Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385

Dominion

AUG 1 4 2002

Docket No. 50-423
B18663

RE: 10 CFR 50.90

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

Millstone Nuclear Power Station, Unit No. 3
License Basis Document Change Request 3-6-02
Containment Isolation Valves

Introduction

Pursuant to 10 CFR 50.90, Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to amend Operating License NPF-49 by incorporating the attached proposed changes into the Technical Specifications of Millstone Unit No. 3. DNC is proposing to change Technical Specifications 1.7, "Definitions - Containment Integrity," 3.6.1.1, "Primary Containment - Containment Integrity," and 3.6.3, "Containment Isolation Valves." The Bases for these Technical Specifications will also be revised to address the proposed changes.

The proposed changes will be consistent with Generic Letter 91-08 guidance and will remove ambiguity and improve usability of the Technical Specifications through revision to notations, relocation of a list of administratively controlled containment isolation valves (CIVs) to the Bases, and revision to text of action and surveillance requirements associated with the affected sections related to containment integrity and CIVs. An increase in allowed outage time (AOT) to 72 hours for CIVs in closed systems is also proposed to be consistent with AOT of other Millstone Unit No. 3 Technical Specifications for loss of one train of redundancy and to incorporate approval of Technical Specifications Task Force Traveler, TSTF-30.[1] Operability requirements for containment integrity and CIVs will remain the same.

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[1] Technical Specification Task Force (TSTF) -30, Revision 3, "Extend the Completion Time for inoperable isolation valve to a closed system to 72 hours;" Approved January 11, 1999.

Attachment 1 provides a discussion of the proposed changes and the Safety Summary. Attachment 2 provides the Significant Hazards Consideration. Attachment 3 provides the marked-up version of the appropriate pages of the current Technical Specifications. Attachment 4 provides the retyped pages of the Technical Specifications.

Environmental Considerations

DNC has evaluated the proposed changes against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.22. DNC has determined that the proposed changes meet the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92(b). This determination is based on the fact that the changes are being proposed as an amendment to a license issued pursuant to 10 CFR 50 that changes a requirement with respect to use of a facility component located within the restricted area, as defined by 10 CFR 20, or that changes an inspection or a surveillance requirement, and that the amendment request meets the following specific criteria.

(i) The proposed changes involve no Significant Hazards Consideration.

As demonstrated in Attachment 2, the proposed changes do not involve a Significant Hazards Consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released off site.

The proposed changes will remove ambiguity and improve usability of the Technical Specifications through revision to notations, relocation of a list of administratively controlled CIVs in to the Bases, and revision of action requirements associated with the affected sections related to CIVs. Operability requirements for containment integrity and CIVs remain the same. The proposed changes are consistent with the design basis of the plant and the associated design basis accident analyses. The proposed changes will not result in an increase in power level, will not increase the production of radioactive waste and by-products, and will not alter the flowpath or method of disposal of radioactive waste or by-products. Therefore, the proposed changes will not increase the type and amounts of effluents that may be released off site.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes will remove ambiguity and improve usability of the Technical Specifications through revision to notations, relocation of a list of administratively controlled CIVs in to the Bases, and revision of action requirements associated with the affected sections related to containment integrity and CIVs. Operability requirements for containment integrity and CIVs remain the same. The proposed changes will not result in changes in the configuration of the facility. There will be no change in the level of controls or methodology used for processing radioactive effluents or the handling of solid radioactive waste. There will be no change to the normal radiation levels within the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from the proposed changes.

Conclusions

The proposed changes have been evaluated and we have concluded the proposed changes are safe. The proposed changes do not involve an adverse impact on public health and safety (see the Safety Summary provided in Attachment 1) and do not involve a Significant Hazards Consideration pursuant to the provisions of 10 CFR 50.92 (see the Significant Hazards Consideration provided in Attachment 2).

Site Operations Review Committee and Nuclear Safety Assessment Board

The Site Operations Review Committee and Nuclear Safety Assessment Board have reviewed and concurred with the determinations.

Schedule

We request issuance of this amendment for Millstone Unit No. 3 by August 15, 2003, with the amendment to be implemented within 90 days of issuance.

State Notification

In accordance with 10 CFR 50.91(b), a copy of this License Amendment Request is being provided to the State of Connecticut.

There are no regulatory commitments contained within this letter.

If you should have any questions on the above, please contact Mr. Ravi Joshi at (860) 440-2080.

Very truly yours,

DOMINION NUCLEAR CONNECTICUT, INC.

J. Alan Price
Site Vice President - Millstone

Sworn to and subscribed before me

this 14 day of August, 2002

Notary Public

WM. E. BROWN
NOTARY PUBLIC
MY COMMISSION EXPIRES MAR. 31, 2006

My Commission expires

Attachments (4)

cc: H. J. Miller, Region I Administrator
V. Nerses, NRC Senior Project Manager, Millstone Unit No. 3
NRC Senior Resident Inspector, Millstone Unit No. 3

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
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Docket No. 50-423
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Attachment 1

Millstone Nuclear Power Station, Unit No. 3

License Basis Document Change Request 3-6-02
Containment Isolation Valves
Discussion of Proposed Changes and Safety Summary

License Basis Document Change Request 3-6-02
Containment Isolation Valves
Discussion of Proposed Changes and Safety Summary

Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to amend Operating License NPF-49 by incorporating the attached proposed changes into the Technical Specifications of Millstone Unit No. 3. DNC is proposing to change Technical Specifications 1.7, "Definitions - Containment Integrity," 3.6.1.1, "Primary Containment - Containment Integrity," and 3.6.3, "Containment Isolation Valves." The associated Bases for these Technical Specifications will be modified to address the proposed changes.

The proposed changes will be consistent with Generic Letter 91-08 guidance and will remove ambiguity and improve usability of the Technical Specifications through revision to notations, relocation of a list of administratively controlled containment isolation valves (CIVs) to the Bases, and revision to text of action and surveillance requirements associated with the affected sections related to containment integrity and CIVs. An increase in allowed outage time (AOT) to 72 hours for CIVs in closed systems is also proposed to be consistent with AOT of other Millstone Unit No. 3 Technical Specifications for loss of one train of redundancy and to incorporate approval of Technical Specifications Task Force Traveler, TSTF-30.[1] Operability requirements for containment integrity and CIVs will remain the same.

Technical Specification Changes

Each proposed Technical Specification change, identified by specification, will be discussed.

1. Technical Specifications 1.7, "Definitions - Containment Integrity," (page 1-2):

   An " * " will be added to the definition of containment integrity and an associated footnote will be added to the bottom of the affected page. The footnote will explain how the requirement for an operable containment automatic isolation valve system is satisfied in MODE 4.

