

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 less than or equal to L_a , 0.437 percent by weight of the containment air per 24 hours at P_a , 11.5 psig.
- b. A combined leakage rate of less than or equal to $0.60 L_a$ for all penetrations and all valves[#] subject to Type B and C tests when pressurized to P_a , 11.5 psig.
- c. Less than or equal to 100 scf per hour for all four main steam lines through the isolation valves when tested at P_a , 11.5 psig.
- d. A combined leakage rate of less than or equal to 1 gpm times the total number of containment isolation valves in hydrostatically tested lines which penetrate the primary containment, when tested at $1.10 P_a$, 12.65 psig.

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

ACTION:

With:

- a. The measured overall integrated containment leakage rate exceeding $0.75 L_a$, or
- b. The measured combined leakage rate for all penetrations and all valves[#] subject to Type B and C tests exceeding $0.60 L_a$, or
- c. The measured leakage rate exceeding 100 scf per hour for all four main steam lines through the isolation valves, or
- d. The measured combined leakage rate for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment exceeding 1 gpm times the total number of such valves,

restore:

- a. The overall integrated leakage rate(s) to less than or equal to $0.75 L_a$, and

[#] Includes all valves listed in Table 3.6.4-1, except for those that are hydrostatically leak tested

or excluded by footnote (b)

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CONTAINMENT SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

- b. The combined leakage rate for all penetrations and all valves[#] 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 100 scf per hour for all four main steam lines through the isolation valves, and
- d. The combined leakage rate for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment to less than or equal to 1 gpm times the total number of such valves, prior to increasing 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 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 + 10 month intervals during shutdown at P_a , 11.5 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 test by verifying that the containment leakage rate, L'_v , calculated in accordance with ANSI N-45.4-1972, Appendix C, is within 25 percent of the containment leakage rate, L_v , measured prior to the introduction of the superimposed leak.
 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 between $0.75 L_a$ and $1.25 L_a$.

[#]Includes all valves listed in Table 3.6.4-1, except for those that are hydrostatically leak tested.

or excluded by footnote (b).

TABLE 3.6.4-1
CONTAINMENT AND DRYWELL ISOLATION VALVES

<u>SYSTEM AND VALVE NUMBER</u>	<u>PENETRATION NUMBER</u>	<u>VALVE GROUP</u> ^(a)	<u>MAXIMUM ISOLATION TIME (Seconds)</u>	
1. Automatic Isolation Valves[#]				
a. Containment:				
Main Steam Lines	B21-F028A	5(O)*	1	5
Main Steam Lines	B21-F022A	5(I)*	1	5
Main Steam Lines	B21-F067A-A	5(O)*	1	9
Main Steam Lines	B21-F028B	6(O)*	1	5
Main Steam Lines	B21-F022B	6(I)*	1	5
Main Steam Lines	B21-F067B-A	6(O)*	1	9
Main Steam Lines	B21-F028C	7(O)*	1	5
Main Steam Lines	B21-F022C	7(I)*	1	5
Main Steam Lines	B21-F067C-A	7(O)*	1	9
Main Steam Lines	B21-F028D	8(O)*	1	5
Main Steam Lines	B21-F022D	8(I)*	1	5
Main Steam Lines	B21-F067D-A	8(O)*	1	9
RHR Reactor Shutdown Cooling Suction	E12-F008-A	14(O)	3	40
RHR Reactor Shutdown Cooling Suction	E12-F009-B	14(I)	3	40
Steam Supply to RHR and RCIC Turbine	E51-F063-B	17(I)	4	20
Steam Supply to RHR and RCIC Turbine	E51-F064-A	17(O)	4	20
Steam Supply to RHR and RCIC Turbine	E51-F076-B	17(I)	4	20
RHR to Head Spray	E12-F023-A	18(O)	3	94
RHR to Head Spray	E12-F394-B	18(I)	3	43

(a) See Specification 3.3.2, Table 3.3.2-1, for isolation signal(s) that operates each valve group.

(b) Deleted

INSERT

(c) Hydrostatically tested with water to 1.10 P₂, 12.65 psig.

(d) Hydrostatically tested by pressurizing system to 1.10 P₂, 12.65 psig.

(e) Hydrostatically tested during system functional tests.

(f) Deleted

(g) Normally closed or locked closed manual valves may be opened on an intermittent basis under administrative control.

