Duke Energy®

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July 31, 2006

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

Subject: Duke Power Company LLC d/b/a
Duke Energy Carolinas, LLC
McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370

License Amendment Request for Technical Specification 3.6.3, Containment Isolation Valves, and Technical Specification 3.3.6, Containment Purge and Exhaust Isolation Instrumentation

Pursuant to 10 CFR 50.90, Duke Energy Carolinas (Duke) is requesting an amendment to the McGuire Nuclear Station Facility Operating Licenses and Technical Specifications (TS). This amendment request will revise TS 3.6.3, Containment Isolation Valves, and its associated Bases, by removing the allowance to open the upper containment purge isolation valves in the applicable modes consistent with the lower containment purge isolation valves.

Maintaining the upper containment purge isolation valves in the closed position is currently administratively controlled in Modes 1 through 4 at McGuire Nuclear Station. These valves have a history of not fully seating closed after cycling without manual assistance. Since there are no plans to upgrade these valves by modification, it is proposed to revise TS 3.6.3 and its Bases accordingly. Catawba Nuclear Station TS 3.6.3 also does not allow opening the containment purge valves in Modes 1 through 4.

In addition, this amendment request will delete TS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation, and its associated Bases. The revision to TS 3.6.3 described above will maintain the containment purge isolation valves in the sealed closed position in the modes of applicability. Therefore, there is no basis for a TS requirement to test their automatic containment isolation function. A similar change was submitted and approved for Catawba Nuclear Station by Amendment Nos. 196/189 dated March 20, 2002.

A001

The contents of this License Amendment Request (LAR) are as follows:

Attachment 1 provides a marked copy of the affected Technical Specification and Bases showing the proposed changes.

Attachment 2 provides reprinted pages of the affected Technical Specification and Bases with the proposed changes incorporated.

Attachment 3 provides a description of the proposed changes and the technical justification.

Attachment 4, pursuant to 10 CFR 50.92, provides the determination that this LAR contains No Significant Hazards Consideration.

Attachment 5, pursuant to 10 CFR 51.22, provides the basis for the categorical exclusion from performing an Environmental Assessment/Impact Statement.

Implementation of this proposed amendment to the McGuire Technical Specifications will impact the McGuire Updated Final Safety Analysis Report (UFSAR). Section 6.2.4.4, Table 7-20, Table 9-39, Table 9-40, and Section 9.4.5 will be revised in accordance with 10 CFR 50.71(e).

In accordance with Duke administrative procedures and the Quality Assurance Program Topical Report, this LAR has been reviewed and approved by the McGuire Plant Operations Review Committee and the Duke Corporate Nuclear Safety Review Board.

Pursuant to 10 CFR 50.91, a copy of this LAR is being forwarded to the appropriate North Carolina State officials.

Duke is requesting NRC review and approval of this LAR by July 31, 2007. Also, the NRC's standard 30 day implementation grace period will be adequate for this LAR.

Inquiries on this matter should be directed to Lee A. Hentz at 704-875-4187.

Sincerely,

Gary R. Peterson

Attachments

cc: w/attachments

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OATH AND AFFIRMATION

Gary R. Peterson affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

Gary R. Peterson, Site Vice President

Subscribed and sworn to me: July 31, 2006

Date

Notary Public

My commission expires: August 17, 2006

Date

bxc: w/attachments

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McGuire Master File # 1.3.2.9
NSRB Support Staff (EC05N)

ATTACHMENT 1

MARKED PAGES OF AFFECTED TECHNICAL SPECIFICATION

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Not Used

LCO 3.3.6 The Containment Purge and Exhaust Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

NOTE
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more manual or automatic actuation trains inoperable.	A.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.6-1 to determine which SRs apply for each Containment Purge and Exhaust Isolation Function.

	SURVEILLANCE	FREQUENCY
SR 3.3.6.1	Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS
SR 3.3.6.2	Perform MASTER RELAY TEST.	31 days on a STAGGERED TEST BASIS
SR 3.3.6.3	Perform SLAVE RELAY TEST.	92 days
SR 3.3.6.4	----------NOTE---------- Verification of setpoint is not required. --- Perform TADOT.	18 months

Delete entire Page

Table 3.3.6-1 (page 1 of 1)
Containment Purge and Exhaust Isolation Instrumentation

	FUNCTION	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	NOMINAL TRIP SETPOINT
1.	Manual Initiation	2	SR 3.3.6.4	NA
2.	Automatic Actuation Logic and Actuation Relays	2 trains	SR 3.3.6.1 SR 3.3.6.2 SR 3.3.6.3	NA
3.	Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.		