   This change is clarification that is needed because the automatic containment isolation signals generated by low pressurizer pressure and high containment pressure are not required to be operable when the plant is in MODE 4, (reference Technical Specifications Table 3.3-3, Functional Unit, items 1.c and 1.d). Also, the low pressurizer pressure signal is blocked during the plant cool down. This is acceptable because in MODE 4 automatic actuation of Engineered Safety Features Actuation System (ESFAS) functions is not required since adequate time is available for plant operators to evaluate plant conditions and respond by manually operating the ESF equipment. Because of the large number of valves actuated by a containment isolation actuation signal (CIAS), actuation is simplified by the use of the

[1] Technical Specification Task Force (TSTF) -30, Revision 3, "Extend the Completion Time for inoperable isolation valve to a closed system to 72 hours;" Approved January 11, 1999.

manual pushbuttons. Since the manual CIAS pushbuttons are required to be operable in MODE 4, credit can be taken for remote manual operation to close the CIVs.

2. Technical Specifications 1.7, "Definitions -Containment Integrity," (page 1-2):

   Item a.1 of this definition, describing when CONTAINMENT INTEGRITY shall exist, will have both the reference to operator action and the reference to Specification 4.6.1.1.a for administrative control deleted.

   This change is clarifying, and administrative, with no reduction in requirements. Reference to administrative controls will be more clearly established in Specification 3.6.3, and with the following change to item a.2 of this definition below.

3. Technical Specifications 1.7, "Definitions - Containment Integrity," (page 1-2):

   Additional text will be added to item a.2 of this definition to take exception for valves that are opened under administrative control.

   This change is clarifying, and administrative, with no reduction in requirements. Containment integrity is also achieved through appropriate administrative controls. This change is consistent with the considerations included in Generic Letter 91-08, "Removal of Component Lists from Technical Specifications."

4. Technical Specifications 3.6.1.1, "Primary Containment - Containment Integrity," Surveillance Requirement 4.6.1.1, (page 3/4 6-1):

   The Surveillance Requirement 4.6.1.1a for demonstration of primary containment integrity will have the text associated with operator action deleted, and text added to make specific reference to administrative controls permitted by Technical Specifications 3.6.3.

   Reference to administrative controls is more clearly established in Technical Specifications 3.6.3. This change is clarifying, and administrative, with no reduction in requirements.

5. Technical Specifications 3.6.1.1, "Primary Containment - Containment Integrity," Surveillance Requirement 4.6.1.1, (page 3/4 6-1):

   The existing footnote " ** " in Surveillance Requirement 4.6.1.1.a that is a list of valves opened on an intermittent basis under administrative control is replaced with a footnote "(2)" to describe that in MODE 4 the requirement for an operable containment isolation valve system is satisfied by use of the containment isolation actuation pushbuttons. The content of the original footnote will be relocated to the Bases section for Technical Specifications 3.6.3, "Containment Isolation Valves." Footnote identifiers will use numbers in place of symbols for clarity.

This change will be made because reference to these administrative controls is more appropriately established in Technical Specifications 3.6.3 by a note that will state "Containment isolation valves may be opened on an intermittent basis under administrative control." This is consistent with GL 91-08 guidance. It is clarification and not a reduction in requirements.

6. Technical Specifications 3.6.1.1, "Primary Containment - Containment Integrity," Surveillance Requirement 4.6.1.1, (page 3/4 6-1):

   In Surveillance Requirement 4.6.1.1.a, the footnote " (3) " will be added to state isolation devices in high radiation areas may be verified 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. This requirement provides a practical means to perform this verification in high radiation areas and is also consistent with standard Westinghouse Technical Specifications, NUREG-1431.

7. Technical Specifications 3.6.3, "Containment Isolation Valves," (page 3/4 6-15):

   For Technical Specifications 3.6.3, the new footnote " (2) " will be added to the term OPERABLE to state that containment isolation valves may be opened on an intermittent basis under administrative controls.

   This is consistent with considerations in Generic Letter 91-08 that were applicable to the removal of the component listing of CIVs from the Technical Specifications. This change is also clarifying and not a reduction in requirements. This change will not create new or different administrative controls for containment isolation valves.

8. Technical Specifications 3.6.3, "Containment Isolation Valves," (page 3/4 6-15):

   For Technical Specifications 3.6.3, the following text will be deleted; "with isolation times less than or equal to the required isolation times." The revised text of this Limiting Condition for Operation will state simply that the CIVs shall be OPERABLE.

   This is consistent with considerations in Generic Letter 91-08 that were applicable to the removal of the component listing of CIVs from the Technical Specifications. The Technical Specification requirements apply to all valves that have been defined as CIVs in the plant licensing basis. In this change, there is no reduction in requirements for verification of OPERABILITY of CIVs. Therefore, this is clarifying and not a reduction in requirements.

9. Technical Specifications 3.6.3, "Containment Isolation Valves," (page 3/4 6-15):

   The action text will be deleted in Technical Specifications 3.6.3 that states; "maintain at least one isolation valve OPERABLE in each affected penetration that is open and:". The word "either" is inserted in place of the deleted action text. The revised text of the action statement becomes; "With one or more of the isolation valve(s) inoperable, either".

   This change is clarification, as the deleted text to maintain at least one isolation valve OPERABLE would not be applicable to affected penetrations with only one CIV and a closed system, or applications that conform to 10 CFR 50, Appendix A, General Design Criterion 57 for closed system isolation valves. There is no reduction in requirements.

10. Technical Specifications 3.6.3, "Containment Isolation Valves," (page 3/4 6-15):

    An ACTION item in TS 3.6.3 will be added to state in item d. the following; "Isolate the affected penetration with only one containment isolation valve and a closed system within 72 hours by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange; or"

    This change will add a separate AOT to incorporate the changes included in Technical Specification Task Force Traveler TSTF-30, which allows an AOT of 72 hours for those penetrations with a single CIV and a closed system. Consistent with required action in the TSTF-30, the verification of the affected penetration flow path that is isolated would be required at least once per 31 days in Surveillance Requirement 4.6.1.1, item a. The 72 hours is considered appropriate given that certain valves may be located inside containment, the reliability of the closed system, and that 72 hours is typically provided for losing one train of redundancy throughout the Millstone Unit No. 3 Technical Specifications (e.g., AOT for restoration of one Emergency Diesel Generator is 72 hours).