*The provisions of Specification 4.0.4 are not applicable for entry into OPERATIONAL CONDITIONS 2 or 3 provided the surveillance is performed within 12 hours after reaching a reactor steam pressure of 600 psig and prior to entry into OPERATIONAL CONDITION 1.

[#]The "-A, -B, -C, -(A), -(B), -(C)" designators on the valve numbers indicate associated electrical divisions.

INSERT

Type C testing is not required. Leak tight integrity surveillance is under administrative control.

TABLE 3.6.4-1 (Continued)

CONTAINMENT AND DRYWELL ISOLATION VALVES

<u>SYSTEM AND VALVE NUMBER</u>		<u>PENETRATION NUMBER</u>
b. Drywell		
Cont. Cooling Water Inlet	P42-F114-B	329(O)
Cont. Cooling Water Outlet	P42-F116-A	330(I)
Cont. Cooling Water Outlet	P42-F117-B	330(O)
3. <u>Other Isolation Valves</u> (g)#		
a. <u>Containment</u>		
Fuel Transfer Tube	F11-E015	4(I)
Feedwater Inlet	B21-F010A	9(I)
Feedwater Inlet	B21-F032A	9(O)
Feedwater Inlet	B21-F010B	10(I)
Feedwater Inlet	B21-F032B	10(O) (d)
RHR "A" Suction	E12-F017A	11(O) (d)
RHR "B" Suction	E12-F017B	12(O) (d)
RHR "C" Suction	E12-F017C	13(O) (d)
RHR Shutdown Cooling Suction	E12-F308	14(I)
RHR Heat Ex. "A" to LPCI	E12-F044A	20(I)
RHR Heat Ex. "A" to LPCI	E12-F025A	20(I)
RHR Heat Ex. "A" to LPCI	E12-F107A	20(I)
RHR Heat Ex. "B" to LPCI	E12-F025B	21(I)
RHR Heat Ex. "B" to LPCI	E12-F044B	21(I)
RHR Heat Ex. "B" to LPCI	E12-F107B	21(I)
RHR Heat Ex. "C" to LPCI	E12-F234	22(O)
RHR Pump "C" to LPCI	E12-F041C-B	22(I)
RHi. Pump "A" Test Line to Suppr. Pool	E12-F259	23(O) <i>feja</i>
RHR Pump "A" Test Line to Suppr. Pool	E12-F261	23(O) <i>feja</i>

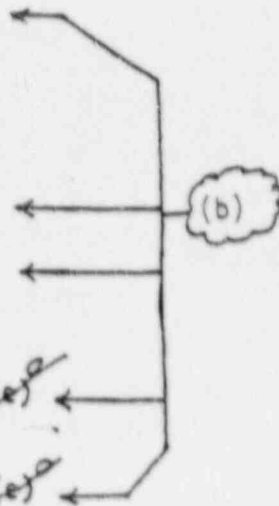


TABLE 3.6.4-1 (Continued)

CONTAINMENT AND DRYWELL ISOLATION VALVES

<u>SYSTEM AND VALVE NUMBER</u>	<u>PENETRATION NUMBER</u>
<u>Containment (Continued)</u>	
RHR Pump "A" Test Line to Suppr. Pool E12-F227	23(0) <i>(e)</i>
RHR Pump "A" Test Line to Suppr. Pool E12-F262	23(0) <i>(e)</i>
RHR Pump "A" Test Line to Suppr. Pool E12-F228	23(0) <i>(e)</i>
RHR "A" Test Line to Suppr. Pool E12-F290A-A	23(0) (d)
RHR Pump "A" Test Line to Suppr. Pool E12-F338	23(0) <i>(e)</i>
RHR Pump "A" Test Line to Suppr. Pool E12-F339	23(0) <i>(e)</i>
RHR Pump "A" Test Line to Suppr. Pool E12-F260	23(0) <i>(e)</i>
RHR Pump "C" Test Line to Suppr. Pool E12-F280	24(0) <i>(e)</i>
RHR Pump "C" Test Line to Suppr. Pool E12-F281	24(0) <i>(e)</i>
HPCS Suction E22-F014	25(0) (d)
HPCS Discharge E22-F005-(C)	26(I)
HPCS Discharge E22-F218	26(I)
HPCS Discharge E22-F201	26(I)
HPCS Test Line E22-F035	27(0) (d)
HPCS Test Line E22-F302	27(0) <i>(e)</i>
HPCS Test Line E22-F301	27(0) <i>(e)</i>
LPCS Pump Suction E21-F031	30(0) (d)
LPCS Discharge E21-F006-(A)	31(I)
LPCS Discharge E21-F200	31(I)
LPCS Discharge E21-F207	31(I)
LPCS Test Line E21-F217	32(0) <i>(e)</i>
LPCS Test Line E21-F218	32(0) <i>(e)</i>
CRD Pump Discharge C11-F122	33(I)
DCW Supply P72-F165	37(I)
Plant Chilled Water Supply P71-F151	38(I)
Service Air Supply P52-F122	41(I)

