

### 3/4.6 CONTAINMENT SYSTEMS

#### 3/4.6.1 PRIMARY CONTAINMENT

##### 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.  ~~$\leq L_1$  (346,000 SCCM), 0.20 percent by weight of the containment air per 24 hours at  $P_a$ , 50 psig, or~~
2.  ~~$\leq L_2$  (61,600 SCCM), 0.058 percent by weight of the containment air per 24 hours at a reduced pressure of  $P_r$ , 25 psig.~~

REPLACE WITH  
INSERT A

b. A combined leakage rate of  $\leq 0.50 L_1$  (173,000 SCCM), for all penetrations and valves subject to Type B and C tests when pressurized to  $P_a$ .

APPLICABILITY: MODES 1, 2, 3 and 4.

the acceptance criteria specified in the  
Containment Leakage Rate Testing Program,

ACTION: With either (a) the measured overall integrated containment leakage rate exceeding  ~~$0.75 L_1$  (259,500 SCCM) or  $0.75 L_2$  (46,200 SCCM)~~, as applicable, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding  $0.50 L_1$ , restore the overall integrated containment leakage rate to ~~less than or equal to  $0.75 L_1$  or less than or equal to  $0.75 L_2$ , 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  $0.50 L_1$ , prior to increasing the Reactor Coolant System temperature above 200°F.

within the acceptance criteria specified in the Containment Leakage Rate Testing Program,

#### 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, methods and provisions specified in 10 CFR Part 50, Appendix J:

a. ~~Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at approximately equal intervals during shutdown at either  $P_a$  (50 psig) or at  $P_r$  (25 psig) during each 10-year service period.~~

Perform required visual examinations and Type A testing in accordance with the Containment Leakage Rate Testing Program.

**INSERT A**

- a. A maximum allowable containment leakage rate,  $L_a$ , as specified in the Specification 6.19, "Containment Leakage Rate Testing Program."

3/4.6 CONTAINMENT SYSTEMS

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SURVEILLANCE REQUIREMENTS (Continued)

- b. If any periodic Type A test fails to meet either  $0.75 L_a$  (259,500 SCCM) or  $0.75 L_t$  (46,200 SCCM), 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  $0.75 L_a$  (259,500 SCCM) or  $0.75 L_t$  (46,200 SCCM), a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet either  $0.75 L_a$  (259,500 SCCM) or  $0.75 L_t$  (46,200 SCCM) 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  $0.25 L_a$  (86,500 SCCM) or  $0.25 L_t$  (15,400 SCCM).
  2. Has a duration sufficient to establish accurately the change in leakage between the Type A test and 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 rate at  $P_a$  (50 psig) or  $P_t$  (25 psig).

b. ~~☒~~ Type B and C tests shall be conducted with gas at  $P_a$  (50 psig) at intervals of 24 months except for tests involving air locks.

c. ~~☒~~ Air locks shall be tested and demonstrated **OPERABLE** per Surveillance Requirement 4.6.1.3.

d. ~~☒~~ All <sup>Type B and C</sup> 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.

e. ~~☒~~ Containment purge isolation valves shall be demonstrated **OPERABLE** any time upon entering **MODE 5** from power operation modes, unless the last surveillance test has been performed within the past 6 months or any time after being opened and prior to entering **MODE 4** from shutdown modes by verifying that when the measured

\* Exemption to 10 CFR Part 50, Appendix J.

### 3/4.6 CONTAINMENT SYSTEMS

#### SURVEILLANCE REQUIREMENTS (Continued)

leakage rate is added to the leakage rates determined pursuant to Technical Specification 4.6.1.2~~g~~<sup>b</sup> for all other Type B or C penetrations, the combined leakage rate is less than or equal to 0.50 L (173,000 SCCM). The leakage rate for the containment purge isolation valves shall also be compared to the previously measured leakage rate to detect excessive valve degradation.

f. The containment purge isolation valve seals shall be replaced with new seals at a frequency to ensure no individual seal remains in service greater than 2 consecutive fuel reload cycles.

### 3/4.6 CONTAINMENT SYSTEMS

#### SURVEILLANCE REQUIREMENTS (Continued)

4.6.1.6.2 End Anchorages and Adjacent Concrete Surfaces. The structural integrity of the end anchorages and adjacent concrete surfaces shall be demonstrated by determining through inspection of a representative sample of tendons (reference Specification 4.6.1.6.1) that no apparent changes have occurred in the visual appearance of the end anchorages or their adjacent concrete exterior surfaces. Also, inspections of the pre-selected concrete crack patterns adjacent to end anchorages shall be performed during the Type A containment leakage rate tests (reference Specification 4.6.1.2) while the containment is at its maximum test pressure.

