Enclosure 2

Proposed Technical Specifications

3.6.2 CONTAINMENT ISOLATION VALVES

APPLICABILITY: MODES 1, 2, 3 and 4.

OBJECTIVE: To provide assurance that the containment isolation valves listed in Table 3.6.2-1 will function when initiated by appropriate sensors.

SPECIFICAIION: The containment isolation valves specified in Table 3.6.2-1 shall be OPERABLE.

ACTION:

A. With one or more of the isolation valve(s) specified in Table 3.6.2-1 inoperable, for each affected penetration that is provided with two isolation valves and is open maintain at least one valve OPERABLE, and for all affected penetrations with either one or two isolation valves, one of the following Actions shall be taken:

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

   2. Isolate each affected penetration within 4 hours by use of at least one deactivated* power operated valve secured in the isolation position, or

   3. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange, or

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

B. The provisions of Specification 3.0.4 are not applicable provided that within 4 hours the affected penetration is isolated in accordance with Action A.2 or A.3 above, and provided that the associated system, if applicable, is declared inoperable and the appropriate ACTION statements for that system are taken.

BASIS: 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. Containment isolation ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

* Valve may be temporarily activated for valve position verification and testing. While the valve is activated by this note, Action A.1 shall be applied and any system(s) declared inoperable pursuant to Action B shall not be declared OPERABLE.

The isolation valves of the Sphere Purge Air Supply (POV-9) and Air Outlet (POV-10) lines have not been demonstrated capable of closure under the differential pressures generated by a design basis accident. For this reason, containment isolation in these lines shall be maintained. This configuration shall be accomplished by locking closed manual isolation valves CVS-301 and CVS-313 of these lines. These valves shall remain locked closed during MODES 1, 2, 3 and 4 until POV-9 and POV-10 can be demonstrated capable of performing their containment isolation function under post accident conditions.

The isolation valves of the Sphere Equalizing/Ventilation line (CV-116 and CV-10) are limited to a maximum opening angle of 53.5° (90° being full open) during operation. The valves have been demonstrated to be capable of closure from this opening angle under the differential pressures generated by a design basis accident.[2]

Temporary activation of a secured closed containment isolation valve permits position indication of certain types of valves and allows maintenance testing of isolation valves.

References:

1. NRC letter dated July 2, 1980, from D. G. Eisenhut to all pressurized water reactor licensees.

2. SCE to NRC letter dated March 27, 1984, from M. O. Medford to D. M. Crutchfield.

TABLE 3.6.2-1

REMOTE MANUAL (RM) OR AUTOMATIC CONTAINMENT ISOLATION VALVE SUMMARY

	DESCRIPTION	INSIDE SPHERE	OUTSIDE SPHERE
1.	Sphere Sump Discharge	CV-102	CV-103
2.	RCS Or Tk Discharge	CV-104	CV-105
3.	RCS Or Tk Vent	CV-106	CV-107
4.	N_2 to RCS Drain Tank and PRT	CV-536	CV-535
5.	ORMS 1211/1212 Sphere Sample Supply	CV-147	SV-1212-9
6.	ORMS 1211/1212 Sphere Sample Return	CV-146	SV-1212-8
7.	A Stm. Gen. Stm. Sample	-	SV-119
8.	B Stm. Gen. Stm. Sample	-	SV-120
9.	C Stm. Gen. Stm. Sample	-	SV-121
10.	A Stm. Gen. Blowdown Sample	-	SV-123
11.	B Stm. Gen. Blowdown Sample	-	SV-122
12.	C Stm. Gen. Blowdown Sample	-	SV-124
13.	Service Water to Sphere	CV-537	CV-115
14.	Service Air to Sphere	Check Valve	SV-125
15.	SI Loop C Vent	SV-702B	SV-702A
16.	SI Loop B Vent	SV-702D	SV-702C
17.	H2 Calibration Gas	SV-3004	SV-2004
18.	RC Loop Sample	(CV-955, CV-956, CV-962) RM	CV-957 SV-3302
19.	Pressurizer Sample	(CV-951, CV-953) RM	CV-992
20.	Sphere Purge Air Supply*	-	POV-9
21.	Sphere Purge Air Outlet*	-	POV-10
22.	Sphere Equalizing/Vent Inst. Air Vent	CV-116** CV-40	CV-10**
23.	Primary Makeup to PRT	CV-533	CV-534
24.	Cont. Cooling Out	-	CV-515 RM
25.	Cont. Cooling In	-	CV-516 RM
26.	N2 Supply to PORV	Check Valve	CV-532 RM
27.	Letdown	CV-525 RM	CV-526 RM
28.	Seal Water Return	CV-527 RM	CV-528 RM
29.	RC Loop Sample Return	Check Valve	SV-3303
30.	PRT Gas Sample	CV-948 RM	CV-949

* Manual valves CVS-301 and CVS-313 of the Sphere Purge Air Supply and Air Outlet lines, respectively, shall be locked closed during MODES 1, 2, 3 and 4.

