

### 3/4.6 CONTAINMENT SYSTEMS

#### 3/4.6.1 PRIMARY CONTAINMENT

##### CONTAINMENT INTEGRITY

##### LIMITING CONDITION FOR OPERATION

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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

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4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

- a. At least once per 31 days by verifying that 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 as provided in Table 3.6-2 of Specification 3.6.3.
- b. By verifying that each containment air lock is OPERABLE per Specification 3.6.1.3.
- c. After each closing of each penetration subject to Type B testing, except the containment air locks, if opened following a Type A or B test, by leak rate testing the seal with gas at  $P_a$ , 12 psig, and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2.d for all other Type B and C penetrations, the combined leakage rate is less than or equal to  $0.60 L_a$ .

\*Except valves, blind flanges, and deactivated automatic valves which are located inside the annulus or containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

## CONTAINMENT SYSTEMS

### CONTAINMENT LEAKAGE

#### LIMITING CONDITION FOR OPERATION

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3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of less than or equal to  $L_a$ , 0.25 percent by weight of the containment air per 24 hours at  $P_a$ , 12 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  $0.25 L_a$  for all penetrations identified in Table 3.6-1 as secondary containment BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING 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 (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  $0.25 L_a$  for BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING, restore the overall integrated leakage rate to less than or equal to  $0.75 L_a$ , the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than or equal to  $0.60 L_a$ , the combined bypass leakage rate from BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING to less than or equal to  $0.25 L_a$ , prior to increasing the Reactor Coolant System temperature above 200°F.

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS

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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  $40 \pm 10$  month intervals during shutdown at  $P_a$  (12 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  $0.75 L_a$ , 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 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  $P_a$  (12 psig).

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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- d. Type B and C tests shall be conducted with gas at  $P_a$  (12 psig) at intervals no greater than 24 months except for tests involving:
  - 1. Air locks,
  - 2. Penetrations using continuous leakage monitoring systems, and
  - 3. Valves pressurized with fluid from a seal system.
- e. The combined BYPASS LEAKAGE RATE TO THE AUXILIARY BUILDING shall be determined to be less than or equal to  $0.25 L_a$  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  $P_a$  (12 psig) during each Type A test.
- f. Air locks shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.3.
- g. Leakage from isolation valves that are sealed with fluid from a seal system may be excluded, subject to the provisions of Appendix J, Section III.C.3, when determining the combined leakage rate provided the seal system and valves are pressurized to at least  $1.10 P_a$  (13.2 psig) and the seal system capacity is adequate to maintain system pressure (or fluid head for the containment spray system valves at penetrations 48 A and 48 B) for at least 30 days.
- h. Type B tests for penetrations employing a continuous leakage monitoring system shall be conducted at  $P_a$  (12 psig) at intervals no greater than once per 3 years.
- 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  
BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING  
SECONDARY CONTAINMENT BYPASS LEAKAGE PATHS

<u>PENETRATION</u>	<u>DESCRIPTION</u>	<u>RELEASE LOCATION</u>
X-2A	Personnel Lock	Auxiliary Area
X-2B	Personnel Lock	Auxiliary Area
X-3	Fuel Transfer Tube	Auxiliary Area
X-15	Letdown	Auxiliary Area
X-23	Postaccident Sampling, Hot Leg 3	Auxiliary Area
X-25A	Pressurizer Gas Sample	Auxiliary Area
X-25D	Pressurizer Liquid Sample	Auxiliary Area
X-26B	Control Air	Auxiliary Area
X-27C	ILRT	Auxiliary Area
X-29	CCS	Auxiliary Area
X-30	Accumulator Fill	Auxiliary Area
X-34	Control Air	Auxiliary Area
X-35	CCS	Auxiliary Area
X-39A	N <sub>2</sub> to Accumulators	Auxiliary Area
X-39B	N <sub>2</sub> to Pressurizer Relief Tank	Auxiliary Area
X-40D	Hydrogen Purge	Auxiliary Area
X-41	Normal RB Sump	Auxiliary Area
X-42	Primary Water	Auxiliary Area
X-44	RCP Seal Water Injection Return	Auxiliary Area
X-45	RC Drain Tank	Auxiliary Area
X-46	RC Drain Tank	Auxiliary Area
X-47A	Glyco!	Auxiliary Area
X-47B	Glycol	Auxiliary Area
X-50A	CCS	Auxiliary Area
X-50B	CCS	Auxiliary Area
X-51	Fire Protection	Auxiliary Area
X-52	CCS to RCP Oil Cooler	Auxiliary Area
X-56	ERCW	Auxiliary Area
X-57	ERCW	Auxiliary Area
X-58	ERCW	Auxiliary Area
X-59	ERCW	Auxiliary Area
X-60	ERCW	Auxiliary Area
X-61	ERCW	Auxiliary Area
X-62	ERCW	Auxiliary Area
X-63	ERCW	Auxiliary Area



