

8
DRAFT

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 , 0.635 percent by weight of the containment air per 24 hours at P_a , 39.6 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 isolation 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 , 39.6 psig.
- c. *Less than or equal to 25 scf per hour for any one main steam isolation valve when tested at 25.0 psig.
- d. A combined leakage rate of less than or equal to 1 gpm times the total number of ECCS and RCIC containment isolation valves in hydrostatically tested lines which penetrate the primary containment, when tested at $1.10 P_a$, 43.6 psig.

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

ACTION:

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 isolation 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 25 scf per hour for any one main steam isolation valve, or
- d. The measured combined leakage rate for all ECCS and RCIC containment isolation valves in hydrostatically tested lines which penetrate the primary containment exceeding 1 gpm times the total number of such valves,

50-374
*Exemption to Appendix "J" of 10 CFR 50.

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CONTAINMENT SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

restore:

- a. The overall integrated leakage rate(s) 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 isolation 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 25 scf per hour for any one main steam isolation valve, and
- d. The combined leakage rate for all ECCS and RCIC 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 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 ± 10 month intervals during shutdown at P_a , 39.6 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 , 39.6 psig.

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CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- d. Type B and C tests shall be conducted with gas at P_a , 39.6 psig*, at intervals no greater than 24 months except for tests involving:
 - 1. Air locks,
 - 2. Main steam line isolation valves,
 - 3. Valves pressurized with fluid from a seal system, and
 - 4. ECCS and RCIC containment isolation valves in hydrostatically tested lines which penetrate the primary containment.
- e. Air locks shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.3.
- f. Main steam line isolation valves shall be leak tested at least once per 18 months.
- 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 $1.10 P_a$, 43.6 psig, and the seal system capacity is adequate to maintain system pressure for at least 30 days.
- h. ECCS and RCIC containment isolation valves in hydrostatically tested lines which penetrate the primary containment shall be leak tested at least once per 18 months.
- i. The provisions of Specification 4.0.2 are not applicable to 24 month or 40 ± 10 month surveillance intervals.

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

LASALLE UNIT 2 16:32:32 THU, 30 JUN 1983

**** SUMMARY OF DATA SETS 20 THRU 35 ****

DATA SET	TEST DURATION (HRS)	TAPE TIME	TEMP (R)	DRY AIR PRESSURE (PSIA)	MEASURED MASS	CALCULATED MASS T = 0	MEAS LEAK RATE TOTAL % / DAY	POINT % / DAY	CALC LEAK RATE % / DAY	95% UPPER CONFIDENCE LIMIT
20	0.000000	03:42:00	544.77673	53.39452	1.04416E+05	0.00000E-01	0.0000	0.0000	0.0000	0.0000
21	0.333336	04:02:00	544.73926	53.33770	1.04312E+05	0.00000E-01	7.1670	7.1670	0.0000	0.0000
22	0.666668	04:22:00	544.72205	53.37737	1.04393E+05	1.04385E+05	0.7951	-5.5823	0.7954	18.6995
23	1.000000	04:42:00	544.68213	53.32965	1.04307E+05	1.04394E+05	2.4993	5.9088	1.6920	6.5685
24	1.333336	05:02:00	544.64758	53.31895	1.04293E+05	1.04394E+05	2.1214	0.9890	1.7306	4.0594
25	1.666668	05:22:00	544.63953	53.31987	1.04296E+05	1.04389E+05	1.6508	-0.2319	1.4614	2.8887
26	2.000000	05:42:00	544.62219	53.32778	1.04315E+05	1.04380E+05	1.1598	-1.2966	1.0699	2.1283
27	2.333336	06:02:00	544.59875	53.30933	1.04283E+05	1.04378E+05	1.3054	2.1806	0.9992	1.7644
28	2.666668	06:22:00	544.58228	53.31986	1.04307E+05	1.04371E+05	0.9375	-1.6398	0.7904	1.4119
29	3.000000	06:42:00	544.56665	53.28190	1.04197E+05	1.04381E+05	1.6792	7.6210	1.0563	1.6205
30	3.333336	07:02:00	543.48938	53.27776	1.04434E+05	1.04353E+05	-0.1272	-16.4198	0.4085	1.2313
31	3.666668	07:22:00	543.40344	53.24296	1.04383E+05	1.04340E+05	0.2084	3.5646	0.1560	0.8828
32	4.000000	07:42:00	543.10376	53.24874	1.04452E+05	1.04324E+05	-0.2052	-4.7562	-0.1586	0.5320
33	4.333336	08:02:00	543.07410	53.26663	1.04492E+05	1.04308E+05	-0.4058	-2.8122	-0.4323	0.2187
34	4.666664	08:22:00	543.12292	53.28413	1.04517E+05	1.04295E+05	-0.4995	-1.7162	-0.6425	-0.0424
35	5.000000	08:42:00	543.21301	53.23807	1.04410E+05	1.04297E+05	0.0288	7.4173	-0.6050	-0.0917