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3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

incore

, upper compartment,

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

1. Penetration flow path(s) except for containment purge supply and/or exhaust isolation valves for the lower compartment and instrument room 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 containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Only applicable to penetration flow paths with two containment isolation valves. ---------- One or more penetration flow paths with one containment isolation valve inoperable except for purge valve or reactor building bypass 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 inside containment with flow through the valve secured. AND	4 hours

(continued)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.3.1	Verify each containment purge valve for the lower compartment and instrument room is sealed closed, except for one purge valve in a penetration flow path while in Condition E of this LCO.	31 days
SR 3.6.3.2	Verify each containment purge and exhaust isolation valve for the upper compartment is closed, except when the valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days Not Used
SR 3.6.3.3	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. ---------- Verify each containment isolation manual valve and blind flange that is located outside containment or annulus and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment or annulus and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of automatic power operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.6	Perform leakage rate testing for containment purge lower and upper compartment and Instrument room valves with resilient seals. incore	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months

(continued)

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Not Used

B 3.3 INSTRUMENTATION

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Not Used

BASES

BACKGROUND

Containment purge and exhaust isolation instrumentation closes the containment isolation valves in the Containment Purge Exhaust System. This action isolates the containment atmosphere from the environment to minimize releases of radioactivity in the event of an accident. The system may be in use during reactor operation and with the reactor shutdown.

Containment purge and exhaust isolation initiates on a automatic safety injection (SI) signal through the Containment Isolation—Phase A Function, or by manual actuation of Phase A Isolation. The Bases for LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," discuss these modes of initiation.

Each of the purge systems has inner and outer containment isolation valves in its supply and exhaust ducts. A safety injection initiates containment purge isolation, which closes both inner and outer containment isolation valves. These systems are described in the Bases for LCO 3.6.3, "Containment Isolation Valves."

APPLICABLE SAFETY ANALYSES

The safety analyses assume that the containment remains intact with penetrations unnecessary for core cooling isolated early in the event, within approximately 60 seconds. The isolation of the purge valves has not been analyzed mechanistically in the dose calculations, although its rapid isolation is assumed. Containment isolation in turn ensures meeting the containment leakage rate assumptions of the safety analyses, and ensures that the calculated accidental offsite radiological doses are below 10 CFR 100 (Ref. 1) limits.

The fuel handling accident is analyzed with the system in operation providing a filtered release well within limits.

The containment purge and exhaust isolation instrumentation satisfies Criterion 3 of 10 CFR 50.36 (Ref. 2).

BASES

LCO

The LCO requirements ensure that the instrumentation necessary to initiate Containment Purge and Exhaust Isolation, listed in Table 3.3.6-1, is OPERABLE.

1. Manual Initiation

The LCO requires two channels OPERABLE. The operator can initiate Containment Purge Isolation at any time by using either of two switches (manual Phase A actuation or manual spray actuation) in the control room. Either switch actuates its associated train. This action will cause actuation of all components in the same manner as any of the automatic actuation signals.

The LCO for Manual Initiation ensures the proper amount of redundancy is maintained in the manual actuation circuitry to ensure the operator has manual initiation capability.

Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.

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2. Automatic Actuation Logic and Actuation Relays

The LCO requires two trains of Automatic Actuation Logic and Actuation Relays OPERABLE to ensure that no single random failure can prevent automatic actuation.

Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b, SI, and ESFAS Function 3.a, Containment Phase A Isolation. The applicable MODES and specified conditions for the containment purge isolation portion of these Functions are different and less restrictive than those for their Phase A isolation and SI roles. If one or more of the SI or Phase A isolation Functions becomes inoperable in such a manner that only the Containment Purge Isolation Function is affected, the Conditions applicable to their SI and Phase A isolation Functions need not be entered. The less restrictive Actions specified for inoperability of the Containment Purge Isolation Functions specify sufficient compensatory measures for this case.

3. Safety Injection

Refer to LCO 3.3.2, Function 1, for all initiating Functions and requirements.

BASES

APPLICABILITY

The Manual Initiation, Automatic Actuation Logic and Actuation Relays, and Safety Injection Functions are required OPERABLE in MODES 1, 2, 3, and 4. Under these conditions, the potential exists for an accident that could release fission product radioactivity into containment. Therefore, the containment purge and exhaust isolation instrumentation must be OPERABLE in these MODES.

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While in MODES 5 and 6 without fuel handling in progress, the containment purge and exhaust isolation instrumentation need not be OPERABLE since the potential for radioactive releases is minimized and operator action is sufficient to ensure post accident offsite doses are maintained within the limits of Reference 1.

During fuel handling operations within containment, the purge system must be exhausting through OPERABLE filters as required by LCO 3.9.4, "Containment Penetrations."

ACTIONS

A Note has been added to the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.6-1. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

A.1

Condition A applies to all Containment Purge and Exhaust Isolation Functions and addresses the train orientation of the Solid State Protection System (SSPS) and the master and slave relays for these Functions.

If a train is inoperable, operation may continue as long as the Required Action for the applicable Conditions of LCO 3.6.3 is met for each valve made inoperable by failure of isolation instrumentation.

BASES

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that Table 3.3.6-1 determines which SRs apply to which Containment Purge and Exhaust Isolation Functions.