TABLE 3.6-1 (Continued)

BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING  
SECONDARY CONTAINMENT, BYPASS LEAKAGE PATHS

<u>PENETRATION</u>	<u>DESCRIPTION</u>	<u>RELEASE LOCATION</u>
X-64	A/C Chilled Water (ERCW)	Auxiliary Area
X-65	A/C Chilled Water (ERCW)	Auxiliary Area
X-66	A/C Chilled Water (ERCW)	Auxiliary Area
X-67	A/C Chilled Water (ERCW)	Auxiliary Area
X-68	ERCW	Auxiliary Area
X-69	ERCW	Auxiliary Area
X-70	ERCW	Auxiliary Area
X-71	ERCW	Auxiliary Area
X-72	ERCW	Auxiliary Area
X-73	ERCW	Auxiliary Area
X-74	ERCW	Auxiliary Area
X-75	ERCW	Auxiliary Area
X-76	Service Air	Auxiliary Area
X-77	Demineralized Water	Auxiliary Area
X-78	Fire Protection	Auxiliary Area
X-81	RC Drain Tank	Auxiliary Area
X-82	Fuel Pool	Auxiliary Area
X-83	Fuel Pool	Auxiliary Area
X-84A	Pressurizer Relief Tank Gas Sample	Auxiliary Area
X-85A	Excess Letdown Heat Exchanger	Auxiliary Area
X-90	Control Air	Auxiliary Area
X-91	Postaccident Sampling, Hot Leg 1	Auxiliary Area
X-93	Accumulator Sample	Auxiliary Area
X-94ABC	Radiation Sample	Auxiliary Area
X-95ABC	Radiation Sample	Auxiliary Area
X-96C	Hot Leg Sample	Auxiliary Area
X-98	ILRT	Auxiliary Area
X-101	Postaccident Sampling, Containment	Auxiliary Area
X-103	Postaccident Sampling, Liquid Discharge to Containment	Auxiliary Area
X-106	Postaccident Sampling, Air Discharge to Containment	Auxiliary Area
X-108	UHI	Auxiliary Area

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Amendment No. 71

## DEFINITIONS

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### SOLIDIFICATION

1.31 SOLIDIFICATION shall be the conversion of wet radioactive wastes into a form that meets shipping and burial ground requirements.

### SOURCE CHECK

1.32 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

### STAGGERED TEST BASIS

1.33 A STAGGERED TEST BASIS shall consist of:

- a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals,
- b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

### THERMAL POWER

1.34 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

### UNIDENTIFIED LEAKAGE

1.35 UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE or CONTROLLED LEAKAGE.

### UNRESTRICTED AREA

1.36 An UNRESTRICTED AREA shall be any area, at or beyond the site boundary to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the site boundary used for residential quarters or industrial, commercial, institutional, and/or recreational purposes.

## DEFINITIONS

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### VENTILATION EXHAUST TREATMENT SYSTEM

1.37 A VENTILATION EXHAUST TREATMENT SYSTEM is any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal adsorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.