FIRST TEST

LASALLE UNIT 2

12:10:01

FRI, 01 JUL 1983

**** SUMMARY OF DATA SETS 73 THRU 87 ****

DATA SET	TEST DURATION (HRS)	TAPE TIME	TEMP (R)	DRY AIR PRESSURE (PSIA)	MEASURED MASS	CALCULATED MASS T = 0	MEAS LEAK RATE TOTAL % / DAY	MEAS LEAK RATE POINT % / DAY	CALC LEAK RATE % / DAY	95% UPPER CONFIDENCE LIMIT
73	0.000000	07:22:00	542.91370	54.14959	1.06256E+05	0.00000E-01	0.0000	0.0000	0.0000	0.0000
74	0.333336	07:42:00	542.87463	54.14911	1.06263E+05	0.00000E-01	-0.4531	-0.4531	0.0000	0.0000
75	0.666672	08:02:00	542.84546	54.15316	1.06276E+05	1.06255E+05	-0.6898	-0.9264	-0.6898	-0.0251
76	1.000000	08:22:00	542.87451	54.15154	1.06267E+05	1.06258E+05	-0.2605	0.5281	-0.3270	0.2896
77	1.333336	08:42:00	542.89001	54.14899	1.06259E+05	1.06262E+05	-0.0588	0.5463	-0.0798	0.3651
78	1.666672	09:02:00	542.92249	54.14725	1.06250E+05	1.06265E+05	0.0853	0.6617	0.0967	0.4394
79	2.000000	09:22:00	542.98926	54.14291	1.06228E+05	1.06270E+05	0.3150	1.4633	0.3062	0.6408
80	2.333336	09:42:00	543.01270	54.14108	1.06220E+05	1.06274E+05	0.3491	0.5539	0.4140	0.6834
81	2.666672	10:02:00	542.99170	54.13927	1.06220E+05	1.06274E+05	0.3006	-0.0392	0.4342	0.6388
1082	3.000000	10:22:00	542.99255	54.13919	1.06220E+05	1.06274E+05	0.2699	0.0244	0.4221	0.5828
83	3.333336	10:42:00	543.02502	54.13722	1.06210E+05	1.06274E+05	0.3120	0.6916	0.4277	0.5572
84	3.666672	11:02:00	543.03113	54.13374	1.06202E+05	1.06274E+05	0.3332	0.5455	0.4355	0.5423
1385	4.000000	11:22:00	543.06018	54.13058	1.06190E+05	1.06275E+05	0.3724	0.8040	0.4523	0.5434
86	4.333336	11:42:00	543.15955	54.12888	1.06167E+05	1.06278E+05	0.4625	1.5446	0.4940	0.5826
1587	4.666672	12:02:00	543.14465	54.12925	1.06171E+05	1.06278E+05	0.4119	-0.2469	0.5027	0.5794