SR 3.3.6.1

SR 3.3.6.1 is the performance of an ACTUATION LOGIC TEST. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection function. In addition, the master relay coil is pulse tested for continuity. This verifies that the logic modules are OPERABLE and there is an intact voltage signal path to the master relay coils. This test is performed every 31 days on a STAGGERED TEST BASIS. The Surveillance interval is acceptable based on instrument reliability and industry operating experience.

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SR 3.3.6.2

SR 3.3.6.2 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. This test is performed every 31 days on a STAGGERED TEST BASIS. The Surveillance interval is acceptable based on instrument reliability and industry operating experience.

SR 3.3.6.3

SR 3.3.6.3 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment that may be operated in the design mitigation mode is either allowed to function or is placed in a condition where the relay contact operation can be verified without operation of the equipment. Actuation equipment that may not be operated in the design mitigation mode is prevented from operation by the SLAVE RELAY TEST circuit. For this latter case, contact operation is verified by a continuity check of the circuit containing the slave relay. This test is performed every 92 days. The Frequency is acceptable based on instrument reliability and industry operating experience.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.4

SR 3.3.6.4 is the performance of a TADOT. This test is a check of the Manual Actuation Functions and is performed every 18 months. Each Manual Actuation Function is tested up to, and including, the master relay coils. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.).

The test also includes trip devices that provide actuation signals directly to the SSPS, bypassing the analog process control equipment. The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.

The Frequency is based on the known reliability of the Function and the redundancy available, and has been shown to be acceptable through operating experience.

REFERENCES

1. 10 CFR 100.11.

2. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).

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BACKGROUND (continued)

Containment Purge System

The Containment Purge System operates to supply outside air into the containment for ventilation and cooling or heating and may also be used to reduce the concentration of noble gases within containment prior to and during personnel access.

airborne radioactivity

Insert A

There are five purge air supply line penetrations and four exhaust penetrations in the containment. The supply penetrations include one line through the reactor building wall, two through the containment vessel into upper containment, and two lines through the containment vessel into lower containment. The exhaust penetrations include two lines through the containment vessel out of upper containment, one line through the containment vessel out of lower containment, and one line through the reactor building wall. Two normally closed isolation valves at each containment vessel penetration provide containment isolation.

The upper containment purge portion of the system has the capability to operate when periods of sustained personnel access are required. This is allowed for normal operation (MODES 1-4), provided no more than one pair (one supply and one exhaust flow path) are open at one time. The upper containment supply and exhaust are also operated during refueling operation (MODES 5-6). The exhaust portion helps to reduce the consequences of a fuel handling accident in containment by removing and filtering any airborne radioactive effluents that may result from a fuel handling accident. The lower containment purge is only used during refueling operations because if these lines were used during normal operation, they may not close in the event of a LOCA.

APPLICABLE SAFETY ANALYSES

The containment isolation valve LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during major accidents. As part of the containment boundary, containment isolation valve OPERABILITY supports leak tightness of the containment. Therefore, the safety analyses of any event requiring isolation of containment is applicable to this LCO.

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA) and a rod ejection accident (Ref. 1). In the analyses for each of these accidents, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This

INSERT A

TECH SPEC BASES 3.6.3

BACKGROUND SECTION

This system is used during Mode 5, Mode 6, and No Mode and is not utilized during Modes 1 through 4. The penetration valves are sealed closed in Modes 1 through 4.

APPLICABLE SAFETY ANALYSES (continued)

ensures that potential paths to the environment through containment isolation valves (including containment purge valves) are minimized. The safety analyses assume that the lower compartment and instrument room purge valves are closed at event initiation.

The DBA analysis assumes that, within 76 seconds after the accident, isolation of the containment is complete and leakage terminated except for the design leakage rate, L_a. The containment isolation total response time of 76 seconds includes signal delay, diesel generator startup (for loss of offsite power), and containment isolation valve stroke times.

The single failure criterion required to be imposed in the conduct of plant safety analyses was considered in the original design of the 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.

incore

The lower and instrument room purge valves may be unable to close in the environment following a LOCA. Therefore, each of the lower and incore instrument room purge valves is required to remain sealed closed during MODES 1, 2, 3, and 4. The upper purge valves may be opened for ALARA considerations. In this case, the single failure criterion remains applicable to the containment purge valves due to failure in the control circuit associated with each valve. Again, the purge system valve design precludes a single failure from compromising the containment boundary as long as the system is operated in accordance with the subject LCO.

Replace with Insert B

The containment isolation valves satisfy Criterion 3 of 10 CFR 50.36 (Ref. 2).

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valves' safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

incore

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The lower compartment and instrument room purge valves must be maintained sealed closed. The valves covered by this LCO are listed along with their associated stroke times in the UFSAR (Ref. 3).

) upper compartment,

INSERT B

TECH SPEC BASES 3.6.3

APPLICABLE SAFETY ANALYSIS SECTION

Although the upper containment purge isolation valves are capable of closing under accident conditions, their capability to fully seal without manual assistance has proven to be unreliable. Therefore, these valves are required to be maintained sealed closed during Modes 1, 2, 3, and 4.