4.6.1.6.3 Containment Surfaces. The exposed accessible interior and exterior surfaces of the containment, including the liner plate shall be visually inspected during the shutdown for each Type A containment leakage rate test (reference Specification 4.6.1.2). This inspection shall be performed prior to the Type A containment leakage rate test to uncover any evidence of structural deterioration which may affect either the containment structural integrity or leak tightness.

4.6.1.6.4 Reports. Any abnormal degradation of the containment structure detected during the above required tests and inspections shall be reported to the Commission pursuant to Specification 6.9.2 within the next 30 days. This report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective actions taken.

*in accordance with the Containment Leakage Rate Testing Program (reference Specification 4.6.1.2).*

## 6.0 ADMINISTRATIVE CONTROLS

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### 6.17.2 Licensee initiated changes to the ODCM:

- a. Shall be submitted to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the change(s) was made effective. This submittal shall contain:
  1. Sufficient information to support the rationale for the change. Information submitted should consist of a package of those pages of the ODCM to be changed with each page numbered and provided with a change number and/or change date together with appropriate analyses or evaluations justifying the change(s);
  2. A determination that the change will not reduce the accuracy or reliability of dose calculations or setpoint determinations; and
  3. Documentation of the fact that the change has been reviewed and found acceptable by the POSRC.
- b. Shall become effective upon review by the POSRC and approval of the Plant General Manager.

### 6.18 MAJOR CHANGES TO RADIOACTIVE LIQUID, GASEOUS AND SOLID WASTE TREATMENT SYSTEMS

6.18.1 Licensee initiated major changes to the Radioactive Waste Systems (liquid, gaseous and solid) shall be reported to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the modification to the waste system is completed. The discussion of each change shall contain:

- a. A description of the equipment, components and processes involved.
- b. Documentation of the fact that the change including the safety analysis was reviewed and found acceptable by the POSRC.

INSERT B

(NOTE: This Specification will be renumbered 6.5.6 following approval of BGE's Administrative Controls License Amendment Request, dated March 15, 1995. Other references to Specification 6.19 will also be changed to 6.5.6 following approval of that License Amendment Request.)

### INSERT B

#### 6.19 Containment Leakage Rate Testing Program

A program shall be established to implement the leakage testing of the containment as required by 10 CFR 50.54 (o) and 10 CFR Part 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, as modified by approved exceptions.

The peak calculated containment internal pressure for the design basis loss-of-coolant accident,  $P_a$ , is 49.4 psig. The containment design pressure is 50 psig.

The maximum allowable containment leakage rate,  $L_a$ , shall be 0.20 percent of containment air weight per day at  $P_a$ .

Containment leakage rate acceptance criterion is  $\leq 1.0 L_a$ . During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria is  $\leq 0.75 L_a$  for Type A tests.

The provisions of Specification 4.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of Specification 4.0.3 are applicable to the Containment Leakage Rate Testing Program.

## 3/4.6 CONTAINMENT SYSTEMS

### BASES

#### 3/4.6.1 PRIMARY CONTAINMENT

##### 3/4.6.1.1 CONTAINMENT INTEGRITY

In **MODES 1, 2, 3, and 4**, 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. In **MODES 5 and 6**, the probability and consequences of these events are reduced because of the Reactor Coolant System (RCS) pressure and temperature limitations of these modes, by preventing operations which could lead to a need for containment isolation, and by providing containment isolation through penetration closure.

##### 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 accident analyses at the peak accident pressure,  $P_a$ . As an added conservatism, the measured overall integrated leakage rate is further limited to  $\leq 0.75 L_a$  or  $\leq L_a$  (as applicable) during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates are consistent with the requirements of 10 CFR Part 50, Appendix J, except for the performance of Type B and C leakage testing. The allowable leakage rate has been proportionately reduced, as recommended in Generic Letter 91-04, to account for an extended surveillance schedule of 24 months + 25% (per Specification 4.0.2). This is an exception from 10 CFR Part 50, Appendix J.

REPLACE WITH INSERT C

##### 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.



## INSERT C

### 3/4.6.1.2 Containment Leakage

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program for Type A tests, and 10 CFR Part 50, Appendix J, Option A for Type B and C tests. As-left leakage prior to the first startup after performing a required leakage test is required to be  $\leq 0.75 L_a$  for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of  $\leq 1.0 L_a$ . At  $\leq 1.0 L_a$  the offsite dose consequences are bounded by the assumptions of the safety analysis. The frequency of Type A testing is specified in the Containment Leakage Rate Testing Program.