11. Technical Specifications 3.6.3, "Containment Isolation Valves," (page 3/4 6-15):

    Various editorial changes are being made to the ACTION statement text. ACTION items a. through d. will be changed to items a. through e. to accommodate the separate allowed outage time related to isolation valves in closed systems. Footnote identifiers use numbers in place of symbols for clarity. Other changes to the text are made to clarify each item's text.

    These changes will be editorial and are not a reduction in requirements.

Technical Specifications Bases:

Bases for Technical Specifications 3.6.1.1, "Containment Integrity," will be revised to relocate a list of valves opened on an intermittent basis under administrative controls to Technical Specifications 3.6.3, "Containment Isolation Valves," with a discussion of the applicable requirements or guidance for administrative controls.

Safety Summary

The proposed changes to Millstone Unit No. 3 Technical Specifications 1.7, 3.6.1.1 and 3.6.3 do not pose a condition adverse to safety and do not create any adverse safety consequences. The rationale for this conclusion is provided in the balance of this safety summary.

The proposed changes, with exception of an added allowed outage time in Technical Specifications 3.6.3, are essentially clarifications to remove ambiguity and do not create a reduction of requirements or alteration in operations. Changes proposed to Technical Specifications 1.7 expand on the definition of containment integrity with respect to the operability of an automatic CIV system, and use of the containment isolation pushbuttons. Similarly, changes proposed in Technical Specifications 3.6.1 and 3.6.3 improve clarity and are consistent with considerations in GL 91-08 that became applicable under previous removal of a component listing of CIVs from the Technical Specifications. The proposed changes also consolidate the reference to administrative controls of CIVs in to Technical Specifications 3.6.3 and its Bases. The proposal will not alter plant operations because no changes are made to CIVs administratively controlled, or to the administrative control requirements or guidance. Any future changes to valves which may be opened under administrative control continue to require an evaluation against the 10 CFR 50.59 process as part of any Bases change.

The proposed change to Technical Specifications 3.6.3 to add a separate AOT to isolate the affected penetration with only one CIV and a closed system within 72 hours incorporates changes in TSTF-30. This change is consistent with the required actions in the previously approved TSTF-30. General Design Criteria (GDC) 57 allows the use of a closed system in combination with a CIV to provide two containment barriers against the release of radioactive material following an accident. A closed system meets the requirements of the Standard Review Plan 6.2.4, is subjected to a Type A containment leakage test, is missile protected, and seismic category 1 piping. A closed system also typically has flow through it during normal operation such that any loss of integrity could be continually observed through leakage detection within containment and by system walkdowns for closed systems outside containment. As such, the use of a closed system is no different from isolating a failed CIV by use of a single valve. The verification of the affected penetration flow path that is isolated would be required at least once per 31 days in Surveillance Requirement 4.6.1.1, item a. The 72 hours is considered appropriate given that certain valves may be located inside containment, the reliability of the closed system, and that 72 hours is typically provided for loosing one train of redundancy throughout the Millstone Unit No. 3 Technical Specifications (e.g., AOT for restoration of one Emergency Diesel Generator is 72 hours).

The proposal does not alter or affect the design, operation, maintenance, or surveillance associated with Millstone Unit No. 3 structures, systems, and components in a detrimental manner during normal or accident operations. Although allowed outage time is to be extended to 72 hours for applications that conform to the 10 CFR 50, Appendix A, GDC 57 closed system isolation valves, operability requirements for containment integrity and CIVs remain the same. This proposal is considered safe because it will not result in a decrease to available safety margins, operation outside of design basis parameters, or adverse impact to the consequences of an accident. This proposal does not cause an increase in risk to the public health or safety. It does not increase probabilities of event occurrence and can not introduce any new accidents or equipment malfunctions.

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Attachment 2

Millstone Nuclear Power Station, Unit No. 3

License Basis Document Change Request 3-6-02
Containment Isolation Valves
Significant Hazards Consideration

License Basis Document Change Request 3-6-02
Containment Isolation Valves
Significant Hazards Consideration

Description of License Amendment Request

Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to revise the Millstone Unit No. 3 Technical Specifications as described in this License Amendment Request. The proposed changes will be consistent with Generic Letter 91-08 guidance and will remove ambiguity and improve usability of the Technical Specifications through revision to notations, relocation of a list of administratively controlled containment isolation valves (CIVs) to the Bases, and revision to text of action and surveillance requirements associated with the affected sections related to containment integrity and CIVs. An increase in allowed outage time (AOT) to 72 hours for CIVs in closed systems is also proposed to be consistent with AOT of other Millstone Unit No. 3 Technical Specifications for loss of one train of redundancy and to incorporate approval of Technical Specifications Task Force Traveler, TSTF-30. Operability requirements for containment integrity and CIVs will remain the same. Refer to Attachment 1 of this submittal for a detailed discussion of the proposed changes.

Significant Hazards Consideration

In accordance with 10 CFR 50.92, DNC has reviewed the proposed changes and has concluded that they do not involve a significant hazards consideration (SHC). The basis for this conclusion is that the three criteria of 10 CFR 50.92(c) are not compromised. The proposed changes do not involve an SHC because the changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed Technical Specification changes associated with both containment integrity and CIVs that will remove ambiguity, improve usability, and increase AOT for CIVs in closed systems, will not cause an accident to occur. Operability requirements for containment integrity and CIVs will remain the same. The ability of the equipment associated with the proposed changes to mitigate the design basis accidents will not be affected. The proposed Technical Specification requirements are sufficient to ensure the required accident mitigation equipment will be available and function properly for design basis accident mitigation. The proposed allowed outage time is reasonable and consistent with standard industry guidelines to ensure the accident mitigation equipment will be restored in a timely manner. In addition, the design basis accidents will remain the same postulated events described in the Millstone Unit No. 3 Final Safety Analysis Report, and the consequences of those events will not be affected. Therefore, the proposed changes will not increase the probability or consequences of an accident previously evaluated.

The additional proposed changes to the Technical Specifications (e.g., relocating information to the Bases, renumbering of footnotes, renumbering a requirement) will not result in any technical changes to the current requirements. Therefore, these additional changes will not increase the probability or consequences of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed changes to the Technical Specifications do not impact any system or component that could cause an accident. The proposed changes will not alter the plant configuration (no new or different type of equipment will be installed) or require any unusual operator actions. The proposed changes will not alter the way any structure, system, or component functions, and will not alter the manner in which the plant is operated. The response of the plant and the operators following an accident will not be different. In addition, the proposed changes do not introduce any new failure modes. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

   The proposed Technical Specification changes associated with both containment integrity and CIVs that will remove ambiguity, improve usability, and increase AOT for CIVs in closed systems, will not cause an accident to occur. Operablity requirements for containment integrity and CIVs will remain the same. The equipment associated with the proposed Technical Specification changes will continue to be able to mitigate the design basis accidents as assumed in the safety analysis. The proposed allowed outage time is reasonable and consistent with standard industry guidelines to ensure the accident mitigation equipment will be restored in a timely manner. In addition, the proposed changes will not affect equipment design or operation, and there are no changes being made to the Technical Specification required safety limits or safety system settings. The proposed Technical Specification changes will provide adequate control measures to ensure the accident mitigation functions are maintained. Therefore, the proposed changes will not result in a reduction in a margin of safety.