BASES

LCO (continued)

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves/devices are those listed in Reference 3.

Purge valves with resilient seals and reactor building bypass valves must meet additional leakage rate requirements. The other containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing.

This LCO provides assurance that the containment isolation valves and purge valves will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment isolation valves are not required to be OPERABLE in MODE 5. The requirements for containment isolation valves during MODE 6 are addressed in LCO 3.9.4, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note allowing penetration flow paths, except for lower containment purge supply and exhaust valves for the lower compartment and instrument room, to be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. For valve controls located in the control room, an operator may monitor containment isolation signal status rather than be stationed at the valve controls. Due to the size of the containment purge line penetration and the fact that those penetrations exhaust directly from the containment atmosphere to the environment, the penetration flow path containing these valves may not be opened under administrative controls. A single purge valve in a penetration flow path may be opened to effect repairs to an inoperable valve, as allowed by SR 3.6.3.1.

ACTIONS (continued)

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

D.1

With the reactor building bypass leakage rate not within limit, the assumptions of the safety analyses are not met. Therefore, the leakage must be restored to within limit within 4 hours. Restoration can be accomplished by isolating the penetration(s) that caused the limit to be exceeded by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. When a penetration is isolated the leakage rate for the isolated penetration is assumed to be the actual pathway leakage through the isolation device. If two isolation devices are used to isolate the penetration, the leakage rate is assumed to be the lesser actual pathway leakage of the two devices. The 4 hour Completion Time is reasonable considering the time required to restore the leakage by isolating the penetration(s) and the relative importance of secondary containment bypass leakage to the overall containment function.

E.1, E.2, and E.3

In the event one or more purge valves for upper and lower containment or instrument room in one or more penetration flow paths are not within the purge valve leakage limits, leakage must be restored to within limits, or the affected penetration flow path must be isolated. The method of isolation must be by 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, closed manual valve, or blind flange. A valve with resilient seals utilized to satisfy Required Action E.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.6. The specified Completion Time is reasonable, considering that one containment purge valve remains closed so that a gross breach of containment does not exist.

In accordance with Required Action E.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is

ACTIONS (continued)

necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown or computer status indication, that those isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the containment purge valve with resilient seal that is isolated in accordance with Required Action E.1, SR 3.6.3.6 must be performed at least once every 92 days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated.

F.1 and F.2

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

Each containment purge valve for the lower compartment and instrument room is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a containment purge valve. Detailed analysis of these valves to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses has not been performed. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A valve that is sealed closed must have motive power to the valve operator removed. This can

SURVEILLANCE REQUIREMENTS (continued)

be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to containment purge valve use during plant operations. In the event purge valve leakage requires entry into Condition E, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs.

SR 3.6.3.2

This SR ensures that the containment purge supply and exhaust isolation valves for the upper compartment are closed as required or, if open, open for an allowable reason. If a valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the valves are open for the reasons stated. The valves may be opened for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.

Not Used

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment or annulus and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown or computer status indication, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The SR specifies that containment isolation valves that are open under administrative controls

SURVEILLANCE REQUIREMENTS (continued)

OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time is specified in the UFSAR and Frequency of this SR are in accordance with the Inservice Testing Program.

SR 3.6.3.6

incore

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B is required to ensure OPERABILITY. The measured leakage rate for containment purge lower compartment and instrument room valves must be $\leq 0.05\ L_a$ when pressurized to P_a. The measured leakage rate for containment purge upper compartment valves must be $\leq 0.01\ L_a$ when pressurized to P_a. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), these valves will not be placed on the maximum extended test interval, but tested on the nominal test interval in accordance with the Containment Leakage Rate Testing Program.

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. The isolation signals involved are Phase A, Phase B, and Safety Injection. This surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass this Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

ATTACHMENT 2

REPRINTED PAGES OF AFFECTED TECHNICAL SPECIFICATION

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LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

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

1. Penetration flow path(s) except for containment purge supply and/or exhaust isolation valves for the lower compartment, upper compartment, and incore instrument room 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 containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Only applicable to penetration flow paths with two containment isolation valves. ---------- One or more penetration flow paths with one containment isolation valve inoperable except for purge valve or reactor building bypass 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 inside containment with flow through the valve secured. AND	4 hours

(continued)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.3.1	Verify each containment purge supply and exhaust valve for the lower compartment, upper compartment, and incore instrument room is sealed closed, except for one purge valve in a penetration flow path while in Condition E of this LCO.	31 days
SR 3.6.3.2	Not Used.	
SR 3.6.3.3	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. --- Verify each containment isolation manual valve and blind flange that is located outside containment or annulus and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment or annulus and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of automatic power operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.6	Perform leakage rate testing for containment purge lower and upper compartment and incore Instrument room valves with resilient seals.	In accordance with the Containment Leakage Rate Testing Program
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(continued)

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B 3.6.3 Containment Isolation Valves

BASES

BACKGROUND

The containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on a containment isolation signal. These isolation devices are either passive or active (automatic). Manual valves, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, 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 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 analyses. One of these barriers may be a closed system. These barriers (typically containment isolation valves) make up the Containment Isolation System.