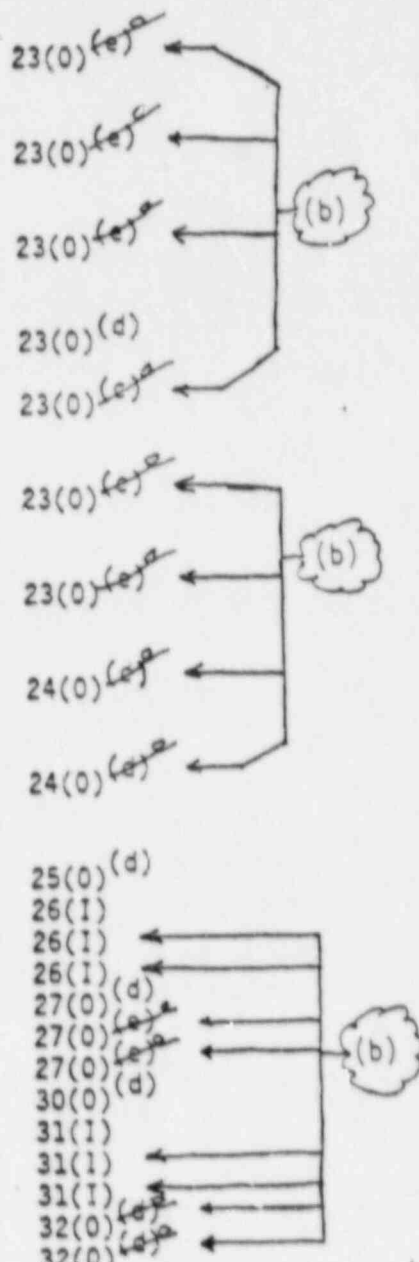


TABLE 3.6.4-1 (Continued)

CONTAINMENT AND DRYWELL ISOLATION VALVES

<u>SYSTEM AND VALVE NUMBER</u>	<u>PENETRATION NUMBER</u>
<u>Containment (Continued)</u>	
Instr. Air Supply P53-F002	42(I)
CCW Supply P42-F035	44(I)
RCIC Disch. E51-F251	46(O) (e)
Min. Flow	
RCIC Disch. E51-F252	46(O) (e)
Min. Flow	
RHR Heat Ex. "B" E12-F055B	48(U) (d)
Relief Vent Header	
RHR Heat Ex. "B" E12-F103B	48(O) (d)
Relief Vent Header	
RHR Heat Ex. "B" E12-F104B	48(O) (d)
Relief Vent Header	
Refueling Wtr. G41-F053	54(O)
-Stg. Tk. to Upper Ctmt. Pool	
Refueling Wtr. G41-F201	54(I)
Stg. Tk. to Upper Ctmt. Pool	
Condensate Supply P11-F004	56(I)
FPC & CU to Upper Cont. Pool G41-F040	57(I)
Stby. Liquid Control Sys. C41-F151	61(I)
Mix. Tk. (future use)	
Stby. Liquid Control Sys. C41-F150	61(O)
Mix. Tk. (future use)	
RHR Pump "B" Test E12-F276	67(O) (e)
Line	
RHR Pump "B" Test E12-F277	67(O) (e)
Line	
RHR Pump "B" Test E12-F212	67(O) (e)
Line	
RHR Pump "B" Test E12-F213	67(O) (e)
Line	
RHR Pump "B" Test E12-F249	67(O) (e)
Line	
RHR Pump "B" Test E12-F250	67(O) (e)
Line	
RHR Pump "B" Test E12-F334	67(O) (e)
Line	