** Containment sphere vent valves CV-10 and CV-116 shall be no greater than 53.5° opening during Modes 1, 2, 3 and 4.

3.6.4 CONTAINMENT AIR LOCKS

APPLICABILITY: Applies to the operability and leakage limitations of the containment personnel air locks in Modes 1, 2, 3 and 4.

OBJECTIVE: To verify leakage from the containment personnel air locks is maintained within specified values.

SPECIFICATION: Each containment air lock shall be OPERABLE with:

A. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and

B. Overall air lock leakage shall not exceed the maximum acceptable values specified in Specification 4.3.1.

ACTION:

C. With one containment air lock door inoperable:

1. Maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed.

2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days.

3. Otherwise, be in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 30 hours.

4. The provisions of Specification 3.0.4 are not applicable.

D. With the containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 30 hours.

BASIS: The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air locks provides assurance that the overall airlock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

3.6.5 CONTAINMENT VENTILATION SYSTEM

APPLICABILITY: Applies to the leakage limitations of the containment ventilation system isolation valves in Modes 1, 2, 3 and 4.

OBJECTIVE: To verify leakage from the containment purge supply and exhaust isolation valves, and the containment sphere equalizing/ventilation isolation valves is maintained within specified values.

SPECIFICATION: The containment purge supply and exhaust isolation valves (POV-9 and 10), and the containment sphere equalizing/ventilation isolation valves (CV-10 and 116) shall be OPERABLE with measured leakage not exceeding the limits of Surveillance Requirement 4.3.1.III.B.

ACTION: With a containment purge supply/exhaust and/or sphere equalizing/ventilation isolation valve having a measured leakage rate exceeding the limits of Surveillance Requirement 4.3.1.III.B, restore the inoperable valve(s) to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

BASIS: Leakage integrity tests with a maximum allowable leakage rate for the containment purge supply/exhaust and sphere ventilation isolation valves will provide early indication of resilient material and seal degradation and will allow the opportunity for repair before gross leakage failure develops.

4.3 CONTAINMENT SYSTEMS

4.3.1 CONTAINMENT TESTING

APPLICABILITY: Applies to containment leakage.

OBJECTIVE: To verify that leakage from the containment sphere is maintained within specified values.

SPECIFICATION: 1. Integrated Leakage Rate Tests, Type A

A. Test Pressure

In order to verify leakage from the containment sphere, a Type A test shall be performed. Type A tests shall consist of a peak pressure test or a reduced pressure test.

Peak pressure tests are conducted at a test pressure greater than or equal to 49.4 psig, and reduced pressure tests are conducted at a test pressure greater than or equal to 24.7 psig.

B. Acceptance Criteria

For the peak pressure test program the containment sphere leakage rate measured is less than 0.090 wt%/24 hours of the initial content of the containment air at the calculated peak pressure of 49.4 psig. For the reduced pressure test program to be conducted at 24.7 psig, the measured leakage rate shall be less than 0.064 wt%/24 hours of the initial content of the containment atmosphere at the calculated peak pressure of 49.4 psig.

The accuracy of each Type A test is verified by a supplemental test which (1) confirms the accuracy of the Type A test by verifying that the difference between supplemental and Type A test data is within 25% of 0.12 wt%/24 hours for the peak pressure test or 0.085 wt%/24 hours for the reduced pressure test, and (2) requires the quantity of air bled from or injected into the containment during the supplemental test to be equivalent to at least 75 percent of the total allowable leakage rate at 49.4 psig.

C. Frequency

A set of 3 periodic Type A tests are performed at 40 ± 10 month intervals during each 10-year service period. The third test of each set is performed when the plant is shut down for the 10-year plant inservice inspection. The permissible period for Type A testing shall be limited to periods when the plant facility is nonoperational and secured in the shutdown condition.

If any periodic Type A test fails to meet the acceptance criteria above, the test schedule applicable to subsequent Type A tests shall be submitted to the NRC for review and approval. If two consecutive periodic Type A tests fail to meet the above acceptance criteria, a Type A test is performed at each plant shutdown for refueling or approximately every 18 months, whichever occurs first, until two consecutive Type A tests meet the acceptance criteria, after which time the normal test schedule may be resumed.

II. Containment Penetration Leakage Rate Tests (Type B)

A. Test Pressure

Type B tests are conducted at a test pressure at or above 49.4 psig. Personnel airlocks are tested every six months at or above 49.4 psig. In addition, a lower pressure test at or above 3 psig is performed on the personnel airlocks as required by Section II.C.

B. Acceptance Criteria

The combined leakage rate of all penetrations subject to Type B tests and all containment isolation valves subject to Type C tests is less than 0.072 wt%/24 hours of the initial content of the containment atmosphere at the calculated peak pressure of 49.4 psig. The overall air lock leakage is less than 0.012 wt%/24 hours for the 49.4 psig test and less than 0.0024 wt%/24 hours for the 3 psig test.

C. Test Schedule

Type B tests, except for airlocks, are performed during every reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than two years.