Automatic isolation signals are produced during accident conditions. Containment Phase "A" isolation occurs upon receipt of a safety injection signal. The Phase "A" isolation signal isolates nonessential process lines in order to minimize leakage of fission product radioactivity. Containment Phase "B" isolation occurs upon receipt of a containment pressure High-High signal and isolates the remaining process lines, except systems required for accident mitigation. In addition to the Phase "A" isolation signal, the purge and exhaust valves receive an isolation signal on a containment high radiation condition. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated from the environment in the event of a release of fission product radioactivity to the containment atmosphere as a result of a Design Basis Accident (DBA).

The OPERABILITY requirements for containment isolation valves help ensure that containment is isolated within the time limits assumed in the safety analyses. Therefore, the OPERABILITY requirements provide assurance that the containment function assumed in the safety analyses will be maintained.

BACKGROUND (continued)

Containment Purge System

The Containment Purge System operates to supply outside air into the containment for ventilation and cooling or heating and may also be used to reduce the concentration of airborne radioactivity within containment prior to and during personnel access. This system is used during Mode 5, Mode 6, and No Mode and is not utilized during Modes 1 through 4. The penetration valves are sealed closed in Modes 1 through 4.

There are five purge air supply line penetrations and four exhaust penetrations in the containment. The supply penetrations include one line through the reactor building wall, two through the containment vessel into upper containment, and two lines through the containment vessel into lower containment. The exhaust penetrations include two lines through the containment vessel out of upper containment, one line through the containment vessel out of lower containment, and one line through the reactor building wall. Two normally closed isolation valves at each containment vessel penetration provide containment isolation.

The exhaust portion helps to reduce the consequences of a fuel handling accident in containment by removing and filtering any airborne radioactive effluents that may result from a fuel handling accident.

APPLICABLE SAFETY ANALYSES

The containment isolation valve LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during major accidents. As part of the containment boundary, containment isolation valve OPERABILITY supports leak tightness of the containment. Therefore, the safety analyses of any event requiring isolation of containment is applicable to this LCO.

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA) and a rod ejection accident (Ref. 1). In the analyses for each of these accidents, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This

BASES

APPLICABLE SAFETY ANALYSES (continued)

ensures that potential paths to the environment through containment isolation valves (including containment purge valves) are minimized. The safety analyses assume that the lower compartment and instrument room purge valves are closed at event initiation.

The DBA analysis assumes that, within 76 seconds after the accident, isolation of the containment is complete and leakage terminated except for the design leakage rate, L_a. The containment isolation total response time of 76 seconds includes signal delay, diesel generator startup (for loss of offsite power), and containment isolation valve stroke times.

The single failure criterion required to be imposed in the conduct of plant safety analyses was considered in the original design of the 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.

The lower and incore instrument room purge valves may be unable to close in the environment following a LOCA. Therefore, each of the lower and incore instrument room purge valves is required to remain sealed closed during MODES 1, 2, 3, and 4. Although the upper containment purge isolation valves are capable of closing under accident conditions, their capability to fully seal without manual assistance has proven to be unreliable. Therefore, these valves are required to be maintained sealed closed during Modes 1, 2, 3, and 4.

The containment isolation valves satisfy Criterion 3 of 10 CFR 50.36 (Ref. 2).

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valves' safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The lower compartment, upper compartment, and incore instrument room purge valves must be maintained sealed closed. The valves covered by this LCO are listed along with their associated stroke times in the UFSAR (Ref. 3).

BASES

LCO (continued)

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves/devices are those listed in Reference 3.

Purge valves with resilient seals and reactor building bypass valves must meet additional leakage rate requirements. The other containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing.

This LCO provides assurance that the containment isolation valves and purge valves will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment isolation valves are not required to be OPERABLE in MODE 5. The requirements for containment isolation valves during MODE 6 are addressed in LCO 3.9.4, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note allowing penetration flow paths, except for containment purge supply and exhaust valves for the lower compartment, upper compartment, and incore instrument room, to be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. For valve controls located in the control room, an operator may monitor containment isolation signal status rather than be stationed at the valve controls. Due to the size of the containment purge line penetration and the fact that those penetrations exhaust directly from the containment atmosphere to the environment, the penetration flow path containing these valves may not be opened under administrative controls. A single purge valve in a penetration flow path may be opened to effect repairs to an inoperable valve, as allowed by SR 3.6.3.1.

ACTIONS (continued)

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each penetration flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable containment isolation valve. Complying with the Required Actions may allow for continued operation, and subsequent inoperable containment isolation valves are governed by subsequent Condition entry and application of associated Required Actions.