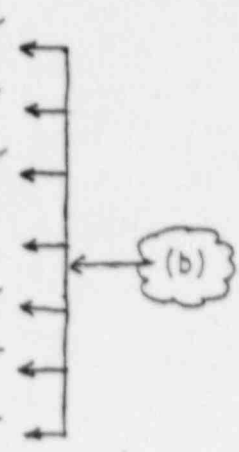


TABLE 3.6.4-1 (Continued)
CONTAINMENT AND DRYWELL ISOLATION VALVES

<u>SYSTEM AND VALVE NUMBER</u>		<u>PENETRATION NUMBER</u>
<u>Containment (Continued)</u>		
RHR Pump "B" Test Line	E12-F335	67(0) ^(c) ← (b)
RHR "B" Test Line To Suppr. Pool	F12-F2908-B	67(0) ^(d)
Inst. Air to ADS	P53-F006	70(1)
LPCS Relief Valve	E21-F018	71A(0) ^(d)
Vent Header		
RHR Pump "C" Relief Valve	E12-F025C	71B(0) ^(d)
Vent Header		
RHR "C" Relief Valve Vent Hd: to Suppr. Pool & Post-Acc.	E12-F406	71B(1) ^(c)
Sample Return		
RHR Shutdown Vent Header	E12-F036	73(0)
RHR Shutdown Suction Relief Valve Disch.	E12-F005	76B(0)
RHR Heat Ex. "A" Relief Vent Header	E12-F055A	77(0) ^(d)
RHR Heat Ex. "A" Relief Vent Header	E12-F103A	77(0) ^(d)
RHR Heat Ex. "A" Relief Vent Header	E12-F104A	77(0) ^(d)
SSW "A" Supply	P41-F169A	89(1) ^(c)
SSW "B" Supply	P41-F169B	92(1) ^(c)
Ctmt. Leak Rate Test Inst.	M61-F015	110A(1) ← (b)
Ctmt. Leak Rate Test Inst.	M61-F014	110A(0) ← (b)
Ctmt. Leak Rate Test Inst.	M61-F019	110C(1) ← (b)
Ctmt. Leak Rate Test Inst.	M61-F018	110C(0) ← (b)
Ctmt. Leak Rate Test Inst.	M61-F017	110F(1) ← (b)
Ctmt. Leak Rate Test Inst.	M61-F016	110F(0) ← (b)
<u>b. Drywell</u>		
LPCI "A"	E12-F041A	313(1)
LPCI "B"	E12-F041B	314(1)
LPCI "B"	E12-F236	314(0)
CRD to Recirc. Pump A Seals	B33-F013A	326(1)

TABLE 3.6.4-1 (Continued)
CONTAINMENT AND DRYWELL ISOLATION VALVES

<u>SYSTEM AND VALVE NUMBER</u>		<u>PENETRATION NUMBER</u>
4. <u>Test Connections</u> (g)		
a. <u>Containment</u> (b)		
Main Steam T/C	B21-F025A	5(0)
Main Steam T/C	B21-F025B	6(0)
Main Steam T/C	B21-F025C	7(0)
Main Steam T/C	B21-F025D	8(0)
Feedwater T/C	B21-F030A	9(0)
Feedwater T/C	B21-F063A	9(0)
Feedwater T/C	B21-F063B	10(0)
Feedwater T/C	B21-F030B	10(0)
RHR Shutdown Cool. Suction T/C	E12-F002	14(0)
RCIC Steam Line T/C	E51-F072	17(0)
RHR to Head Spray T/C	E12-F342	18(0)
RHR to Head Spray T/C	E12-F061	18(0)
LPCI "C" T/C	E12-F056C	22(0)
RHR "A" Pump Test Line T/C	E12-F322	23(0) <i>foya</i>
RHR "A" Pump Test Line T/C	E12-F336	23(0) <i>foya</i>
RHR "A" Pump Test Line T/C	E12-F349	23(0) <i>foya</i>
RHR "A" Pump Test Line T/C	E12-F303	23(0) <i>foya</i>
RHR "A" Pump Test Line T/C	E12-F310	23(0) <i>foya</i>
RHR "A" Pump Test Line T/C	E12-F348	23(0) <i>foya</i>
RHR "C" Pump Test Line T/C	E12-F311	24(0) <i>foya</i>
RHR "C" Pump Test Line T/C	E12-F304	24(0) <i>foya</i>
HPCS Discharge T/C	E22-F021	26(0)
HPCS Test Line T/C	E22-F303	27(0) <i>foya</i>
HPCS Test Line T/C	E22-F304	27(0) <i>foya</i>
RCIC Turbine Exhaust T/C	E51-F258	29(0) <i>foya</i>
RCIC Turbine Exhaust T/C	E51-F257	29(0) <i>foya</i>
LPCS T/C	E21-F013	31(0)
LPCS Test Line T/C	E21-F222	32(0) <i>foya</i>
LPCS Test Line T/C	E21-F221	32(0) <i>foya</i>

