amendment 198 / 179 dated February 27, 1996. The Company commits to implementing acceptable administrative procedures that ensure in the event of a refueling accident that the open airlock can and will be promptly closed following containment evacuation. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.