The ACTIONS are further modified by a third Note, which ensures appropriate remedial actions are taken, if necessary, if the affected systems are rendered inoperable by an inoperable containment isolation valve.

In the event the containment isolation valve leakage results in exceeding the overall containment leakage rate, Note 4 directs entry into the applicable Conditions and Required Actions of LCO 3.6.1.

A.1 and A.2

In the event one containment isolation valve in one or more penetration flow paths is inoperable except for purge valve or reactor building bypass leakage not within limit, the affected penetration flow path must be isolated. 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 containment isolation valve, a closed manual valve, a blind flange, and a check valve inside containment with flow through the valve secured. For a penetration flow path isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within 4 hours. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4.

For affected penetration flow paths that cannot be restored to OPERABLE status within the 4 hour Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event

ACTIONS (continued)

occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification, through a system walkdown or computer status indication, that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Condition A has been modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition C provides the appropriate actions.

Required Action A.2 is modified by a Note that applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these devices once they have been verified to be in the proper position, is small.

B.1

With two containment isolation valves in one or more penetration flow paths inoperable, except for the purge valve or reactor building bypass leakage not within limit, the affected penetration flow path must be isolated within 1 hour. 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. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1. In the event the affected penetration is isolated in accordance with Required Action B.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action A.2, which remains in effect. This periodic verification is necessary to assure leak

ACTIONS (continued)

tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative control and the probability of their misalignment is low.

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two containment isolation valves. Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path.

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve flow path must be restored to OPERABLE status or the affected penetration flow path must be isolated. 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. A check valve may not be used to isolate the affected penetration flow path. Required Action C.1 must be completed within the 72 hour Completion Time. The specified time period is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of maintaining containment integrity during MODES 1, 2, 3, and 4. In the event the affected penetration flow path is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low.

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. The closed system must meet the requirements of Reference 5. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system.

ACTIONS (continued)

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

D.1

With the reactor building bypass leakage rate not within limit, the assumptions of the safety analyses are not met. Therefore, the leakage must be restored to within limit within 4 hours. Restoration can be accomplished by isolating the penetration(s) that caused the limit to be exceeded by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. When a penetration is isolated the leakage rate for the isolated penetration is assumed to be the actual pathway leakage through the isolation device. If two isolation devices are used to isolate the penetration, the leakage rate is assumed to be the lesser actual pathway leakage of the two devices. The 4 hour Completion Time is reasonable considering the time required to restore the leakage by isolating the penetration(s) and the relative importance of secondary containment bypass leakage to the overall containment function.

E.1, E.2, and E.3

In the event one or more purge valves for upper and lower containment or incore instrument room in one or more penetration flow paths are not within the purge valve leakage limits, leakage must be restored to within limits, or the affected penetration flow path must be isolated. The method of isolation must be by 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, closed manual valve, or blind flange. A valve with resilient seals utilized to satisfy Required Action E.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.6. The specified Completion Time is reasonable, considering that one containment purge valve remains closed so that a gross breach of containment does not exist.

In accordance with Required Action E.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is

ACTIONS (continued)

necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown or computer status indication, that those isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the containment purge valve with resilient seal that is isolated in accordance with Required Action E.1, SR 3.6.3.6 must be performed at least once every 92 days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated.

F.1 and F.2

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

Each containment purge supply and exhaust valve for the lower compartment, upper compartment, and incore instrument room is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a containment purge valve. These valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A valve that is sealed closed must have motive power to the valve operator removed. This can

SURVEILLANCE REQUIREMENTS (continued)

be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 4), related to containment purge valve use during plant operations. In the event purge valve leakage requires entry into Condition E, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs.

SR 3.6.3.2

Not Used

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment or annulus and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown or computer status indication, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The SR specifies that containment isolation valves that are open under administrative controls

SURVEILLANCE REQUIREMENTS (continued)

are not required to meet the SR during the time the valves are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be the correct position upon locking, sealing, or securing.

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3 and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

SR 3.6.3.4

This SR requires verification that each containment isolation manual valve and blind flange located inside containment or annulus and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time they are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be the correct position upon locking, sealing, or securing.

This Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4, for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate

SURVEILLANCE REQUIREMENTS (continued)

OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time is specified in the UFSAR and Frequency of this SR are in accordance with the Inservice Testing Program.

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B is required to ensure OPERABILITY. The measured leakage rate for containment purge lower compartment and incore instrument room valves must be $\leq 0.05\ L_a$ when pressurized to P_a. The measured leakage rate for containment purge upper compartment valves must be $\leq 0.01\ L_a$ when pressurized to P_a. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), these valves will not be placed on the maximum extended test interval, but tested on the nominal test interval in accordance with the Containment Leakage Rate Testing Program.

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. The isolation signals involved are Phase A, Phase B, and Safety Injection. This surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass this Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.8

This SR ensures that the combined leakage rate of all reactor building bypass leakage paths is less than or equal to the specified leakage rate. This provides assurance that the assumptions in the safety analysis are met. The Frequency is required by the Containment Leakage Rate Testing Program. This SR simply imposes additional acceptance criteria.