The surveillance testing for measuring leakage rates are consistent with the requirements of 10 CFR Part 50, Appendix J, Option B for Type A tests. For Type B and C testing, the allowable leakage rate has been proportionately reduced, as recommended in Generic Letter 91-04, to account for an extended surveillance schedule of 24 months + 25% (per Specification 4.0.2). This is an exception from 10 CFR Part 50, Appendix J.

## 3/4.6 CONTAINMENT SYSTEMS

### BASES

#### 3/4.6.1.4 Internal Pressure

The limitations on containment internal pressure ensure that 1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the outside atmosphere of 3.0 psig and 2) the containment peak pressure does not exceed the design pressure of 50 psig during LOCA or steam line break conditions.

The maximum peak pressure expected to be obtained from a LOCA event is 47.6 psig assuming an initial containment pressure of 14.7 psia. The limit of 1.8 psig for initial positive containment pressure will limit the total pressure to 49.4 psig which is less than the design pressure and is consistent with the accident analyses. The maximum peak pressure expected to be obtained from a steam line break event is 49.2 psig assuming an initial containment pressure of 16.5 psia (1.8 psig).

#### 3/4.6.1.5 Air Temperature

The limitation on containment average air temperature ensures that the containment peak air temperature does not exceed the design temperature of 276°F during LOCA conditions. The containment temperature limit is consistent with the accident analyses.

#### 3/4.6.1.6 Containment Structural Integrity

The limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 47.6 psig in the event of a LOCA. The measurement of containment tendon lift off force, the visual and metallurgical examination of tendons, anchorages and liner and the Type A leakage tests are sufficient to demonstrate this capability.

The surveillance requirements for demonstrating the containment's structural integrity are consistent with the intent of the recommendations of Regulatory Guide 1.35 "Inservice Surveillance of UngROUTED Tendons in Prestressed Concrete Containment Structures", January 1976.

The end anchorage concrete exterior surfaces are checked visually for indications of abnormal material behavior during tendon surveillance. Inspections of pre-selected concrete crack patterns are performed during the Type A containment leakage rate tests, consistent with the Structural Integrity Test.

*ADD → Visual inspections of the accessible interior and exterior surfaces of the containment are performed to allow for early uncovering of evidence of structural deterioration. The frequency of these inspections is in agreement with Regulatory Guide 1.163, dated September 1995.*

ATTACHMENT (4)

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UNIT 2

MARKED-UP TECHNICAL SPECIFICATION

PAGES

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### 3/4.6 CONTAINMENT SYSTEMS

#### 3/4.6.1 PRIMARY CONTAINMENT

##### 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.  $\leq L_1$  (346,000 SCCM), 0.20 percent by weight of the containment air per 24 hours at  $P_1$ , 50 psig, or~~
- ~~2.  $\leq L_2$  (44,600 SCCM), 0.042 percent by weight of the containment air per 24 hours at a reduced pressure of  $P_1$ , 25 psig.~~

REPLACE WITH  
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b. A combined leakage rate of  $\leq 0.50 L_1$  (173,000 SCCM), for all penetrations and valves subject to Type B and C tests when pressurized to  $P_1$ .

APPLICABILITY: MODES 1, 2, 3 and 4.

the acceptance criteria specified in the  
Containment Leakage Rate Testing Program,

ACTION: With either (a) the measured overall integrated containment leakage rate exceeding  $0.75 L_1$  (259,500 SCCM), or  $0.75 L_2$  (33,400 SCCM), as applicable, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding  $0.50 L_1$ , restore the overall integrated containment leakage rate to less than or equal to  $0.75 L_1$  or less than or equal to  $0.75 L_2$ , 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  $0.50 L_1$  prior to increasing the Reactor Coolant System temperature above 200°F.

Within the acceptance criteria specified in the  
Containment Leakage Rate Testing Program,

#### 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, methods and provisions specified in 10 CFR Part 50, Appendix J:

- a. Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted during shutdown at either  $P_1$  (50 psig) or at  $P_2$  (25 psig). The frequency of the Type A tests shall be in accordance with 10 CFR Part 50, Appendix J, as modified by approved exemptions.

Perform required visual examinations and Type A testing in accordance with the Containment Leakage Rate Testing Program.

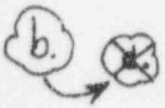



**INSERT A**

- a. A maximum allowable containment leakage rate,  $L_a$ , as specified in the Specification 6.19, "Containment Leakage Rate Testing Program."

