

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 of less than or equal to  $L_a$ , 1.0 percent by weight of the containment air per 24 hours at  $P_a$ , 45.0 psig.
- b. A combined leakage rate of less than or equal to  $0.60 L_a$  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 when pressurized to  $P_a$ , 45.0 psig.
- c. \*Less than or equal to 46 scf per hour for all four main steam lines through the isolation valves when tested at  $P_t$ , 22.5 psig.
- d. *A combined leakage rate of 5.0* Less than or equal to ~~1.2~~ scf per hour for ~~any one main steam line drain valve~~ when tested at  $P_a$ , 45.0 psig. *those Secondary Containment bypass leakage pathways shown in Table 3.6.3-2*
- 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 Pa, 49.5 psig.

APPLICABILITY: When PRIMARY CONTAINMENT INTEGRITY is required per Specification 3.6.1.1

ACTION: *isolation valves serving as Secondary Containment bypass barrier valves as shown in Table 3.6.3-2\**

With:

- a. The measured overall integrated primary containment leakage rate exceeding  $0.75 L_a$ , 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 exceeding  $0.60 L_a$ , or
- c. The measured leakage rate exceeding 46 scf per hour for all four main steam lines through the isolation valves, or
- d. The measured <sup>Combined</sup> leak rate exceeding ~~1.2~~ <sup>5.0</sup> scf per hour for ~~any one main steam line drain valve~~, or
- e. <sup>hydrostatically</sup> The measured combined leakage rate for all containment isolation valves in, ~~hydrostatically~~ tested lines which penetrate the primary containment exceeding 3.3 gpm,

*those Secondary Containment bypass leakage pathways shown in Table 3.6.3-2*

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

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## CONTAINMENT SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued) *isolation valves serving as Secondary Containment bypass barrier valves as shown in Table 3.6.3-2\**

restore:

- a. The overall integrated leakage rate to less than or equal to  $0.75 L_a$ , 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 less than or equal to  $0.60 L_a$ , and
- c. The leakage rate to less than or equal to 46 scf per hour for all four main steam lines through the isolation valves, and
- d. The <sup>combined</sup> leakage rate to less than or equal to  $\frac{5.0}{1.2}$  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.  
*those Secondary Containment bypass leakage pathways shown in Table 3.6.3-2,*

### SURVEILLANCE REQUIREMENTS

4.6.1.2 The primary 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 Overall Integrated Containment Leakage Rate tests shall be conducted at  $40 \pm 10$  month intervals during shutdown at  $P_a$ , 45.0 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  $.75 L_a$ , 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  $.75 L_a$ , a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet  $.75 L_a$ , 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 test by verifying that the difference between the supplemental data and the Type A test data is within  $0.25 L_a$ .
  2. Has 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 equivalent to at least 25 percent of the total measured leakage at  $P_a$ , 45.0 psig.

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

- d. Type B and C tests shall be conducted with gas at  $P_g$ , 45.0 psig,\* at intervals no greater than 24 months except for tests involving:
1. Air locks,
  2. Main steam line isolation valves and ~~main steam line drain valves~~ *isolation valves - serving as Secondary Containment bypass barrier valves as shown in Table 3.6.3-2,*
  3. Containment isolation valves in hydrostatically tested lines which penetrate the primary containment, and
  4. Purge supply and exhaust isolation valves with resilient material seals.
- e. Air locks shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.3.
- f. Main steam line isolation valves and ~~main steam line drain valves~~ *isolation valves serving as Secondary Containment bypass barrier valves as shown in Table 3.6.3-2* shall be leak tested at least once per 18 months.
- g. Containment isolation valves in hydrostatically tested lines which penetrate the primary containment shall be leak tested at least once per 18 months.
- h. Purge supply and exhaust isolation valves with resilient material seals shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.8.2.
- i. The provisions of Specification 4.0.2 are not applicable to ~~24 month or 40 + 10 month surveillance intervals.~~  
*Specifications 4.6.1.2.a, 4.6.1.2.b, 4.6.1.2.c, 4.6.1.2.d, and 4.6.1.2.e.*

\*Unless a hydraulic test is required per Table 3.6.3-1.