TABLE 3.6.4-1 (Continued)

CONTAINMENT AND DRYWELL ISOLATION VALVES

<u>SYSTEM AND VALVE NUMBER</u>		<u>PENETRATION NUMBER</u>
<u>Containment (Continued)</u>		
CRD T/C	C11-F128	33(0)
Cont. Purge Supply T/C	M41-F042	34(0)
Cont. Purge Exhaust T/C	M41-F051	35(0)
DCW Supply T/C	P72-F167	37(0)
Plant Chilled Water T/C	P71-F232	38(0)
Plant Chilled Water T/C	P71-F246	39(0)
Ctmt. Leak Rate T/C	M61-F009	40(I)
Service Air T/C	P52-F258	41(0)
Inst. Air T/C	P53-F036	42(0)
RWCU T/C	G33-F070	43(0)
CCW Supply T/C	P42-F161	44(0)
CCW Return T/C	P42-F162	45(I)
Condensate Supply T/C	P11-F095	56(0)
FPC & CU To Upper Cont. Pool T/C	G41-F340	57(I)
Aux. Bldg. Flr. & Equip. Drain Tk. to Suppr. Pool T/C	P45-F275	60(0)
Aux. Bldg. Flr. & Equip. Drain Tk. to Suppr. Pool T/C	P45-F290	60(0)
Stby. Liquid Control Sys. Mix. Tk. T/C (future use)	C41-F152	61(0)
Combustible Gas Control T/C	E61-F017	65(0)
Purge Radiation Detector T/C	M41-F054	66(0)
RHK "B" Test Line T/C	E12-F321	67(0) <i>copy</i>
RHR "B" Test Line T/C	E12-F351	67(0) <i>copy</i>
RHR "B" Test Line T/C	E12-F331	67(0) <i>copy</i>

TABLE 3.6.4-1 (Continued)

CONTAINMENT AND DRYWELL ISOLATION VALVES

<u>SYSTEM AND VALVE NUMBER</u>		<u>PENETRATION NUMBER</u>
<u>Containment (Continued)</u>		
RHR "B" Test Line T/C	E12-F350	67(0) <i>copy</i>
RHR "B" Test Line T/C	E12-F312	67(0) <i>copy</i>
RHR "B" Test Line T/C	E12-F305	67(0) <i>copy</i>
Refueling Water Transf. Pump Suction T/C	P11-F425	69(0) <i>copy</i>
Refueling Water Transf. Pump Suction T/C	P11-F132	69(0) <i>copy</i>
Inst. Air to ADS T/C	P53-F043	70(0)
Post Acc. Sample Return and RHR "C" Relief Valve Vent Hdr. to Suppr. Pool T/C	E12-F409	71B(I) <i>copy</i>
Post Acc. Sample Return and RHR "C" Relief Valve Vent Hdr. to Suppr. Pool T/C	E12-F408	71B(0) <i>copy</i>
Cont. Leak Rate T/C	M61-F010	82(I)
RWCU To Feedwater T/C	G33-F055	83(0)
Suppr. Pool Cleanup T/C	P60-F011	85(0)
Suppr. Pool Cleanup T/C	P60-F034	85(0)
RWCU Pump Suction T/C	G33-F002	87(0)
RWCU Pump Discharge T/C	G33-F061	88(0)
SSW T/C	P41-F163A	89(0) <i>copy</i>
SSW T/C	P41-F163B	92(0) <i>copy</i>
b. <u>Drywell</u>		
LPCI "A" T/C	E12-F056A	313(0)
LPCI "B" T/C	E12-F056B	314(0)
Instrument Air T/C	P53-F493	335(0)
SLCS T/C	C41-F026	329(0)
Service Air T/C	P52-F476	363(0)
RWCU T/C	G33-F120	366(I)
Reactor Sample T/C	B33-F021	465(0)