

DEFINITIONS

REPORTABLE EVENT

1.7 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 of 10 CFR Part 50.

CONTAINMENT INTEGRITY

1.8 CONTAINMENT INTEGRITY shall exist when:

- a. All penetrations required to be closed during accident conditions are either:
 1. Capable of being closed by the Safety Features Actuation System, or
 2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except those approved to be open under administrative controls.
- b. All equipment hatches are closed and sealed.
- c. Each airlock is ~~OPERABLE~~ ^{in compliance with the requirements of} pursuant to Specification 3.6.1.3.
- d. The containment leakage rates are within the limits of Specification 3.6.1.2, and
- e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

CHANNEL CALIBRATION

1.9 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. CHANNEL CALIBRATION may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK

1.10 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

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 one 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:

1. All penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except those valves that may be opened under administrative controls per Specification 3.6.3.1, and
2. All equipment hatches are closed and sealed.

~~b. By verifying that each containment air lock is OPERABLE per Specification 3.6.1.3.~~

Shield Building (including the annulus and containment)

*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 verification of these penetrations being closed need not be performed more often than once per 92 days.

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

INFORMATION ONLY

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of $\leq L_a$, 0.50 percent by weight of the containment air per 24 hours at P_a , 38 psig.
- b. A combined leakage rate of $\leq 0.60 L_a$, for all penetrations and valves subject to Type B and C tests, when pressurized to P_a .
- c. A combined leakage rate of $\leq 0.03 L_a$ for all penetrations that are secondary containment bypass leakage paths, when pressurized to P_a .
- d. A single penetration leakage rate of $\leq 0.15 L_a$ for the containment purge and exhaust isolation valve special test.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With either (a) the measured overall integrated containment leakage rate exceeding $0.75 L_a$ (b) with the measured combined leakage rate for all penetrations and valves subject to Type B and C tests exceeding $0.60 L_a$, or (c) with the combined bypass leakage rate exceeding $0.03 L_a$, restore the leakage rate(s) to within the limit(s) prior to increasing the Reactor Coolant System temperature above 200°F.
- b. With a single containment purge and exhaust isolation valve penetration having leakage rate exceeding $0.15 L_a$; restore the leakage rate to within limits in 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR 50 using the methods and provisions of ANSI N45.4 - 1972:

- a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 + 10 month intervals during shutdown at P_a , 38 psig, during each 10 year service period.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. If any periodic Type A test fails to meet $0.75 L_a$, the test schedule for subsequent Type A tests shall be reviewed and approved by the Commission. If two consecutive Type A tests fail to meet $0.75 L_a$, a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet $0.75 L_a$ at which time the above test schedule may be resumed.
- c. The accuracy of each Type A test shall be 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 $0.25 L_a$.
 2. Has a duration sufficient to establish accurately the change in leakage between the Type A test and the supplemental test.
 3. Requires that the rate at which gas is injected into the containment or bled from the containment during the supplemental test is between $0.75 L_a$ and $1.25 L_a$.
- d. Type B and C tests shall be conducted with gas at P_a , 38 psig, at intervals no greater than 24 months except for tests involving air locks.
- e. The combined bypass leakage rate shall be determined to be $< 0.03 L_a$ by applicable Type B and C tests at least once every 24 months except for penetrations which are not individually testable; penetrations not individually testable shall be determined to have no detectable leakage when tested with soap bubbles while the containment is pressurized to P_a , 38 psig, during each Type A test.

~~f. Air locks shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.3. (Deleted)~~

INFORMATION ONLY

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- g. Each time the containment purge and exhaust isolation valves are opened, a special test shall be performed within 72 hours after valve closure or prior to entering MODE 4 from MODE 5, whichever is later. The special test is conducted by pressurizing the piping section including one valve inside and one valve outside the containment to a pressure greater or equal to 20 psig. The leakage rate per penetration shall not exceed $0.15 L_a$.
- h. The special test as defined in Surveillance Requirement 4.6.1.2.g shall be performed for the containment purge and isolation valves when the plant has been in any combination of MODES 3, 4, 5 or 6 for more than 72 hours provided that the test required by Surveillance Requirement 4.6.1.2.g has not been performed in the previous 6 months.
- i. All test leakage rates shall be calculated using observed data converted to absolute values. Error analyses shall be performed to select a balanced integrated leakage measurement system.
- j. The provisions of Specification 4.0.2 are not applicable.

TABLE 3.6-1

DELETED

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

3.6.1.3 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. An overall air lock leakage rate of $\leq 0.002 L_a$ at P_a , 38 psig.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

See Attached

~~with an air lock inoperable, restore the air lock 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.~~

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

- a. ~~*After each opening except when the air lock is being used for multiple entries, then at least once per 72 hours, (by verifying either no detectable seal leakage when the volume between the door seals is pressurized to 10 psig, or by verifying a seal leakage rate of $< 0.0015 L_a$ when the volume between the door seals is pressurized to P_a , 38 psig, and the air lock door holddowns are installed,~~
Within 72 hours after
- b. ~~#~~ At least once per 6 months by conducting an overall air lock leakage test at P_a , 38 psig, and by verifying that the overall air lock leakage rate is within its limit, and
- c. At least once per 6 months by verifying that only one door in each air lock can be operated at a time.

Exemption to Appendix "J" of 10 CFR 50.

* Entry and exit through the OPERABLE door is permissible if necessary to perform repairs of the affected air lock components. After each entry and exit, the OPERABLE door must be closed without delay.
 # The provisions of Specification 4.0.2 are not applicable.

New 3.6.1.3 Action

- **a. With one air lock door inoperable in one or more containment air locks, or with the containment air lock interlock mechanism inoperable in one or more containment air locks:
1. Verify an OPERABLE door in each affected air lock is closed within one hour, and
 2. Lock an OPERABLE door closed in each affected air lock within 24 hours, and
 3. Operation may then continue provided that an OPERABLE door in each affected air lock is maintained closed and is verified to be locked closed at least once per 31 days, and provided that the containment air lock passes each scheduled performance of SR 4.6.1.3b.
 4. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- **b. With one or more containment air locks inoperable for reasons other than above:
1. Verify at least one door in each affected air lock is closed within one hour, and
 2. Restore air lock(s) to OPERABLE status within 24 hours.
 3. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

3/4.6 CONTAINMENT SYSTEMS

BASES

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 limits of 10 CFR 100 during accident conditions.

and air lock door requirements?

1

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure of 38 μ sig, P_a . As an added conservatism, the measured overall integrated leakage rate is further limited to $\leq 0.75 L_a$, during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates are consistent with the requirements of 10 CFR Part 50, Appendix J with the following exemption. The third test of each Type A testing set need not be conducted when the plant is shutdown for the 10-year plant inservice inspections. The operational readiness of the vessel is considered proven by the ILRT, and in accordance with license requirements, when completed per the 40 \pm 10 months frequency.

The special test for the containment purge and exhaust isolation valves is intended to detect gross degradation of seals on the valve seats. The special test is performed in addition to the Appendix J requirements.

USAR 6.2.4 identifies all penetrations that are secondary containment bypass leakage paths.

3/4.6.1.3 CONTAINMENT AIR LOCKS

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 lock seals provide assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.