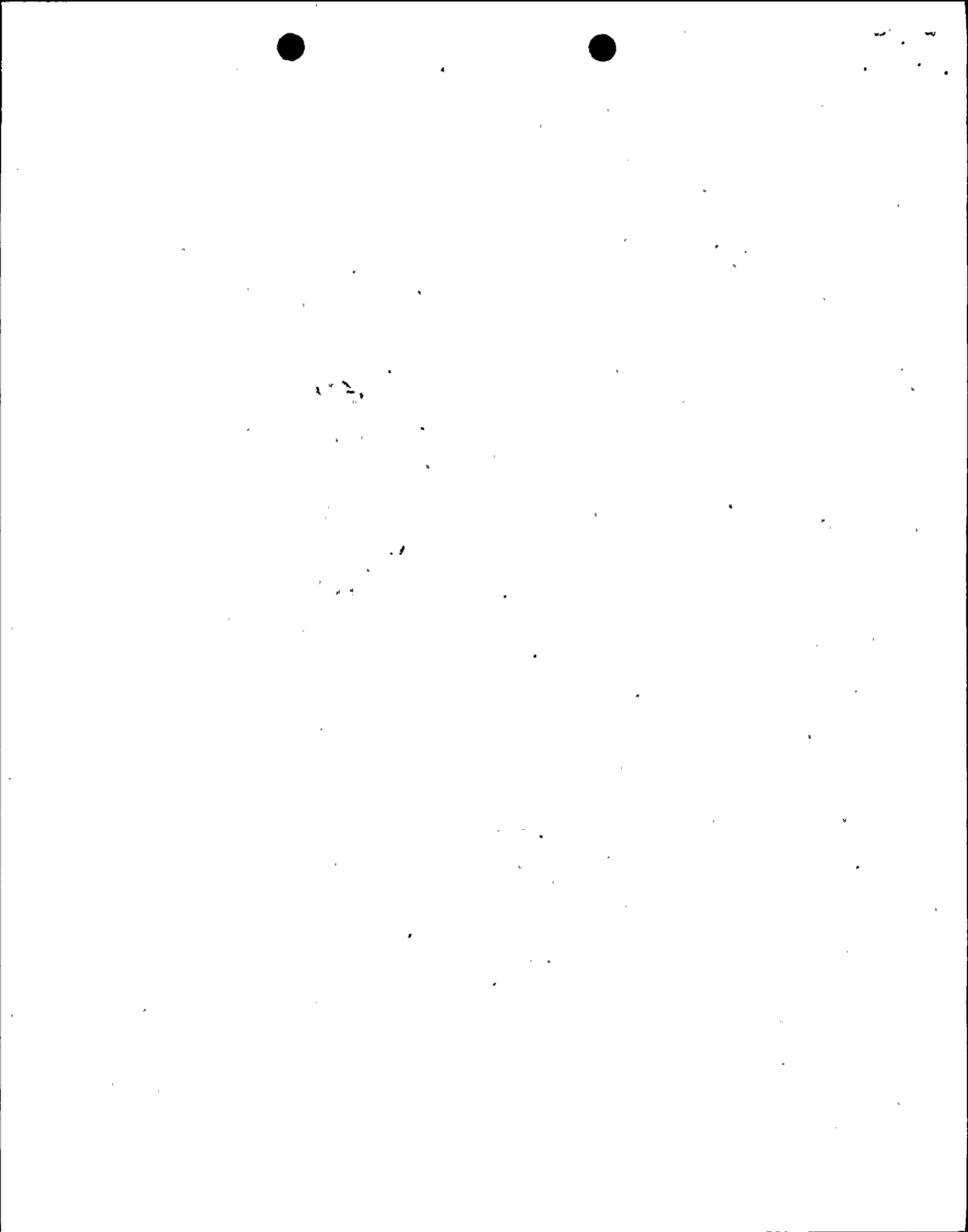
Table 3.6.3-2

SECONDARY CONTAINMENT BYPASS LEAKAGE PATHWAYS

<u>Pathway</u> (b)	<u>Secondary Containment Bypass Barrier Valves</u>
1. Main Steam Line Drain	HV-141 F016 (a) HV-141 F019 (a)
2. Feedwater	HV-141 F032 A (a), B (a) HV-14107 A, B HV-141 F010 A (a), B (a)

(a) Primary Containment isolation valves, leakage rate exempted from combined leakage rate limit of  $0.60 L_a$ .