### 3/4.6 CONTAINMENT SYSTEMS

#### SURVEILLANCE REQUIREMENTS (Continued)

- b. If any periodic Type A test fails to meet either  $0.75 L_1$  (259,500 SCCM) or  $0.75 L_2$  (33,400 SCCM), 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  $0.75 L_1$  (259,500 SCCM) or  $0.75 L_2$  (33,400 SCCM), a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet either  $0.75 L_1$  (259,500 SCCM) or  $0.75 L_2$  (33,400 SCCM) 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  $0.25 L_1$  (86,500 SCCM) or  $0.25 L_2$  (11,100 SCCM).
  2. Has a duration sufficient to establish accurately the change in leakage between the Type A test and 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 rate at  $P_1$  (50 psig) or  $P_2$  (25 psig).

- b.  Type B and C tests shall be conducted with gas at  $P_1$  (50 psig) at intervals of 24 months except for tests involving air locks.
- c.  Air locks shall be tested and demonstrated **OPERABLE** per Surveillance Requirement 4.6.1.3.
- d.  All <sup>Type B and C</sup> 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.
- e.  Containment purge isolation valves shall be demonstrated **OPERABLE** any time upon entering **MODE 5** from **POWER OPERATION MODES**, unless the last surveillance test has been performed within the past 6 months or any time after being opened and prior to entering **MODE 4** from shutdown modes by verifying that when the measured

\* Exemption to 10 CFR Part 50, Appendix J.

### 3/4.6 CONTAINMENT SYSTEMS

#### SURVEILLANCE REQUIREMENTS (Continued)

leakage rate is added to the leakage rates determined pursuant to Technical Specification 4.6.1.2. <sup>b</sup> For all other Type B or C penetrations, the combined leakage rate is less than or equal to 0.50 L (173,000 SCCM). The leakage rate for the containment purge isolation valves shall also be compared to the previously measured leakage rate to detect excessive valve degradation.

<sup>f</sup> <sup>X</sup> The containment purge isolation valve seals shall be replaced with new seals at a frequency to ensure no individual seal remains in service greater than 2 consecutive fuel reload cycles.

### 3/4.6 CONTAINMENT SYSTEMS

#### SURVEILLANCE REQUIREMENTS (Continued)

4.6.1.6.3 Containment Surfaces. The exposed accessible interior and exterior surfaces of the containment, including the liner plate shall be visually inspected during the shutdown for each Type A containment leakage rate test (reference Specification 4.6.1.2). This inspection shall be performed prior to the Type A containment leakage rate test to uncover any evidence of structural deterioration which may affect either the containment structural integrity or leak tightness.

4.6.1.6.4 Reports. Any abnormal degradation of the containment structure detected during the above required tests and inspections shall be reported to the Commission pursuant to Specification 6.9.2 within the next 30 days. This report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective actions taken.

*in accordance with the Containment Leakage Rate Testing Program (reference Specification 4.6.1.2)*



## 6.0 ADMINISTRATIVE CONTROLS

### 6.17 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.17.1 The ODCM shall be approved by the Commission prior to implementation.

6.17.2 Licensee initiated changes to the ODCM:

- a. Shall be submitted to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the change(s) was made effective. This submittal shall contain:
  1. Sufficient information to support the rationale for the change. Information submitted should consist of a package of those pages of the ODCM to be changed with each page numbered and provided with a change number and/or change date together with appropriate analyses or evaluations justifying the change(s);
  2. A determination that the change will not reduce the accuracy or reliability of dose calculations or setpoint determinations; and
  3. Documentation of the fact that the change has been reviewed and found acceptable by the POSRC.
- b. Shall become effective upon review by the POSRC and approval of the Plant General Manager.

### 6.18 MAJOR CHANGES TO RADIOACTIVE LIQUID, GASEOUS AND SOLID WASTE TREATMENT SYSTEMS

6.18.1 Licensee initiated major changes to the Radioactive Waste Systems (liquid, gaseous and solid) shall be reported to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the modification to the waste system is completed. The discussion of each change shall contain:

- a. A description of the equipment, components and processes involved.
- b. Documentation of the fact that the change including the safety analysis was reviewed and found acceptable by the POSRC.

INSERT B

(NOTE: This Specification will be renumbered 6.5.6 following approval of BGE's Administrative Controls License Amendment Request, dated March 15, 1995. Other references to Specification 6.19 will also be changed to 6.5.6 following approval of that License Amendment Request.)