   The additional proposed changes to the Technical Specifications (e.g., relocating information to the Bases, renumbering of footnotes, renumbering a requirement) will not result in any technical changes to the current requirements. Therefore, these additional changes will not result in a reduction in a margin of safety.

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Attachment 3

Millstone Nuclear Power Station, Unit No. 3

License Basis Document Change Request 3-6-02
Containment Isolation Valves
Marked Up Pages

License Basis Document Change Request 3-6-02
Containment Isolation Valves
Marked Up Pages

The following Technical Specification and associated Bases pages have been proposed to be changed.

Technical Specification Section Number	Title(s) of Section(s)	Page and Revision Numbers
INDEX	Definitions	i, Amend. 188
INDEX	Bases	xiv, Amend. 204
1.7	Definitions - Containment Integrity	1-2, Amend. 186 1-3, Amend. 187
3/4.6.1.1	Containment Systems - Primary Containment - Containment Integrity	3/4 6-1, Amend. 186 B 3/4 6-1, Amend. 186
3/4.6.3	Containment Systems - Containment Isolation Valves	3/4 6-15, Amend. 206 B 3/4 6-3, NRC Letter dated June 3, 2002 B 3/4 6-3a, NRC Letter dated June 3, 2002 B 3/4 6-3b, NRC Letter dated June 16, 1998 B 3/4 6-3c, Amend. 142

DEFINITIONS

CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

a. All penetrations required to be closed during accident conditions are either:

1) Capable of being closed by an OPERABLE containment automatic isolation valve system, or operator action during periods when containment isolation valves may be opened under administrative control per Specification 4.6.1.1a.

2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions.

b. All equipment hatches are closed and sealed, (Replace with Insert A

c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,

d. The containment leakage rates are within the limits of the Containment Leakage Rate Testing Program, and

e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be that seal water flow supplied to the reactor coolant pump seals.

CORE ALTERATIONS

1.9 CORE ALTERATIONS shall be the movement of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

DOSE EQUIVALENT I-131

1.10 DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microCurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in NRC Regulatory Guide 1.109, Revision 1, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I."

$\bar{E}$ - AVERAGE DISINTEGRATION ENERGY

1.11 $\bar{E}$ shall be the average (weighted in proportion to the concentration of each radionuclide in the sample) of the sum of the average beta and gamma energies per disintegration (MeV/d) for the radionuclides in the sample.

* Insert B

INSERT A - Technical Specifications 1.7 (page 1-2)

2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are opened under administrative control as permitted by specification 3.6.3.

INSERT B - Technical Specifications 1.7 (page 1-2)
add footnote to bottom of page

* In MODE 4, the requirement for an OPERABLE containment isolation valve system is satisfied by use of the containment isolation actuation pushbuttons.

1.12 DELETED

ENGINEERED SAFETY FEATURES RESPONSE TIME

1.13 The ENGINEERED SAFETY FEATURES (ESF) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF Actuation Setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.

1.14 Deleted

FREQUENCY NOTATION

1.15 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1.

IDENTIFIED LEAKAGE

1.1 IDENTIFIED LEAKAGE shall be:

a. Leakage (except CONTROLLED LEAKAGE) into closed systems, such as pump seal or valve packing leaks that are captured and conducted to a sump or collecting tank, or

b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of Leakage Detection Systems or not to be PRESSURE BOUNDARY LEAKAGE, or

c. Reactor Coolant System leakage through a steam generator to the Secondary Coolant System.

MASTER RELAY TEST

1.17 A MASTER RELAY TEST shall be the energization of each master relay and verification of OPERABILITY of each relay. The MASTER RELAY TEST shall include continuity check of each associated slave relay.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

~~November 2, 2000~~

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

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

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves ~~or operator action during periods when containment isolation valves are opened under administrative control,~~** and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions; ~~and~~, except for valves that are open under administrative control as permitted by Specification 3.6.3; and

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

c. Deleted

*(1) Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

**(2) The following valves may be opened on an intermittent basis under administrative control. Manual valves 3SSP*V13, 3SSP*V14, 3HCS*V2, 3HCS*V3, 3HCS*V9, 3HCS*V10, 3HCS*V6, 3HCS*V13, 3CHS*V371, 3MSS*V885, 3MSS*V886, 3MSS*V887. Remote manual valves 3RHS*MV8701A, 3RHS*MV8701B, 3RHS*MV8702A, 3RHS*MV8702B.

Replace with INSERT C

(3) ← INSERT D

INSERT C - Technical Specifications 3.6.1.1 (page 3/4 6-1)

(2) In MODE 4, the requirement for an OPERABLE containment isolation valve system is satisfied by use of the containment isolation actuation pushbuttons.

INSERT D - Technical Specifications 3.6.1.1 (page 3/4 6-1)

(3) Isolation devices in high radiation areas may be verified by use of administrative means.

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guidelines of 10 CFR Part 100 during accident conditions and the control room operators dose to within the guidelines of GDC 19.

The opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: (1) stationing an operator, who is in constant communication with control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

When the Residual Heat Removal (RHR) System is placed in service in the plant cooldown mode of operation, the RHR suction isolation remotely operated valves 3RHS*MV8701A and 3RHS*MV8701B, and/or 3RHS*MV8702A and 3RHS*MV8702B are opened. These valves are normally operated from the control room. They do not receive an automatic containment isolation closure signal, but are interlocked to prevent their opening if Reactor Coolant System (RCS) pressure is greater than approximately 412.5 psia. When any of these valves are opened, either one of the two required licensed (Reactor Operator) control room operators can be credited as the operator required for administrative control. It is not necessary to use a separate dedicated operator.

REPLACE WITH INSERT E

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates, as specified in the Containment Leakage Rate Testing Program, ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the measured overall integrated leakage rate is further limited to less than 0.75 L_a during performance of the periodic test to account for possible degradation of the containment leakage barriers between leakage tests.