### VENTING

1.38 VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.



## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS

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  2. Penetrations using continuous leakage monitoring systems, and

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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3. Valves pressurized with fluid from a seal system.
  - e. The combined bypass leakage rate to the auxiliary building shall be determined to be less than or equal to  $0.25 L_a$  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  $P_a$ , 12 psig, during each Type A test.
  - f. Air locks shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1 3.
  - g. Leakage from isolation valves that are sealed with fluid from a seal system may be excluded, subject to the provisions of Appendix J, Section III.C.3, when determining the combined leakage rate provided the seal system and valves are pressurized to at least  $1.10 P_a$ , 13.2 psig, and the seal system capacity is adequate to maintain system pressure (or fluid head for the containment spray system valves at penetrations 48A and 48B) for at least 30 days.
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X-23	Postaccident Sampling, Hot Leg 3	Auxiliary Area
X-25A	Pressurizer Gas Sample	Auxiliary Area
X-25D	Pressurizer Liquid Sample	Auxiliary Area
X-26B	Control Air	Auxiliary Area
X-27C	ILRT	Auxiliary Area
X-29	CCS	Auxiliary Area
X-30	Accumulator Fill	Auxiliary Area
X-34	Control Air	Auxiliary Area
X-35	CCS	Auxiliary Area
X-39A	N <sub>2</sub> to Accumulators	Auxiliary Area
X-39B	N <sub>2</sub> to Pressurizer Relief Tank	Auxiliary Area
X-40D	Hydrogen Purge	Auxiliary Area
X-41	Normal RB Sump	Auxiliary Area
X-42	Primary Water	Auxiliary Area
X-44	RCP Seal Water Injection Return	Auxiliary Area
X-45	RC Drain Tank	Auxiliary Area
X-46	RC Drain Tank	Auxiliary Area
X-47A	Glycol	Auxiliary Area
X-47B	Glycol	Auxiliary Area
X-50A	CCS	Auxiliary Area
X-50B	CCS	Auxiliary Area
X-51	Fire Protection	Auxiliary Area
X-52	CCS to RCP Oil Cooler	Auxiliary Area
X-56	ERCW	Auxiliary Area
X-57	ERCW	Auxiliary Area

TABLE 3.6-1 (Continued)

BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING  
SECONDARY CONTAINMENT BYPASS LEAKAGE PATHS

<u>PENETRATION</u>	<u>DESCRIPTION</u>	<u>RELEASE LOCATION</u>
X-58	ERCW	Auxiliary Area
X-59	ERCW	Auxiliary Area
X-60	ERCW	Auxiliary Area
X-61	ERCW	Auxiliary Area
X-62	ERCW	Auxiliary Area
X-63	ERCW	Auxiliary Area
X-64	A/C Chilled Water (ERCW)	Auxiliary Area
X-65	A/C Chilled Water (ERCW)	Auxiliary Area
C-66	A/C Chilled Water (ERCW)	Auxiliary Area
X-67	A/C Chilled Water (ERCW)	Auxiliary Area
X-68	ERCW	Auxiliary Area
X-69	ERCW	Auxiliary Area
X-70	ERCW	Auxiliary Area
X-71	ERCW	Auxiliary Area
X-72	ERCW	Auxiliary Area
X-73	ERCW	Auxiliary Area
X-74	ERCW	Auxiliary Area
X-75	ERCW	Auxiliary Area
X-76	Service Air	Auxiliary Area
X-77	Demineralized Water	Auxiliary Area
X-78	Fire Protection	Auxiliary Area
X-81	RC Drain Tank	Auxiliary Area
X-82	Fuel Pool	Auxiliary Area
X-83	Fuel Pool	Auxiliary Area
X-84A	Pressurizer Relief Tank Gas Sample	Auxiliary Area
X-85A	Excess Letdown Heat Exchanger	Auxiliary Area
X-90	Control Air	Auxiliary Area
X-91	Postaccident Sampling, Hot Leg 1	Auxiliary Area