0.467

24 HR TEST

LASALLE UNIT 2 09:50:28 SAT, 02 JUL 1983

*** SUMMARY OF DATA SETS 73 THRU 146 ***

DATA SET	TEST DURATION (HRS)	TAPE TIME (HRS)	TEMP (R)	DRY AIR PRESSURE (PSIA)	MEASURED MASS	CALCULATED MASS T = 0	MEAS LEAK RATE % / DAY	POINT % / DAY	CALC LEAK RATE % / DAY	95% UPPER CONFIDENCE LIMIT
1 73	0.000000	07:22:00	54.6297	54.13788	1.05938E+05	0.0000E-01	0.0000	0.0000	0.0000	0.0000
2 74	0.333336	07:42:00	54.42078	54.13599	1.05938E+05	0.0000E-01	0.2219	0.2219	0.0000	0.0000
3 75	0.666672	08:02:00	54.439087	54.14272	1.05954E+05	1.05953E+05	-0.5347	-1.2913	-0.5347	1.5908
4 76	1.000000	08:22:00	54.439685	54.14129	1.05950E+05	1.05936E+05	-0.2669	-0.2684	-0.2683	0.2453
5 77	1.333336	08:42:00	54.440527	54.13890	1.05944E+05	1.05938E+05	-0.0927	0.4300	-0.1749	0.2160
6 78	1.666672	09:02:00	54.440369	54.13667	1.05940E+05	1.05942E+05	-0.0191	0.2750	-0.0568	0.2195
7 79	2.000000	09:22:00	54.440112	54.13400	1.05932E+05	1.05944E+05	0.0377	0.3218	0.0265	0.2052
8 80	2.333336	09:42:00	54.439709	54.13120	1.05930E+05	1.05940E+05	0.0778	0.3186	0.0855	0.2496
9 81	2.666672	10:02:00	54.440125	54.12971	1.05927E+05	1.05947E+05	0.0997	0.3428	0.1242	0.2732
10 82	3.000000	10:22:00	54.439563	54.13062	1.05930E+05	1.05947E+05	0.0670	-0.1544	0.1264	0.2291
11 83	3.333336	10:42:00	54.440454	54.12789	1.05922E+05	1.05947E+05	0.1083	0.4800	0.1439	0.2284
12 84	3.666672	11:02:00	54.439651	54.12490	1.05918E+05	1.05948E+05	0.1252	0.2942	0.1597	0.2312
13 85	4.000000	11:22:00	54.440161	54.12300	1.05913E+05	1.05949E+05	0.1411	0.3165	0.1744	0.2261
14 86	4.333336	11:42:00	54.440417	54.12325	1.05913E+05	1.05949E+05	0.1305	0.0032	0.1787	0.2314
15 87	4.666672	12:02:00	54.439868	54.12239	1.05913E+05	1.05949E+05	0.1241	0.0404	0.1781	0.2234
16 88	5.000000	12:22:00	54.440063	54.11993	1.05908E+05	1.05949E+05	0.1393	0.3527	0.1815	0.2231
17 89	5.333336	12:42:00	54.440247	54.11990	1.05907E+05	1.05949E+05	0.1325	0.3297	0.1809	0.2156
18 90	5.666672	13:02:00	54.439978	54.11530	1.05899E+05	1.05950E+05	0.1345	0.5757	0.1874	0.2188
19 91	6.000000	13:22:00	54.440247	54.11809	1.05904E+05	1.05949E+05	0.1311	-0.3344	0.1638	0.2120
20 92	6.333336	13:42:00	54.440662	54.11455	1.05894E+05	1.05950E+05	0.1519	0.5248	0.1860	0.2115
21 93	6.666672	14:02:00	54.442249	54.12119	1.05906E+05	1.05949E+05	0.1105	-0.6746	0.1755	0.2013
22 94	7.000000	14:22:00	54.442554	54.11282	1.05876E+05	1.05950E+05	0.2005	2.0447	0.1915	0.2185
23 95	7.333336	14:42:00	54.441174	54.10835	1.05883E+05	1.05950E+05	0.1716	-0.4760	0.1956	0.2205
24 96	7.666672	15:02:00	54.442539	54.10880	1.05881E+05	1.05951E+05	0.1693	0.1169	0.1980	0.2209
