

CONTAINMENT SYSTEMS

PRIMARY CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Primary containment leakage rates shall be limited to:

- a. An overall integrated leakage rate (Type A test) in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program.
- b. A combined leakage rate in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, for all penetrations and all valves listed in Table 3.6.3-1, except for main steam line isolation valves*, main steam line drain valves* and valves which are hydrostatically leak tested per Table 3.6.3-1, subject to Type B and C tests.
- c. *Less than or equal to 100 scf per hour for any one main steam isolation valve and a combined maximum pathway leakage rate of ≤ 300 scf per hour for all four main steam lines through the isolation valves when tested at P_1 , 22.5 psig.
- d. *Less than or equal to 1.2 scf per hour for any one main steam line drain valve when tested in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program.
- e. A combined leakage rate of less than or equal to 3.3 gpm for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment, when tested at 1.10 P_2 .

APPLICABILITY: When PRIMARY CONTAINMENT INTEGRITY is required per Specification 3.6.1.1.

ACTION:

With:

- a. The measured overall integrated primary containment leakage rate (Type A test) not in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, or
- b. The measured combined leakage rate for all penetrations and all valves listed in Table 3.6.3-1, except for main steam line isolation valves*, main steam line drain valves* and valves which are hydrostatically leak tested per Table 3.6.3-1, subject to Type B and C tests not in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, or
- c. The measured leakage rate exceeding 100 scf per hour for any one main steam isolation valve or a total maximum pathway leakage rate of > 300 scf per hour for all four main steam lines through the isolation valves, or
- d. The measured leak rate exceeding 1.2 scf per hour for any one main steam line drain valve, or
- e. The measured combined leakage rate for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment exceeding 3.3 gpm,

* Exemption to Appendix "J" of 10 CFR 50.

~~Deletion of the MCP Leakage Control System was approved in Amendment No. 151 and implemented during the U1 BRIG.~~

INCLUDING THE LEAKAGE FROM THE MS LINE DRAINS, MPC1 DRAIN LINES, AND RCIC DRAIN LINES WHEN MS LINES ARE TESTED AT ≥ 22.5 PSIG OR P_1 AND THE MS LINE DRAINS, MPC1 DRAIN LINES, AND RCIC DRAIN LINES ARE TESTED AT P_2

25.43 SCFH FOR SECONDARY CONTAINMENT BYPASS LEAKAGE FROM ALL SOURCES DEFINED IN THE LEAKAGE RATE TESTING PROGRAM

CONTAINMENT SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

restore:

- a. The overall integrated leakage rate (Type A test) to be in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, and
- b. The combined leakage rate for all penetrations and all valves listed in Table 3.6.3-1, except for main steam line isolation valves*, main steam line drain valves* and valves which are hydrostatically leak tested per Table 3.6.3-1, subject to Type B and C tests to be in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, and
- c. The leakage rate to less than or equal to 11.5 scf per hour for any main steam isolation valve that exceeds 100 scf per hour, and restore the combined maximum pathway leakage rate to ≤ 300 scf per hour for all four main steam lines through the isolation valves, and
- d. The leakage rate to less than or equal to ~~1.2 scf per hour for any one main steam line drain valve~~, and
- e. The combined leakage rate for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment to less than or equal to 3.3 gpm,

prior to increasing reactor coolant system temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The primary containment leakage rates shall be demonstrated in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, for the following:

- a. Type A Test
- b. Type B and C Tests (including air locks and purge supply and exhaust isolation valves)
- c. Air Locks
- d. Main Steam Line Isolation Valves
- e. Hydrostatically Tested Containment Isolation Valves
- f. Purge Supply and Exhaust Isolation Valves

~~# Deletion of the MSIV Leakage Control System was approved in Amendment No. 151 and implemented during the U1 O-RIO.~~