The Limiting Condition for Operation defines the limitations on containment leakage. The leakage rates are verified by surveillance testing, as specified in the Containment Leakage Rate Testing Program, in accordance with the requirements of Appendix J. Although the LCO specifies the leakage rates at accident pressure, P_a, it is not feasible to perform a test at such an exact value for pressure. Consequently, the surveillance testing is performed at a pressure greater than or equal to P_a to account for test instrument uncertainties and stabilization changes. This conservative test pressure ensures that the measured leakage rates

INSERT E - Technical Specifications 3.6.1.1 (page B 3/4 6-1)

Primary CONTAINMENT INTEGRITY is required in MODES 1 through 4. This requires an OPERABLE containment automatic isolation valve system. In MODES 1, 2 and 3 this is satisfied by the automatic containment isolation signals generated by high containment pressure, low pressurizer pressure and low steamline pressure. In MODE 4 the automatic containment isolation signals generated by high containment pressure, low pressurizer pressure and low steam line pressure are not required to be OPERABLE. Automatic actuation of the containment isolation system in MODE 4 is not required because adequate time is available for plant operators to evaluate plant conditions and respond by manually operating engineered safety features components. Since the manual actuation pushbuttons portion of the containment isolation system is required to be OPERABLE in MODE 4, the plant operators can use the manual pushbuttons to rapidly position all automatic containment isolation valves to the required accident position. Therefore, the containment isolation actuation pushbuttons satisfy the requirement for an OPERABLE containment automatic isolation valve system in MODE 4.

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 The containment isolation valves shall be OPERABLE(1) ~~with isolation times less than or equal to the required isolation times.~~(2) Add footnote

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

ACTION:

With one or more of the isolation valve(s) inoperable, either ~~maintain at least one isolation valve OPERABLE in each affected penetration that is open and:~~

a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

b. Isolate ~~each~~ the affected penetration (s) within 4 hours by use of ~~at least one~~ deactivated automatic valve (s) secured in the isolation position, or

c. Isolate ~~each~~ the affected penetration (s) within 4 hours by use of ~~at least one~~ closed manual valve (s) or blind flange (s); or

→ INSERT 'F'

e d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1 DELETED

4.6.3.2 Each isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 24 months by: or

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

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

c. Verifying that on a Containment High Radiation test signal, each purge supply and exhaust isolation valve actuates to its isolation position.

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

(2) Containment Isolation Valves may be opened on an intermittent basis under administrative controls.

(1) The provisions of this Specification are not applicable for main steam line isolation valves. However, provisions of Specification 3.7.1.5 are applicable for main steam line isolation valves.

INSERT F - Technical Specifications 3.6.3 (page 3/4 6-15)

d. Isolate the affected penetration that has only one containment isolation valve and a closed system within 72 hours by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange; or

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of General Design Criteria 54 through 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for these isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA. FSAR Table 6.2-65 lists all containment isolation valves. The addition or deletion of any containment isolation valve shall be made in accordance with Section 50.59 of 10CFR50 and approved by the committee(s) as described in the NNQAP Topical Report.

For the purposes of meeting this LCO, the safety function of the containment isolation valves is to shut within the time limits assumed in the accident analyses. As long as the valves can shut within the time limits assumed in the accident analyses, the valves are OPERABLE. Where the valve position indication does not affect the operation of the valve, the indication is not required for valve operability under this LCO. Position indication for containment isolation valves is covered by Technical Specification 6.8.4.e., Accident Monitoring Instrumentation. Failed position indication on these valves must be restored "as soon as practicable" as required by Technical Specification 6.8.4.e.3. Maintaining the valves OPERABLE, when position indication fails, facilitates troubleshooting and correction of the failure, allowing the indication to be restored "as soon as practicable."

INSERT G

If the containment isolation valve on a closed system becomes inoperable, the remaining barrier is a closed system since a closed system is an acceptable alternative to an automatic valve. However, actions must still be taken to meet Technical Specification ACTION 3.6.3.c and the valve, not normally considered as a containment isolation valve, and closest to the containment wall should be put into the ~~locked~~ closed position. No leak testing of the alternate valve is necessary to satisfy the action statement. Placing the manual valve in the ~~locked~~ closed position sufficiently deactivates the penetration for Technical Specification compliance.

INSERT H

For the purposes of meeting this LCO, neither the containment isolation valve, nor any alternate valve on a closed system have a leakage limit associated with valve operability.

INSERT I

3/4.6.4 COMBUSTIBLE GAS CONTROL

Hydrogen Monitors are provided to detect high hydrogen concentration conditions that represent a potential for containment breach from a hydrogen explosion. Containment hydrogen concentration is also important in verifying the adequacy of mitigating actions. The requirement to perform a hydrogen sensor calibration at least every 92 days is based upon vendor recommendations to maintain sensor calibration. This calibration consists of a two point calibration, utilizing gas containing approximately one percent hydrogen gas for one of the calibration points, and gas containing approximately four percent hydrogen gas for the other calibration point.

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit or the Mechanical Vacuum Pumps are capable of controlling the expected hydrogen generation associated with: (1) zirconium-water reactions, (2) radiolytic decomposition of water, and (3) corrosion of metals within containment. These Hydrogen

INSERT G - Technical Specifications 3.6.3 (page B 3/4 6-3)

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve 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.

INSERT H - Technical Specifications 3.6.3 (page B 3/4 6-3)

Closed system isolation valves applicable to Technical Specification ACTION 3.6.3.d are included in FSAR Table 6.2-65, and are the isolation valves for those penetrations credited as General Design Criteria 57. The specified time (i.e., 72 hours) of Technical Specification ACTION 3.6.3.d is reasonable, considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4. In the event the affected penetration is isolated in accordance with 3.6.3.d, the affected penetration flow path must be verified to be isolated on a periodic basis, (Surveillance Requirement 4.6.1.1.a). This is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The frequency of once per 31 days in this surveillance for verifying that each affected penetration flow path is isolated is appropriate considering the valves are operated under administrative controls and the probability of their misalignment is low.

INSERT I - Technical Specifications 3.6.3 (page B 3/4 6-3)

The opening of containment isolation valves on an intermittent basis under administrative controls includes the following considerations: (1) stationing an operator, who is in constant communication with the control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

The appropriate administrative controls, based on the above considerations, to allow containment isolation valves to be opened are contained in the procedures that will be used to operate the valves. Entries should be placed in the Shift Manager Log when these valves are opened or closed. However, it is not necessary to log into any Technical Specification Action Statement for these valves, provided the appropriate administrative controls have been established.