25 97	8.000000	15:22:00	54.443091	54.10305	1.05869E+05	1.05952E+05	0.1573	0.8415	0.2058	0.2262
26 98	8.333336	15:42:00	54.443884	54.10216	1.05865E+05	1.05952E+05	0.1984	0.2253	0.2121	0.2337
27 99	8.666672	16:02:00	54.444849	54.10282	1.05865E+05	1.05953E+05	0.1923	0.0393	0.2157	0.2360
28 100	8.999992	16:22:00	54.444910	54.09904	1.05857E+05	1.05953E+05	0.2040	0.5101	0.2208	0.2402
29 101	9.333336	16:42:00	54.445129	54.09800	1.05855E+05	1.05954E+05	0.2038	0.1690	0.2245	0.2430
30 102	9.666672	17:02:00	54.446179	54.09513	1.05847E+05	1.05955E+05	0.2139	0.5308	0.2295	0.2473
31 103	9.999992	17:22:00	54.447103	54.09336	1.05854E+05	1.05955E+05	0.1902	-0.4930	0.2292	0.2458
32 104	10.333336	17:42:00	54.446021	54.09660	1.05850E+05	1.05955E+05	0.1930	0.2784	0.2292	0.2448
33 105	10.666672	18:02:00	54.446973	54.09597	1.05847E+05	1.05954E+05	0.1935	0.2083	0.2291	0.2437
34 106	10.999992	18:22:00	54.447339	54.09415	1.05843E+05	1.05954E+05	0.1964	0.2891	0.2293	0.2421
35 107	11.333336	18:42:00	54.448560	54.09344	1.05839E+05	1.05954E+05	0.1981	0.2561	0.2296	0.2426
36 108	11.666672	19:02:00	54.447437	54.09055	1.05836E+05	1.05955E+05	0.1992	0.2360	0.2299	0.2421
37 109	11.999992	19:22:00	54.448354	54.09250	1.05834E+05	1.05954E+05	0.1972	0.1263	0.2297	0.2413
38 110	12.333336	19:42:00	54.448143	54.09374	1.05833E+05	1.05954E+05	0.1927	0.0319	0.2287	0.2397
39 111	12.666672	20:02:00	54.448265	54.09662	1.05838E+05	1.05954E+05	0.1803	-0.2808	0.2259	0.2367
40 112	12.999992	20:22:00	54.448342	54.09114	1.05831E+05	1.05954E+05	0.1866	0.4284	0.2243	0.2367
41 113	13.333336	20:42:00	54.448989	54.08591	1.05820E+05	1.05953E+05	0.1814	0.7813	0.2248	0.2367
42 114	13.666672	21:02:00	54.448173	54.08811	1.05823E+05	1.05953E+05	0.1918	-0.1946	0.2239	0.2353
43 115	13.999992	21:22:00	54.448261	54.09059	1.05824E+05	1.05953E+05	0.1823	-0.2073	0.2217	0.2359
44 116	14.333336	21:42:00	54.448372	54.08816	1.05819E+05	1.05953E+05	0.1889	0.4856	0.2205	0.2394
45 117	14.666672	22:02:00	54.448421	54.09181	1.05825E+05	1.05953E+05	0.1753	-0.4104	0.2177	0.2266
46 118	14.999992	22:22:00	54.448345	54.09040	1.05824E+05	1.05953E+05	0.1727	0.0595	0.2148	0.2237
47 119	15.333336	22:42:00	54.448401	54.08784	1.05818E+05	1.05951E+05	0.1784	0.4337	0.2128	0.2216
48 120	15.666672	23:02:00	54.448497	54.08640	1.05813E+05	1.05950E+05	0.1908	0.2934	0.2112	0.2198
49 121	15.999992	23:22:00	54.448503	54.08167	1.05804E+05	1.05950E+05	0.1910	-0.6698	0.2110	0.2192
50 122	16.333336	23:42:00	54.448544	54.08408	1.05808E+05	1.05950E+05	0.1815	-0.2754	0.2096	0.2176