(b) Pathway leakage is considered to be the net leakage through the pathway assuming a single failure of one of the listed valves.



## CONTAINMENT SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued) *Isolation valves serving as Secondary Containment bypass barrier valves as shown in Table 3.6.3-2\**

restore:

- a. The overall integrated leakage rate to less than or equal to  $0.75 L_a$ , 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 less than or equal to  $0.60 L_a$ , and
- c. The leakage rate to less than or equal to 46 scf per hour for all four main steam lines through the isolation valves, and
- d. The <sup>Combined</sup> leakage rate to less than or equal to <sup>5.0</sup>~~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.  
*those Secondary Containment bypass leakage pathways shown in Table 3.6.3-2,*

### SURVEILLANCE REQUIREMENTS

4.6.1.2 The primary 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 Overall Integrated Containment Leakage Rate tests shall be conducted at  $40 \pm 10$  month intervals during shutdown at  $P_a$ , 45.0 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  $.75 L_a$ , 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  $.75 L_a$ , a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet  $.75 L_a$ , 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 test by verifying that the difference between the supplemental data and the Type A test data is within  $0.25 L_a$ .
  2. Has 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 equivalent to at least 25 percent of the total measured leakage at  $P_a$ , 45.0 psig.

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

- d. Type B and C tests shall be conducted with gas at  $P_a$ , 45.0 psig,\* at intervals no greater than 24 months except for tests involving:
1. Air locks,
  2. Main steam line isolation valves and ~~main steam line drain valves~~, isolation valves serving as Secondary Containment bypass barrier valves as shown in Table 3.6.3-2,
  3. Containment isolation valves in hydrostatically tested lines which penetrate the primary containment, and
  4. Purge supply and exhaust isolation valves with resilient material seals.
- e. Air locks shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.3.
- f. Main steam line isolation valves and ~~main steam line drain valves~~ shall be leak tested at least once per 18 months. *isolation valves serving as Secondary Containment bypass barrier valves as shown in Table 3.6.3-2*
- g. Containment isolation valves in hydrostatically tested lines which penetrate the primary containment shall be leak tested at least once per 18 months.
- h. Purge supply and exhaust isolation valves with resilient material seals shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.8.2.
- i. The provisions of Specification 4.0.2 are not applicable to Specifications 4.6.1.2.a, 4.6.1.2.b, 4.6.1.2.c, 4.6.1.2d and 4.6.1.2e.

\*Unless a hydraulic test is required per Table 3.6.3-1.



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 of less than or equal to  $L_a$ , 1.0 percent by weight of the containment air per 24 hours at  $P_a$ , 45.0 psig.
- b. A combined leakage rate of less than or equal to  $0.60 L_a$  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 when pressurized to  $P_a$ , 45.0 psig.
- c. \*Less than or equal to 46 scf per hour for all four main steam lines through the isolation valves when tested at  $P_t$ , 22.5 psig.
- d. *A Combined leakage rate of 5.0* Less than or equal to 1.2 scf per hour for ~~any one main steam line drain valve~~ when tested at  $P_a$ , 45.0 psig. *those Secondary Containment bypass leakage pathways shown in Table 3.6.3-2*
- 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 Pa, 49.5 psig.

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

ACTION:

*isolation valves serving as Secondary Containment bypass barrier valves as shown in Table 3.6.3-2\**

With:

- a. The measured overall integrated primary containment leakage rate exceeding  $0.75 L_a$ , 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 exceeding  $0.60 L_a$ , or
- c. The measured leakage rate exceeding 46 scf per hour for all four main steam lines through the isolation valves, or
- d. The measured <sup>combined</sup> leak rate exceeding 5.0 ~~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,

*those Secondary Containment bypass leakage pathways shown in Table 3.6.3-2*

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



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