Opening a closed containment isolation valve bypasses a plant design feature that prevents the release of radioactivity outside the containment. Therefore, this should not be done frequently, and the time the valve is opened should be minimized. The determination of the appropriate administrative controls for containment isolation valves requires an evaluation of the expected environmental conditions. This evaluation must conclude environmental conditions will not preclude access to close the valve, and this action will prevent the release of radioactivity outside of containment through the respective penetration.

The following valves may be opened on an intermittent basis under administrative control. Manual valves 3SSP*V013, 3SSP*V014, 3HCS*V002, 3HCS*V003, 3HCS*V009, 3HCS*V010, 3HCS*V006, 3HCS*V013, 3CHS*V371, 3MSS*V885, 3MSS*V886, 3MSS*V887. Remote manual valves 3RHS*MV8701A, 3RHS*MV8701B, 3RHS*MV8702A, 3RHS*MV8702B.

When the Residual Heat Removal (RHR) System is placed in service in the plant cooldown mode of operation, the RHR suction isolation remotely operated valves 3RHS*MV8701A and 3RHS*MV8701B, and / or 3RHS*MV8702A and 3RHS*MV8702B are opened. These valves are normally operated from the control room. They do not receive an automatic containment isolation closure signal, but are interlocked to prevent their opening if Reactor Coolant System (RCS) pressure is greater than approximately 412.5 psia. When any of these valves are opened, either one of the two required licensed (Reactor Operator) control room operators can be credited as the operator required for administrative control. It is not necessary to use a separate dedicated operator.

3/4.6.4 COMBUSTIBLE GAS CONTROL (Continued)

Control Systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971.

The Post-LOCA performance of the hydrogen recombiner blowers is based on a series of equations supplied by the blower manufacturer. These equations are also the basis of the acceptance criteria used in the surveillance procedure. The required performance was based on starting containment conditions before the LOCA of 10.59 psia (total pressure), 120°F and 100% relative humidiy.

The surveillance procedure shall use the following methods to verify acceptable blower flow rate:

1. Definitions and constants

   CFM = cubic feet per minute

   RPM = revolutions per minute

   Blower RPM = 3550

   Blower ft^3/revolution = .028 ft^3

   Standard CFM = gas volume converted to conditions of 68°F and 14.7 psia.

2. Measure and record the following information:

   Pcontainment--Average of 3LMS*P934, 935, 936, and 937 (psia)

   Pout--From 3HCS*PI1A or B (psia)

   Tc--Containment temperature (°F)

   Pin--Measure with a new inlet gauge or calculate from Equation 3a below (psia)

   scfm measured--See Procedure/Form 3613A.3-1

   ΔP_f--From Table 2 (psi)

   A--As found Slip Constant

   Accuracy--Instrument accuracy range from Table 1.

3. Calculate as found slip constant (A)

   a. Pin = Pcontainment - ΔP_f

   b.

$$A = \frac{3550 - \left(\left[\frac{\text{scfm}_{\text{measured}} - \text{Accuracy}}{0.028 * 0.95}\right] * \left[\frac{14.7}{\text{Pin}} * \frac{\text{Tc} + 460}{528}\right]\right)}{\left(\left[\frac{\text{Pout}}{\text{Pin}} * 14.7\right] - 14.7\right)^{\frac{1}{2}} * \left(\frac{14.7}{\text{Pin}} * \frac{\text{Tc} + 460}{528}\right)^{\frac{1}{2}}}$$

3/4.6.4 COMBUSTIBLE GAS CONTROL (Continued)

4. Calculate expected postaccident flow rate using A calculated in Step 3.

   a. Slip RPM

      $= A * (4.937)^{\frac{1}{2}} * 1.218$

   b. Actual Inlet CFM

      ACFM = .028 (3550 - Slip RPM)

   c. Standard CFM

      scfm = ACFM 0.725

   d. Postaccident scfm Minimum = scfm * 0.95

   e. Acceptance Flow Rate

      Postaccident scfm minimum $\geq$ 41.52 scfm.

Table 1 Accuracy Range (Ref. 2)

scfm (measured)	Accuracy Range
30 to < 40	9.13 scfm
40 to < 50	6.98 scfm
50 to < 60	5.81 scfm
60 to < 90	5.17 scfm

Table 2 Inlet Piping Loss (Ref. 1)

scfm Measured (Unadjusted)	ΔP_f (psi)
30	.21
40	.31
50	.52
60	.73
70	.98
80	1.28

References: 1. Calculation 90-RPS-722GM, "Flow Acceptance Criteria for 3HCS*RBNR 1A/B Blowers 3HCS*C1A/B."

2. Calculation PA 90-LOE-0132GE, "Hydrogen Recombiner Flow Error Analysis."

The acceptance flow rate is the required flow rate at the worst case containment conditions 24 hours after the LOCA. The analysis assumes the recombiners are started no later than 24 hours after the accident. The 18-month surveillance shall verify the gas temperature and blower flow rate concurrently.

~~Revised by NRC letter dated June 16, 1998~~

3/4.6.5 SUBATMOSPHERIC PRESSURE CONTROL SYSTEM

3/4.6.5.1 STEAM JET AIR EJECTOR

The closure of the isolation valves in the suction of the steam jet air ejector ensures that: (1) the containment internal pressure may be maintained within its operation limits by the mechanical vacuum pumps, and (2) the containment atmosphere is isolated from the outside environment in the event of a LOCA. These valves are required to be closed for containment isolation.

Docket No. 50-423
B18663

Attachment 4

Millstone Nuclear Power Station, Unit No. 3

License Basis Document Change Request 3-6-02
Containment Isolation Valves
Retyped Pages

INDEX

DEFINITIONS

CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

a. All penetrations required to be closed during accident conditions are either:

1) Capable of being closed by an OPERABLE containment automatic isolation valve system*, or

2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are opened under administrative control as permitted by Specification 3.6.3.

b. All equipment hatches are closed and sealed,

c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,

d. The containment leakage rates are within the limits of the Containment Leakage Rate Testing Program, and

e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be that seal water flow supplied to the reactor coolant pump seals.

CORE ALTERATIONS

1.9 CORE ALTERATIONS shall be the movement of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

DOSE EQUIVALENT I-131

1.10 DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microCurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in NRC Regulatory Guide 1.109, Revision 1, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I."

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* In MODE 4, the requirement for an OPERABLE containment isolation valve system is satisfied by use of the containment isolation actuation pushbuttons.

$\bar{E}$ - AVERAGE DISINTEGRATION ENERGY

1.11 $\bar{E}$ shall be the average (weighted in proportion to the concentration of each radionuclide in the sample) of the sum of the average beta and gamma energies per disintegration (MeV/d) for the radionuclides in the sample.