122	16.333336	00:02:00	544.55444	54.08408	1.05000E+05	1.05949E+05	0.1741	-0.1671	0.2075	0.2134
123	16.666664	00:02:00	544.55835	54.08586	1.05810E+05	1.05949E+05	0.1692	-0.0778	0.2050	0.2130
124	16.999992	00:02:00	544.57043	54.08765	1.05911E+05	1.05949E+05	0.1710	0.2658	0.2029	0.2109
125	17.333336	00:02:00	544.58531	54.08515	1.05808E+05	1.05948E+05	0.1348	-1.7512	0.1971	0.2066
126	17.666664	01:02:00	544.58398	54.10016	1.05833E+05	1.05947E+05	0.1275	-0.2604	0.1911	0.2019
127	17.999992	01:02:00	544.60417	54.08425	1.05837E+05	1.05945E+05	0.1717	2.5648	0.1901	0.2006
128	18.333336	01:02:00	544.56982	54.08144	1.05799E+05	1.05945E+05	0.1810	0.6901	0.1901	0.2002
129	18.666664	02:02:00	544.58472	54.07772	1.05789E+05	1.05945E+05	0.1746	-0.1829	0.1894	0.1992
130	18.999992	02:02:00	544.57715	54.07835	1.05792E+05	1.05945E+05	0.1816	0.5817	0.1895	0.1990
131	19.333336	02:02:00	544.58362	54.07462	1.05783E+05	1.05944E+05	0.1789	0.0213	0.1893	0.1985
132	19.666664	03:02:00	544.58655	54.07475	1.05783E+05	1.05944E+05	0.1802	0.2563	0.1892	0.1981
133	19.999992	03:02:00	544.59155	54.07332	1.05779E+05	1.05944E+05	0.1745	-0.1680	0.1886	0.1972
134	20.333336	03:02:00	544.60120	54.07555	1.05782E+05	1.05944E+05	0.1664	-0.3244	0.1873	0.1957
135	20.666664	04:02:00	544.57446	54.07533	1.05787E+05	1.05944E+05	0.2062	2.6768	0.1896	0.1931
136	21.999992	04:02:00	544.60132	54.05789	1.05747E+05	1.05944E+05	0.2053	0.1457	0.1917	0.2002
137	21.333336	04:02:00	544.62451	54.05909	1.05745E+05	1.05945E+05	0.2103	0.5309	0.1941	0.2026
138	21.666664	05:02:00	544.61682	54.05434	1.05737E+05	1.05946E+05	0.1996	-0.4937	0.1924	0.2037
139	21.999992	05:02:00	544.62012	54.05837	1.05745E+05	1.05946E+05	0.2030	0.4245	0.1968	0.2051
140	22.333336	05:02:00	544.62170	54.05534	1.05738E+05	1.05947E+05	0.1786	-1.4555	0.1961	0.2041
141	22.666664	06:02:00	544.61328	54.06544	1.05760E+05	1.05946E+05	0.1869	0.7521	0.1961	0.2039
142	22.999992	06:02:00	544.61511	54.05997	1.05749E+05	1.05946E+05	0.1810	-0.2277	0.1956	0.2032
143	23.333336	06:02:00	544.61975	54.06214	1.05752E+05	1.05946E+05	0.1788	0.0277	0.1950	0.2024
144	23.666664	07:02:00	544.61877	54.06184	1.05752E+05	1.05946E+05	0.1765	0.0128	0.1942	0.2014
145	23.999992	07:02:00	544.61987	54.06185	1.05751E+05	1.05946E+05	0.1672	-0.5074	0.1927	0.1999
146	24.333336	07:02:00	544.60999	54.06467	1.05759E+05	1.05945E+05				