INCLUDING THE LEAKAGE FROM THE MS LINE DRAINS, HPCI DRAIN LINES, AND RCIC DRAIN LINES WHEN MSIV'S ARE TESTED AT ≥ 22.5 PSIG OR P_a AND THE MS LINE DRAINS, HPCI DRAIN LINES, AND RCIC DRAIN LINES ARE TESTED AT P_a

25.43 scfh FOR SECONDARY CONTAINMENT BYPASS LEAKAGE FROM ALL SOURCES DEFINED IN THE LEAK RATE TESTING PROGRAM

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 PRIMARY 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 accident 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 PRIMARY CONTAINMENT LEAKAGE

The limitations on primary containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the accident analyses at the design basis LOCA maximum peak containment pressure of 45.0 psig, P_0 . As an added conservatism, the measured overall integrated leakage rate (Type A test) is further limited to less than or equal to 0.75 L_0 during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

Operating experience with main steam line isolation valves and main steam line drain valves has indicated that degradation has occasionally occurred in the leak tightness of the valves; therefore the special requirement for testing these valves.

The surveillance testing for measuring leakage rates is consistent with Specification 6.8.5, Primary Containment Leakage Rate Testing Program.

The frequency for performing the Type A tests is consistent with Specification 6.8.5, Primary Containment Leakage Rate Testing Program.

3/4.6.1.3 PRIMARY CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the primary containment air locks are required to meet the restrictions on PRIMARY CONTAINMENT INTEGRITY and Specification 6.8.5, Primary Containment Leakage Rate Testing Program. Only one closed door in each air lock is required to maintain the integrity of the containment.

#3/4.6.1.4 MSIV LEAKAGE CONTROL SYSTEM

THE SECONDARY CONTAINMENT BYPASS LEAKAGE SURVEILLANCE REQUIREMENT ENSURES THAT THE LEAKAGE RATE OF SECONDARY CONTAINMENT BYPASS LEAKAGE PATHS IS LESS THAN THE SPECIFIED LEAKAGE RATE. THIS PROVIDES ASSURANCE THAT THE ASSUMPTIONS IN THE RADIOLOGICAL EVALUATIONS ARE MET.

Deletion of the MSIV Leakage Control System was approved in Amendment No. 151 and implemented during the U1 9 RIO.

PRIMARY CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Primary containment leakage rates shall be limited to:

- a. An overall integrated leakage rate (Type A test) in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program.
- b. A combined leakage rate in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, for all penetrations and all valves listed in Table 3.6.3-1, except for main steam line isolation valves*, main steam line drain valves* and valves which are hydrostatically leak tested per Table 3.6.3-1, subject to Type B and C tests.
- c. *Less than or equal to 100 scf per hour for any one main steam isolation valve and a combined maximum pathway leakage rate of ≤ 300 scf per hour for all four main steam lines through the isolation valves ~~when tested at P₂ 22.5 psig~~
- d. *Less than or equal to ~~1.2 scf per hour for any one main steam line drain valve~~ when tested in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program.
- e. A combined leakage rate of less than or equal to 3.3 gpm for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment, when tested at 1.10 P.

APPLICABILITY: When PRIMARY CONTAINMENT INTEGRITY is required per Specification 3.6.1.1.

ACTION:

With:

- a. The measured overall integrated primary containment leakage rate (Type A test) not in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, or
- b. The measured combined leakage rate for all penetrations and all valves listed in Table 3.6.3-1, except for main steam line isolation valves*, main steam line drain valves* and valves which are hydrostatically leak tested per Table 3.6.3-1, subject to Type B and C tests not in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, or
- c. The measured leakage rate exceeding 100 scf per hour for any one main steam isolation valve or a total maximum pathway leakage rate of > 300 scf per hour for all four main steam lines through the isolation valves, or
- d. The measured leak rate exceeding ~~1.2 scf per hour for any one main steam line drain valve~~ or
- e. The measured combined leakage rate for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment exceeding 3.3 gpm,

* Exemption to Appendix "J" of 10 CFR 50.