Bypass leakage is considered part of L_a.

REFERENCES

1. UFSAR, Section 15.
2. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
3. UFSAR, Section 6.2.
4. Generic Issue B-24.
5. UFSAR, Section 6.2.4.2

ATTACHMENT 3

DESCRIPTION OF PROPOSED CHANGES AND TECHNICAL JUSTIFICATION

SUMMARY OF CHANGE

This amendment request will revise TS 3.6.3, Containment Isolation Valves, and its associated Bases, by removing the allowance to open the upper containment purge isolation valves in the applicable modes consistent with the lower containment purge isolation valves. These valves have a history of not fully seating closed after cycling without manual assistance. Maintaining the upper containment purge isolation valves in the closed position is currently administratively controlled at McGuire in Modes 1 through 4 and assures seating characteristics are not disturbed. Since there are no plans to upgrade these valves by modification, it is proposed to revise TS 3.6.3 and its bases accordingly. Catawba Nuclear Station TS 3.6.3 also does not allow opening the containment purge valves in Modes 1 through 4.

In addition, this amendment request will delete TS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation, and its associated Bases. This specification requires the performance of surveillance testing to demonstrate the containment purge valves will close in Modes 1 through 4 in response to containment isolation signals. The revision to TS 3.6.3 described above will maintain the containment purge valves in the sealed closed position in the modes of applicability. Therefore, there is no basis for a TS requirement to test their automatic containment isolation function. A similar change for TS 3.3.6 was submitted and approved for Catawba Nuclear Station by Amendment Nos. 196/189 dated March 20, 2002.

DESCRIPTION OF PROPOSED CHANGES

TS 3.6.3, CONTAINMENT ISOLATION VALVES

1) Note 1 under ACTIONS will be revised by adding "upper compartment" as an additional penetration restriction.

2) Surveillance Requirement (SR) 3.6.3.1 will be revised to include the upper compartment supply and exhaust purge valves from SR 3.6.3.2. The Surveillance Requirements for the upper and lower purge valves will be identical after this change.

3) SR 3.6.3.2 will be deleted since this SR for the upper compartment purge valves will become identical to SR 3.6.3.1.

4) Replace "instrument room" with "incore instrument room" in ACTIONS, SR 3.6.3.1, and SR 3.6.3.6 to be consistent with the UFSAR and Design Basis Documents.

TS BASES 3.6.3, CONTAINMENT ISOLATION VALVES

1) Add a sentence to the Background section stating that the Containment Purge System is only used during Mode 5, Mode 6, and No Mode. Replace "noble gases" with "airborne radioactivity" since it's a more complete term.

2) Delete sentences from the Background section that state the upper containment purge can operate in Modes 1-4 with no more than one pair of valves open. Delete sentence stating that the lower compartment purge valves are only used during refueling operations.

3) In the Applicable Safety Analysis section, delete the sentences that state the upper purge valves may be opened for ALARA considerations. Add sentences stating that the upper purge valves may not fully seal without manual assistance and are therefore maintained sealed closed in Modes 1-4.

4) In the LCO section, add "upper compartment" to sentence that states the purges valves must be maintained sealed closed.

5) In the Actions section, add "upper compartment" to sentence that excludes the purge valves from being intermittently un-isolated under administrative controls.

6) Revise the Bases for SR 3.6.3.1 to include the upper compartment supply and exhaust purge valves from the Bases for SR 3.6.3.2. The Surveillance Requirements for the upper and lower purge valves will be identical after this change. Delete the sentence regarding the purge valves inability to close in time during a LOCA since it is not the primary reason for maintaining the purge valves closed in Modes 1 through 4.

7) The Bases for SR 3.6.3.2 will be deleted since the requirements will become identical to the Bases for SR 3.6.3.1.

8) Replace "instrument room" with "incore instrument room" in the Bases to be consistent with the UFSAR and Design Basis Documents.

TS AND BASES 3.3.6, CONTAINMENT PURGE AND EXHAUST ISOLATION INSTRUMENTATION

1) This TS and Bases will be deleted. The TS and Bases Table of Contents will be revised accordingly.

TECHNICAL JUSTIFICATION

The Containment Purge System operates to supply outside air into containment for ventilation and cooling or heating and may also be used to reduce the concentration of airborne radioactivity within containment. There are five purge air supply and four purge air exhaust penetrations through containment. Two normally closed isolation valves at each penetration provide containment isolation.

The containment purge isolation valves at McGuire were determined to be unreliable with regard to maintaining leak tightness after cycling several years ago. Because of this, a license amendment request was submitted and approved exempting these valves from quarterly testing contingent upon administratively maintaining these valves closed. Leak rate testing per SR 3.6.3.6 is performed near the end of each refueling outage when the valves are sealed closed. Maintaining the containment purge isolation valves in the sealed closed position is currently administratively controlled in Modes 1 through 4 and assures seating characteristics are not disturbed. There are no plans to upgrade these valves by modification. As a result, there is no reason to maintain the allowance for opening one pair of upper containment purge isolation valves in Modes 1 through 4 as allowed by TS 3.6.3. This is considered to be a conservative Technical Specification change. Catawba also treats their containment purge isolation valves in the same manner and has removed the allowance for opening from their TS 3.6.3.