### INSERT B

#### 6.19 Containment Leakage Rate Testing Program

A program shall be established to implement the leakage testing of the containment as required by 10 CFR 50.54 (o) and 10 CFR Part 50, Appendix J, Option B. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

The peak calculated containment internal pressure for the design basis loss-of-coolant accident,  $P_a$ , is 49.4 psig. The containment design pressure is 50 psig.

The maximum allowable containment leakage rate,  $L_a$ , shall be 0.20 percent of containment air weight per day at  $P_a$ .

Containment leakage rate acceptance criterion is  $\leq 1.0 L_a$ . During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria is  $\leq 0.75 L_a$  for Type A tests.

The provisions of Specification 4.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of Specification 4.0.3 are applicable to the Containment Leakage Rate Testing Program.

## 3/4.6 CONTAINMENT SYSTEMS

### BASES

#### 3/4.6.1 PRIMARY CONTAINMENT

##### 3/4.6.1.1 CONTAINMENT INTEGRITY

In **MODES 1, 2, 3, and 4**, 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. In **MODES 5 and 6**, the probability and consequences of these events are reduced because of the Reactor Coolant System (RCS) pressure and temperature limitations of these modes, by preventing operations which could lead to a need for containment isolation, and by providing containment isolation through penetration closure.

##### ~~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 accident analyses at the peak accident pressure,  $P_a$ . As an added conservatism, the measured overall integrated leakage rate is further limited to  $\leq 0.75 L_a$  or  $\leq 0.75 L_c$  (as applicable) 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, except for the performance of Type B and C leakage testing. The allowable leakage rate has been proportionately reduced, as recommended in Generic Letter 91-04, to account for an extended surveillance schedule of 24 months + 25% (per Specification 4.0.2). This is an exemption to 10 CFR Part 50, Appendix J.~~

##### 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.

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### 3/4.6.1.2 Containment Leakage

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program for Type A tests, and 10 CFR Part 50, Appendix J, Option A for Type B and C tests. As-left leakage prior to the first startup after performing a required leakage test is required to be  $\leq 0.75 L_a$  for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of  $\leq 1.0 L_a$ . At  $\leq 1.0 L_a$  the offsite dose consequences are bounded by the assumptions of the safety analysis. The frequency of Type A testing is specified in the Containment Leakage Rate Testing Program.

The surveillance testing for measuring leakage rates are consistent with the requirements of 10 CFR Part 50, Appendix J, Option B for Type A tests. For Type B and C testing, the allowable leakage rate has been proportionately reduced, as recommended in Generic Letter 91-04, to account for an extended surveillance schedule of 24 months + 25% (per Specification 4.0.2). This is an exception from 10 CFR Part 50, Appendix J.

## 3/4.6 CONTAINMENT SYSTEMS

### BASES

#### 3/4.6.1.4 Internal Pressure

The limitations on containment internal pressure ensure that 1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the outside atmosphere of 3.0 psig and 2) the containment peak pressure does not exceed the design pressure of 50 psig during LOCA or steam line break conditions.

The maximum peak pressure expected to be obtained from a LOCA event is 47.6 psig assuming an initial containment pressure of 14.7 psia. The limit of 1.8 psig for initial positive containment pressure will limit the total pressure to 49.4 psig which is less than the design pressure and is consistent with the accident analyses. The maximum peak pressure expected to be obtained from a steam line break event is 49.2 psig assuming an initial containment pressure of 16.5 psia (1.8 psig).

#### 3/4.6.1.5 Air Temperature

The limitation on containment average air temperature ensures that the containment peak air temperature does not exceed the design temperature of 276°F during LOCA conditions. The containment temperature limit is consistent with the accident analyses.

#### 3/4.6.1.6 Containment Structural Integrity

The limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 47.6 psig in the event of a LOCA. The measurement of containment tendon lift off force, the visual and metallurgical examination of tendons, anchorages and liner and the Type A leakage tests are sufficient to demonstrate this capability.

The surveillance requirements for demonstrating the containment's structural integrity are consistent with the intent of the recommendations of Regulatory Guide 1.35 "Inservice Surveillance of UngROUTED Tendons in Prestressed Concrete Containment Structures", January 1976.

The end anchorage concrete exterior surfaces are checked visually for indications of abnormal material behavior during tendon surveillance. Inspections of pre-selected concrete crack patterns are performed during the Type A containment leakage rate tests, consistent with the Structural Integrity Test.

*Visual inspections of the accessible interior and exterior surfaces of the containment are performed to allow for early uncovering of evidence of structural deterioration. The frequency of these inspections is in agreement with Regulatory Guide 1.163, dated September 1995.*

ADD →