

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of:
 1. Less than or equal to L_t , 0.50 percent by weight of the containment air per 24 hours at P_a , 44 psig, or
 2. Less than or equal to L_t , 0.25 percent by weight of the containment air per 24 hours at a reduced pressure of P_r , 22 psig.
- b. A combined leakage rate of less than or equal to $0.60 L_t$ for all penetrations and valves subject to Type B and C tests when pressurized to P_a .
- c. A combined bypass leakage rate of less than or equal to $0.06 L_t$ for all penetrations that are secondary containment bypass leakage paths when pressurized to P_a .

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

ACTION:

With either (a) the measured overall integrated containment leakage rate exceeding $0.75 L_t$ or $0.75 L_r$, as applicable, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding $0.60 L_t$, or (c) with the combined bypass leakage rate exceeding $0.06 L_t$, restore the overall integrated leakage rate to less than or equal to $0.75 L_t$ or less than or equal to $0.75 L_r$, as applicable, and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than or equal to $0.60 L_t$, and the bypass leakage rate to less than or equal to $0.06 L_t$ prior to increasing the Reactor Coolant System temperature above 200°F.

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 Part 50 using the methods and provisions of ANSI N45.4-1972:

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SURVEILLANCE REQUIREMENTS (Continued)

- a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 ± 10 month intervals** during shutdown at either P_0 , 44 psig, or at P_1 , 22 psig, during each 10-year service period. The third test of each set shall be conducted during the shutdown for the 10-year plant inservice inspection.
- b. If any periodic Type A test fails to meet either $0.75 L_0$ or $0.75 L_1$, 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 either $0.75 L_0$ or $0.75 L_1$, a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet either $0.75 L_0$ or $0.75 L_1$ 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 test by verifying that the supplemental test result, L_c , minus the sum of the Type A and the superimposed leak, L_0 , are equal to or less than $0.25 L_0$.
 2. Has a duration sufficient to establish accurately the change in leakage rate between the Type A test and the supplemental test.
 3. Requires the quantity of gas injected into the containment or bled from the containment during the supplemental test to be between $0.75 L_0$ and $1.25 L_0$.
- d. Type B and C tests shall be conducted with gas at P_0 , 44 psig, at intervals no greater than 24 months* except for tests involving:
 1. Air locks,
 2. Purge supply and exhaust isolation valves with resilient material seals.

*Testing for the first cycle of operation shall be done during the first refueling outage.

**A one time extension of the test interval is allowed for the third Type A test of the first 10-year service period, provided that performance of the Type A test occurs prior to unit restart following Refuel 7.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- e. Purge supply and exhaust isolation valves with resilient material seals shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.7.2.
- f. The combined bypass leakage rate shall be determined to be less than or equal to 0.06 L_a by applicable Type B and C tests at least once per 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, 44 psig, during each Type A test.
- g. Air locks shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.3.
- h. The provisions of Specification 4.0.2 are not applicable.

*Testing for the first cycle of operation shall be done during the first refueling outage.

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 Part 100 during accident conditions.

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, P_a . As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to $0.75 L_p$ or less than or equal to $0.75 L_t$, as applicable during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance requirements for measuring leakage rates are consistent with the requirements of Appendix J of 10 CFR Part 50.*

Secondary containment bypass leakage paths previously, Table 3.6-1, have been incorporated into plant procedure UNT-005.026.

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

*A one time extension of the test interval is allowed for the third Type A test of the first 10-year service period, as required by Surveillance Requirement 4.6.1.2.a and by Section III.D.(a) of Appendix J to 10 CFR Part 50, provided the performance of the Type A test occurs prior to unit restart following Refuel 7.

NPF-38-145

ATTACHMENT B

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of:
 1. Less than or equal to L_a , 0.50 percent by weight of the containment air per 24 hours at P_a , 44 psig. or
 2. Less than or equal to L_t , 0.25 percent by weight of the containment air per 24 hours at a reduced Pressure of P_t , 22 psig.
- b. A combined leakage rate of less than or equal to 0.60 L_a for all penetrations and valves subject to Type B and C tests when pressurized to P_a .
- c. A combined bypass leakage rate of less than or equal to 0.06 L_a for all penetrations that are secondary containment bypass leakage paths when pressurized to P_a .

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

ACTION:

With either (a) the measured overall integrated containment leakage rate exceeding 0.75 L_a or 0.75 L_t , as applicable, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 L_a , or (c) with the combined bypass leakage rate exceeding 0.06 L_a , restore the overall integrated leakage rate to less than or equal to 0.75 L_a or less than or equal to 0.75 L_t , as applicable, and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than or equal to 0.60 L_a and the bypass leakage rate to less than or equal to 0.06 L_a prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

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

CONTAINMENT SYSTEMS

SURVEILLANCE Requirements (Continued)

- a. Type A tests shall be conducted in accordance with the schedule and criteria specified in 10 CFR 50, Appendix J, as modified by approved exemptions. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 \pm 10 month intervals ~~**~~ during shutdown at either Pa, 44 psig, or at Pt, 22 psig, during each 10 year service period. The third test of each set shall be conducted during the shutdown for the 10 year plant inservice inspection.
- ~~b. If any periodic Type A test fails to meet either 0.75 La or 0.75 Lt, 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 either 0.75 La or 0.75 Lt, a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet either 0.75 La or 0.75 Lt 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 test by verifying that the supplemental test result, Lc, minus the sum of the Type A and the superimposed leak, La are equal to or less than 0.25 La.~~
 - ~~2. Has a duration sufficient to establish accurately the change in leakage rate between the Type A test and the supplemental test.~~
 - ~~3. Requires the quantity of gas injected into the containment or bled from the containment during the supplemental test to be between 0.75 La and 1.25 La.~~
- ~~b. d.~~ Type B and C tests shall be conducted with gas at Pa, 44 psig, at intervals no greater than 24 months ~~*~~ except for tests involving:
1. Air locks.
 2. Purge supply and exhaust isolation valves with resilient material seals.

~~*Testing for the first cycle of operation shall be done during the first refueling outage.~~

~~**A one time extension of the test interval is allowed for the third Type A test of the first 10 year service period, provided that performance of the Type A test occurs prior to unit restart following Refuel 7.~~

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- ~~c.e.~~ Purge supply and exhaust isolation valves with resilient material seals shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.7.2.
- ~~d.f.~~ The combined bypass leakage rate shall be determined to be less than or equal to 0.06 L* by applicable Type B and C tests at least once per 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, 44 psig, during each Type A test.
- ~~e.g.~~ Air locks shall be tested and demonstrated OPERABLE per Surveillance requirement 4.6.1.3.
- ~~f.h.~~ The provisions of Specification 4.0.2 are not applicable.

~~*Testing for the first cycle of operation shall be done during the first refueling outage.~~

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 Part 100 during accident conditions.

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, P_a . As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to $0.75 L_a$ or less than or equal to $0.75 L_a$, as applicable during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance requirements for measuring leakage rates are consistent with the requirements of 10 CFR 50, Appendix J and, performed in accordance with the methods and provisions of ANSI N45.4-1972

Secondary containment bypass leakage paths previously, Table 3.6-1, have been incorporated into plant procedure UNT-005-026.

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

*A one time extension of the test interval is allowed for the third Type A test of the first 10 year service period, as required by Surveillance Requirement 4.6.1.2.a and by Section III.D.(a) of Appendix J to 10 CFR Part 50, provided the performance of the Type A test occurs prior to unit restart following Refuel 7.