1.12 DELETED

ENGINEERED SAFETY FEATURES RESPONSE TIME

1.13 The ENGINEERED SAFETY FEATURES (ESF) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF Actuation Setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.

1.14 Deleted

FREQUENCY NOTATION

1.15 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1.

IDENTIFIED LEAKAGE

1.1 IDENTIFIED LEAKAGE shall be:

a. Leakage (except CONTROLLED LEAKAGE) into closed systems, such as pump seal or valve packing leaks that are captured and conducted to a sump or collecting tank, or

b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of Leakage Detection Systems or not to be PRESSURE BOUNDARY LEAKAGE, or

c. Reactor Coolant System leakage through a steam generator to the Secondary Coolant System.

MASTER RELAY TEST

1.17 A MASTER RELAY TEST shall be the energization of each master relay and verification of OPERABILITY of each relay. The MASTER RELAY TEST shall include continuity check of each associated slave relay.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

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

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations[1] not capable of being closed by OPERABLE containment automatic isolation valves,[2] and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions,[3] except for valves that are open under administrative control as permitted by Specification 3.6.3; and

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

c. Deleted

---

(1) Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

(2) In MODE 4, the requirement for an OPERABLE containment isolation valve system is satisfied by use of the containment isolation actuation pushbuttons.

(3) Isolation devices in high radiation areas may be verified by use of administrative means.

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 The containment isolation valves shall be OPERABLE.[1] [2]

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

ACTION:

With one or more of the isolation valve(s) inoperable, either:

a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

b. Isolate the affected penetration(s) within 4 hours by use of deactivated automatic valve(s) secured in the isolation position(s), or

c. Isolate the affected penetration(s) within 4 hours by use of closed manual valve(s) or blind flange(s); or

d. Isolate the affected penetration that has only one containment isolation valve and a closed system within 72 hours by use of at least one closed and deactivated automatic valve, closed manual valve, or blind flange; or

e. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1 DELETED

4.6.3.2 Each isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 24 months by:

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

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

c. Verifying that on a Containment High Radiation test signal, each purge supply and exhaust isolation valve actuates to its isolation position.

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

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[1] The provisions of this Specification are not applicable for main steam line isolation valves. However, provisions of Specification 3.7.1.5 are applicable for main steam line isolation valves.

[2] Containment isolation valves may be opened on an intermittent basis under administrative controls.

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guidelines of 10 CFR Part 100 during accident conditions and the control room operators dose to within the guidelines of GDC 19.

Primary CONTAINMENT INTEGRITY is required in MODES 1 through 4. This requires an OPERABLE containment automatic isolation valve system. In MODES 1, 2 and 3 this is satisfied by the automatic containment isolation signals generated by high containment pressure, low pressurizer pressure and low steamline pressure. In MODE 4 the automatic containment isolation signals generated by high containment pressure, low pressurizer pressure and low steamline pressure are not required to be OPERABLE. Automatic actuation of the containment isolation system in MODE 4 is not required because adequate time is available for plant operators to evaluate plant conditions and respond by manually operating engineered safety features components. Since the manual actuation pushbuttons portion of the containment isolation system is required to be OPERABLE in MODE 4, the plant operators can use the manual pushbuttons to rapidly position all automatic containment isolation valves to the required accident position. Therefore, the containment isolation actuation pushbuttons satisfy the requirement for an OPERABLE containment automatic isolation valve system in MODE 4.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates, as specified in the Containment Leakage Rate Testing Program, ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the measured overall integrated leakage rate is further limited to less than 0.75 L_a during performance of the periodic test to account for possible degradation of the containment leakage barriers between leakage tests.

The Limiting Condition for Operation defines the limitations on containment leakage. The leakage rates are verified by surveillance testing, as specified in the Containment Leakage Rate Testing Program, in accordance with the requirements of Appendix J. Although the LCO specifies the leakage rates at accident pressure, P_a, it is not feasible to perform a test at such an exact value for pressure. Consequently, the surveillance testing is performed at a pressure greater than or equal to P_a to account for test instrument uncertainties and stabilization changes. This conservative test pressure ensures that the measured leakage rates

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of General Design Criteria 54 through 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for these isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA. FSAR Table 6.2-65 lists all containment isolation valves. The addition or deletion of any containment isolation valve shall be made in accordance with Section 50.59 of 10CFR50 and approved by the committee(s) as described in the QAP Topical Report.

For the purposes of meeting this LCO, the safety function of the containment isolation valves is to shut within the time limits assumed in the accident analyses. As long as the valves can shut within the time limits assumed in the accident analyses, the valves are OPERABLE. Where the valve position indication does not affect the operation of the valve, the indication is not required for valve operability under this LCO. Position indication for containment isolation valves is covered by Technical Specification 6.8.4.e., Accident Monitoring Instrumentation. Failed position indication on these valves must be restored "as soon as practicable" as required by Technical Specification 6.8.4.e.3. Maintaining the valves OPERABLE, when position indication fails, facilitates troubleshooting and correction of the failure, allowing the indication to be restored "as soon as practicable."

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve 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.

If the containment isolation valve on a closed system becomes inoperable, the remaining barrier is a closed system since a closed system is an acceptable alternative to an automatic valve. However, actions must still be taken to meet Technical Specification ACTION 3.6.3.d and the valve, not normally considered as a containment isolation valve, and closest to the containment wall should be put into the closed position. No leak testing of the alternate valve is necessary to satisfy the action statement. Placing the manual valve in the closed position sufficiently deactivates the penetration for Technical Specification compliance.

Closed system isolation valves applicable to Technical Specification ACTION 3.6.3.d are included in FSAR Table 6.2-65, and are the isolation valves for those penetrations credited as General Design Criteria 57. The specified time (i.e., 72 hours) of Technical Specification ACTION 3.6.3.d is reasonable, considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3 and 4. In the event the affected penetration is isolated in accordance with 3.6.3.d, the affected penetration flow path must be verified to be isolated on a periodic basis, (Surveillance Requirement 4.6.1.1.a). This is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The frequency of once per 31 days in this surveillance for verifying that each affected penetration flow path is isolated is appropriate considering the valves are operated under administrative controls and the probability of their misalignment is low.

3/4.6.3 CONTAINMENT ISOLATION VALVES (Continued)

For the purposes of meeting this LCO, neither the containment isolation valve, nor any alternate valve on a closed system have a leakage limit associated with valve operability.