Since these power operated containment isolation valves are sealed closed, they are no longer considered to be automatic isolation valves as defined in ANSI N271-1976, "Containment Isolation Provisions for Fluid Systems." This ANSI standard was endorsed by Regulatory Guide 1.141 of same title.

TECHNICAL JUSTIFICATION (continued)

The McGuire safety analysis assumes that the containment purge isolation valves are closed at the initiation of an accident to minimize releases of radioactivity. To assure this, these valves receive an automatic safety injection (SI) signal through the containment isolation Phase A function which would close the purge valves if containment purging was in progress in Modes 1 through 4. The isolation instrumentation that performs this function is governed by TS 3.3.6 and satisfies Criterion 3 of 10 CFR 50.36.

The re-classification of all the Purge System containment isolation valves from automatic to sealed closed maintains the valves in their design basis position prior to initiation of any design basis accident. The provision to allow purging containment in Modes 1 through 4 will no longer be allowed. The purge valves are leak rate tested once they are placed in the sealed closed position then verified sealed closed every 31 days. Therefore, Criterion 3 of 10 CFR 50.36 no longer applies to the Containment Purge System Isolation Instrumentation System.

In conclusion, the LCO and Surveillance Requirements of TS 3.3.6, which tests the containment isolation instrumentation automatic actuation logic and relays, is no longer required so TS 3.3.6 may be deleted. Catawba has also used this justification to delete this system from their TS 3.3.6 (see Catawba Amendment Nos. 196/189 dated March 20, 2002).

ATTACHMENT 4

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

As required by 10 CFR 50.91(a)(1), this analysis is provided to demonstrate this Duke Energy License Amendment Request (LAR) does not involve a significant hazards consideration.

This LAR will revise Technical Specification (TS) 3.6.3, Containment Isolation Valves, by removing the allowance to open the upper containment purge isolation valves in the applicable modes consistent with the lower containment purge isolation valves. Maintaining the upper containment purge isolation valves in the closed position is currently administratively controlled in Modes 1 through 4 at McGuire Nuclear Station. These valves have a history of not fully seating closed after cycling without manual assistance. Since there are no plans to upgrade these valves by modification, it is proposed to revise TS 3.6.3 and its bases accordingly. Catawba Nuclear Station TS 3.6.3 also does not allow opening the containment purge valves in Modes 1 through 4.

In addition, this LAR will delete TS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation. The revision to TS 3.6.3 described above will maintain the containment purge isolation valves in the sealed closed position in the modes of applicability. Therefore, there is no basis for a TS requirement to test their automatic containment isolation function. A similar change was submitted and approved for Catawba Nuclear Station by Amendment Nos. 196/189 dated March 20, 2002.

Conformance of this LAR to the standards for a determination of no significant hazards, as defined in 10 CFR 50.92, is shown in the following:

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

No. The Containment Purge System is not capable of initiating any accident by itself so there will be no increase in the probability of an accident. Since these containment isolation valves will be maintained in the sealed closed position, there can be no increase in the consequences of an accident. The design and operation of the Containment Purge System is not being modified by this LAR. Therefore, approval and implementation of this LAR will have no effect on accident probabilities or consequences.

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION
(continued)

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

No. This LAR does not involve any physical changes to the Containment Purge System so no new or different accident causal mechanisms will be generated. Also, no changes are being made to the way in which the Containment Purge System is operated. Some surveillance tests will no longer be performed but these tests are no longer necessary since the affected components remain in their safe, design basis position. Consequently, plant accident analyses will not be affected by this LAR.

3. Does this LAR involve a significant reduction in a margin of safety ?

No. Margin of safety is related to the confidence in the ability of the fission product barriers to perform their design functions during and following accident conditions. These barriers include the fuel cladding, the reactor coolant system, and the containment system. The performance of these barriers will not be affected by the proposed changes. The containment isolation valves in the Containment Purge System will continue to perform their design basis function after this LAR is implemented.

CONCLUSION

Based on the preceding discussion, it can be concluded that this LAR does not involve a significant hazards consideration as defined in 10 CFR 50.92.

ATTACHMENT 5

ENVIROMENTAL ASSESSMENT / IMPACT STATEMENT

This License Amendment Request (LAR) has been reviewed against the criteria of 10 CFR 51.22 for environmental considerations. This LAR does not involve a significant hazards consideration, increase the types and amounts of effluents that may be released offsite, or result in the increase of individual or cumulative occupational radiation exposures. Therefore, this LAR to the McGuire Technical Specifications meets the criteria provided by 10 CFR 51.22(c)(9) for categorical exclusion from the requirement for an Environmental Impact Statement.