Airlock volumes between the doors are tested:

(1) at least every six months at 49.4 psig,

(2) within 72 hours following each closing, except when the airlock is being used for multiple entries, then at least once per 72 hours, at or above 3 psig test pressure, and

(3) prior to establishing CONTAINMENT INTEGRITY when maintenance has been performed on the airlock that could affect the airlock sealing capability at 49.4 psig.*

III. Containment Isolation Valve Leakage Rate Tests (Type C)

A. Test Pressure

Type C tests are conducted in accordance with the criteria specified in Appendix J of 10 CFR 50.

These Type C tests are conducted at a test pressure at or above 49.4 psig.

B. Acceptance Criteria (Maximum acceptable value)

The combined leakage rate of all penetrations subject to Type B tests and all containment isolation valves subject to Type C tests is less than .072 wt%/24 hours of the initial content of the containment atmosphere at the calculated peak pressure of 49.4 psig. The measured leakage for the 24-inch containment purge supply and return isolation valves, and the 6-inch containment ventilation isolation valves is less than 0.012 wt%/24 hours per line.

C. Test Schedule

Type C tests are performed during each reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than two years.

Seal tests conducted on active containment ventilation isolation valves shall be performed every three months.

Seal tests conducted on passive containment ventilation isolation valves shall be performed every six months.

IV. Recirculation System

A. Test Pressure

Leak tests shall be performed on portions of the Safety Injection System used for recirculation at a pressure equal to or greater than the operating pressure under accident conditions. The test fluid shall be water.

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*Exemption to Appendix J of 10 CFR 50

B. Acceptance Criteria

Visual inspection for leakage shall be made and if leakage can be detected, measurements of such leakage shall be made. The maximum effective leakage shall be maintained in accordance with Section 3.3.1.A(4) of Appendix A Technical Specifications.

C. Test Schedule

Visual inspections of the recirculation loop outside containment (including the Containment Spray System)) shall be made at intervals not to exceed the normal plant refueling interval. In addition, pumps and valves of the recirculation loop outside containment which are used during normal operation, shall be visually inspected for leakage at intervals not to exceed once every six months.

V. Test Result Report

The results of Type A, B, and C leakage rate tests are submitted to the NRC in a summary technical report approximately three months after the conduct of the Type A tests. This report contains an analysis and interpretation of the Type A test results and a summary of periodic Type B and C tests performed since the last Type A test. Leakage rate test results from Type A tests that fail to meet the acceptance criteria specified in Section I.B above are reported in a separate attached summary report that includes an analysis of the test data, an instrumentation error analysis, and the structural conditions of the containment or components, if any, which contributed to failure in meeting the acceptance criteria. Results and analysis of the supplemental verification test used to demonstrate the validity of the Type A test measurements are included.

VI. Containment Modification

Any major modification or replacement of a component that is part of the containment boundary is followed by Type A, B, or C tests as applicable. The results of such tests are included in the test result report described above and meet the respective acceptance criteria. Minor modifications or replacements performed directly prior to the conduct of a scheduled Type A test do not require a separate test.

Bases: The containment system is one of the major engineered safety features and is a consequence-limiting system, it represents the final physical barrier that, in the event of a loss-of-coolant accident (LOCA), protects against the inadvertent release of fission products.

I. Leakage Rate Testing

Periodic containment integrated leakage rate tests are performed at or above 49.4 psig or at or above 24.7 psig for the reduced pressure test program. The leak rate will be calculated using the formulas of Reference 2 (Total Time) and Reference 3 (Mass Point).

Test schedules and the acceptance criteria specified herein are established based on the requirements of 10 CFR 50, Appendix J.[1] A containment leakage rate of 0.12 wt% of the initial content of containment atmosphere at 49.4 psig/24 hours maintains public exposure well below 10 CFR 100 values in the event of a hypothetical LOCA.[4] This leakage rate also limits public exposure to 10 CFR 100 values even if a complete core meltdown is postulated.

The acceptance criteria for

(1) Type A test is 75% of the containment leakage rate specified above

(2) Type B and Type C tests combined is 60% of the containment leakage rate specified above.

to allow for possible deterioration of the containment boundary between tests.

II. Recirculation System Testing

The portion of the Recirculation system outside the containment sphere is effectively an extension of the boundary of the containment.

Leakage from this system shall be maintained at as low as practical levels. The effective leakage of this system shall be maintained in accordance with the maximum leakage limitations established in Section 3.3.1.A(4) of Appendix A Technical Specifications.

The piping configurations of the recirculation and containment spray lines assure that leakage within Technical Specification limits will not deplete the isolation valve seal water system fluid inventory for at least 30 days at a pressure of 1.10 Pa. Therefore,

leakage from the isolation valves and containment penetrations for these systems is not added to the combined leakage rate for all penetrations and valves subject to Type B and C tests.

The containment penetrations encompassed by the recirculation and containment spray systems include penetrations for one containment spray line, three reactor coolant pump seal water injection lines, and the recirculation pump discharge line to the recirculation heat exchanger.

References

(1) 10 CFR 50, Appendix J.

(2) ANSI N45.4-1972

(3) ANSI/ANS 56.8-1981

(4) Final Engineering Report and Safety Analysis, Paragraph 5.3

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