The opening of containment isolation valves on an intermittent basis under administrative controls includes the following considerations: (1) stationing an operator, who is in constant communication with the control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

The appropriate administrative controls, based on the above considerations, to allow containment isolation valves to be opened are contained in the procedures that will be used to operate the valves. Entries should be placed in the Shift Manager Log when these valves are opened or closed. However, it is not necessary to log into any Technical Specification Action Statement for these valves, provided the appropriate administrative controls have been established.

Opening a closed containment isolation valve bypasses a plant design feature that prevents the release of radioactivity outside the containment. Therefore, this should not be done frequently, and the time the valve is opened should be minimized. The determination of the appropriate administrative controls for containment isolation valves requires an evaluation of the expected environmental conditions. This evaluation must conclude environmental conditions will not preclude access to close the valve, and this action will prevent the release of radioactivity outside of containment through the respective penetration.

The following valves may be opened on an intermittent basis under administrative control. Manual valves 3SSP*V013, 3SSP*V014, 3HCS*V002, 3HCS*V003, 3HCS*V009, 3HCS*V010, 3HCS*V006, 3HCS*V013, 3CHS*V371, 3MSS*V885, 3MSS*V886, 3MSS*V887. Remote manual valves 3RHS*MV8701A, 3RHS*MV8701B, 3RHS*MV8702A, 3RHS*MV8702B.

When the Residual Heat Removal (RHR) System is placed in service in the plant cooldown mode of operation, the RHR suction isolation remotely operated valves 3RHS*MV8701A and 3RHS*MV8701B, and/or 3RHS*MV8702A and 3RHS*MV8702B are opened. These valves are normally operated from the control room. They do not receive an automatic containment isolation closure signal, but are interlocked to prevent their opening if Reactor Coolant System (RCS) pressure is greater than approximately 412.5 psia. When any of these valves are opened, either one of the two required licensed (Reactor Opeator) control room operators can be credited as the operator required for administrative control. It is not necessary to use a separate dedicated operator.

3/4.6.4 COMBUSTIBLE GAS CONTROL

Hydrogen Monitors are provided to detect high hydrogen concentration conditions that represent a potential for containment breach from a hydrogen explosion. Containment hydrogen concentration is also important in verifying the adequacy of mitigating actions. The requirement to perform a hydrogen sensor calibration at least every 92 days is based upon vendor recommendations to maintain sensor calibration. This calibration consists of a two point calibration, utilizing gas containing approximately one percent hydrogen gas for one of the calibration points, and gas containing approximately four percent hydrogen gas for the other calibration point.

3/4.6.4 COMBUSTIBLE GAS CONTROL (Continued)

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit or the Mechanical Vacuum Pumps are capable of controlling the expected hydrogen generation associated with: (1) zirconium-water reactions, (2) radiolytic decomposition of water, and (3) corrosion of metals within containment. These Hydrogen Control Systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971.

The Post-LOCA performance of the hydrogen recombiner blowers is based on a series of equations supplied by the blower manufacturer. These equations are also the basis of the acceptance criteria used in the surveillance procedure. The required performance was based on starting containment conditions before the LOCA of 10.59 psia (total pressure), 120°F and 100% relative humidiy.

The surveillance procedure shall use the following methods to verify acceptable blower flow rate:

1. Definitions and constants

   CFM = cubic feet per minute

   RPM = revolutions per minute

   Blower RPM = 3550

   Blower ft^3/revolution = .028 ft^3

   Standard CFM = gas volume converted to conditions of 68°F and 14.7 psia.

2. Measure and record the following information:

   Pcontainment--Average of 3LMS*P934, 935, 936, and 937 (psia)

   Pout--From 3HCS*PI1A or B (psia)

   Tc--Containment temperature (°F)

   Pin--Measure with a new inlet gauge or calculate from Equation 3a below (psia)

   scfm measured--See Procedure/Form 3613A.3-1

   ΔP_f--From Table 2 (psi)

   A--As found Slip Constant

   Accuracy--Instrument accuracy range from Table 1.

3/4.6.4 COMBUSTIBLE GAS CONTROL (Continued)

3. Calculate as found slip constant (A)

   a. Pin = Pcontainment - ΔP_f

   b.

$$A = \frac{3550 - \left(\left[\frac{\text{scfm measured} - \text{Accuracy}}{0.028 * 0.95}\right] * \left[\frac{14.7}{\text{Pin}} * \frac{\text{Tc} + 460}{528}\right]\right)}{\left(\left[\frac{\text{Pout}}{\text{Pin}} * 14.7\right] - 14.7\right)^{\frac{1}{2}} * \left(\frac{14.7}{\text{Pin}} * \frac{\text{Tc} + 460}{528}\right)^{\frac{1}{2}}}$$

4. Calculate expected postaccident flow rate using A calculated in Step 3.

   a. Slip RPM

      $= A * (4.937)^{\frac{1}{2}} * 1.218$

   b. Actual Inlet CFM

      ACFM = .028 (3550 - Slip RPM)

   c. Standard CFM

      scfm = ACFM 0.725

   d. Postaccident scfm Minimum = scfm * 0.95

   e. Acceptance Flow Rate

      Postaccident scfm minimum $\geq$ 41.52 scfm.

Table 1 Accuracy Range (Ref. 2)

scfm (measured)	Accuracy Range
30 to < 40	9.13 scfm
40 to < 50	6.98 scfm
50 to < 60	5.81 scfm
60 to < 90	5.17 scfm

Table 2 Inlet Piping Loss (Ref. 1)

scfm Measured (Unadjusted)	ΔP_f (psi)
30	.21
40	.31
50	.52
60	.73
70	.98
80	1.28

3/4.6.4 COMBUSTIBLE GAS CONTROL (Continued)

References: 1. Calculation 90-RPS-722GM, "Flow Acceptance Criteria for 3HCS*RBNR 1A/B Blowers 3HCS*C1A/B."

2. Calculation PA 90-LOE-0132GE, "Hydrogen Recombiner Flow Error Analysis."

The acceptance flow rate is the required flow rate at the worst case containment conditions 24 hours after the LOCA. The analysis assumes the recombiners are started no later than 24 hours after the accident. The 18-month surveillance shall verify the gas temperature and blower flow rate concurrently.

3/4.6.5 SUBATMOSPHERIC PRESSURE CONTROL SYSTEM

3/4.6.5.1 STEAM JET AIR EJECTOR

The closure of the isolation valves in the suction of the steam jet air ejector ensures that: (1) the containment internal pressure may be maintained within its operation limits by the mechanical vacuum pumps, and (2) the containment atmosphere is isolated from the outside environment in the event of a LOCA. These valves are required to be closed for containment isolation.