INCLUDING THE LEAKAGE FROM THE MS. LINE DRAINS, HPCI DRAIN LINES, AND RCIC DRAIN LINES WHEN MS LINES ARE TESTED AT 22.5 PSIG OR P₂ AND THE MS LINE DRAINS, HPCI DRAIN LINES AND RCIC DRAIN LINES ARE TESTED AT P₂

25.43 SCFH FOR SECONDARY CONTAINMENT BYPASS LEAKAGE FROM ALL SOURCES DEFINED IN THE LEAKAGE RATE TESTING PROGRAM

CONTAINMENT SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

restore:

- a. The overall integrated leakage rate (Type A test) to be in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, and
- b. The combined leakage rate for all penetrations and all valves listed in Table 3.6.3-1, except for main steam line isolation valves*, main steam line drain valves* and valves which are hydrostatically leak tested per Table 3.6.3-1, subject to Type B and C tests to be in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, and
- c. The leakage rate to less than or equal to 11.5 scf per hour for any main steam isolation valve that exceeds 100 scf per hour, and restore the combined maximum pathway leakage rate to ≤ 300 scf per hour for all four main steam lines through the isolation valves, and
- d. The leakage rate to less than or equal to 1.2 scf per hour for any one main steam line drain valve, and
- e. The combined leakage rate for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment to less than or equal to 3.3 gpm,

prior to increasing reactor coolant system temperature above 200°F.

SURVEILLANCE REQUIREMENTS

- 4.6.1.2 The primary containment leakage rates shall be demonstrated in accordance with Specification 6.8.5, Primary Containment Leakage Rate Testing Program, for the following:
- a. Type A Test
 - b. Type B and C Tests (including air locks and purge supply and exhaust isolation valve)
 - c. Air Locks
 - d. Main Steam Line Isolation Valves
 - e. Hydrostatically Tested Containment Isolation Valves
 - f. Purge Supply and Exhaust Isolation Valves

INCLUDING THE LEAKAGE FROM THE MS LINE DRAINS, MACE DRAIN LINES, AND REC DRAIN LINES WHEN MSIV'S ARE TESTED AT ≥ 22.5 PSIG OR P_2 AND THE MS LINE DRAINS, MACE DRAIN LINES, AND REC DRAIN LINES ARE TESTED AT P_2

25.43 scf/h FOR SECONDARY CONTAINMENT BYPASS LEAKAGE FROM ALL SOURCES, DEFINED IN THE LEAK RATE TESTING PROGRAM

3/4.6 CONTAINMENT SYSTEMS

BASES

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 PRIMARY 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 accident 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 PRIMARY CONTAINMENT LEAKAGE

The limitations on primary containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the accident analyses at the design basis LOCA maximum peak containment pressure of 45.0 psig, P_0 . As an added conservatism, the measured overall integrated leakage rate (Type A test) is further limited to less than or equal to $0.75 L_0$ during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

Operating experience with main steam line isolation valves and main steam line drain valves has indicated that degradation has occasionally occurred in the leak tightness of the valves; therefore the special requirement for testing these valves.

The surveillance testing for measuring leakage rates is consistent with Specification 6.8.5, Primary Containment Leakage Rate Testing Program.

The frequency for performing the Type A tests is consistent with Specification 6.8.5, Primary Containment Leakage Rate Testing Program.

3/4.6.1.3 PRIMARY CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the primary containment air locks are required to meet the restrictions on PRIMARY CONTAINMENT INTEGRITY and Specification 6.8.5, Primary Containment Leakage Rate Testing Program. Only one closed door in each air lock is required to maintain the integrity of the containment.

THE SECONDARY CONTAINMENT BYPASS LEAKAGE SURVEILLANCE ENSURES THAT THE LEAKAGE RATE OF SECONDARY CONTAINMENT BYPASS LEAKAGE PATHS IS LESS THAN THE SPECIFIED LEAKAGE RATE. THIS PROVIDES ASSURANCE THAT THE ASSUMPTIONS IN THE RADIOLOGICAL EVALUATIONS ARE MET.