0.1926 0.1998

$$r^2 = .96510$$

$$T_{.95} = 1.6672$$

$$Lmp = 0.1926$$

$$\text{deviation of } Lmp = 0.0071$$

$$u_{crit} = 0.1998$$

$$Y \text{ INTERCEPT (B)} = 105946.61$$

$$\text{SLOPE (A)} = -8.5040$$

$$\text{std dev of slope (S}_a\text{)} = 0.19057$$

$$n = 74$$

INDUCED

L7650LE UNIT 2 10:10:04 SAT, 02 JUL 1983

*** SUMMARY OF DATA SETS 147 THRU 153 ***

DATA SET	TEST DURATION (HRS)	TAPE TIME	TEMP (R)	DRY AIR PRESSURE (PSIA)	MEASURED MASS	CALCULATED MASS T = 0	MEAS LEAK RATE TOTAL % / DAY	POINT % / DAY	CALC LEAK RATE % / DAY	95% UPPER CONFIDENCE LIMIT
147	0.000000	08:02:00	544.61316	54.06053	1.05750E+05	0.00000E+01	0.0000	0.0000	0.0000	0.0000
148	0.333328	08:22:00	544.63672	54.05857	1.05742E+05	0.00000E+01	0.5734	0.5734	0.0000	0.0000
149	0.666672	08:42:00	544.60089	54.05174	1.05734E+05	1.05750E+05	0.5569	0.5405	0.5569	0.6032
150	1.000000	09:02:00	544.61267	54.04408	1.05718E+05	1.05751E+05	0.7280	1.0704	0.7092	0.9582
151	1.333328	09:22:00	544.60779	54.03732	1.05706E+05	1.05752E+05	0.7551	0.8364	0.7651	0.9058
152	1.666672	09:42:00	544.61792	54.03322	1.05696E+05	1.05752E+05	0.7400	0.6801	0.7689	0.8529
153	2.000000	10:02:00	544.60437	54.02469	1.05682E+05	1.05753E+05	0.7762	0.9580	0.7904	0.8520

(405) SCFH

150 | P₁ 54.684
P₂ 55.032
P_T = 54.858

$$\left(\frac{405 \frac{\text{SCFH}}{\text{hr}} \cdot 24 \text{ hr}}{394,638 \text{ SCFH}} \right) \times 100 \times \frac{14.7 \text{ PSI}}{54.858 \text{ PSI}} =$$

$$100 \left(\frac{(405 \cdot 24)}{394,638} \right) \left(\frac{14.7}{54.858} \right) = 6.6$$

$$\frac{100 (320.96)}{394,638} \left(\frac{14.7}{54.02408} \right) = 5.302$$

± .15875

.7229

.564 ←

.88165

1.5992

ASSEMBLY UNIT 2 12-04:25 LOT, 02 JUL 1983

*** DATA OF DATA SETS 81 THRU 83 ***

156 DATA SETS HAVE ALREADY BEEN ENTERED

CAPTUREMENT CONFIGURATION TOTAL VOLUME= 3.94638E+05 CU FT

SUB VOL CU.FT. VOLUME WEIGHTED H PIDS H DCELLS
FRACTION

1	4070.	0.00031	2	0
2	6850.	0.01746	2	0
3	16300.	0.04130	4	2
4	37997.	0.09628	4	1
5	55497.	0.14063	4	2
6	7090.	0.01797	4	0
7	101694.	0.25769	3	1
8	165100.	0.41836	5	0

394,638 1.0 28 6

THE 'PPG' CORRECTION CONSTANTS ARE:

H1 = 0.9982
C1 = -0.1530
H2 = 0.9982
C2 = -0.1530

THE FLOW COEFFICIENTS ARE:

A = 0.00000E-01
B = 0.00000E-01
C = 0.00000E-01
D = 0.00000E-01

THE CALIBRATION ERRORS ARE:

ERRF = 1.49500E-02
ERRI = 2.63000E-02
ERRPV = 3.57000E-03

THE HIGH REASONABLE LIMITS ARE:

RIDS = 120.0 DEG F
DCELLS = 120.0 DEG F
PRESSURE = 60.0 PSIA

THE LOW REASONABLE LIMITS ARE:

RIDS = 40.0 DEG F
DCELLS = 40.0 DEG F
PRESSURE = 14.0 PSIA

ALLOWABLE LEAKAGE RATE = 0.635 WEIGHT % / DAY

SUBVOLUME 1

RID 1 CHANNEL 10
RID 2 CHANNEL 11

SUBVOLUME 2

RID 1 CHANNEL 14
RID 2 CHANNEL 15

SUBVOLUME 3

RTD 1 CHANNEL 16
RTD 2 CHANNEL 17
RTD 3 CHANNEL 18
RTD 4 CHANNEL 19
DEWCELL 1 CHANNEL 41
DEWCELL 2 CHANNEL 42

SUBVOLUME 4

RTD 1 CHANNEL 20
RTD 2 CHANNEL 21
RTD 3 CHANNEL 22
RTD 4 CHANNEL 23
DEWCELL 1 CHANNEL 43

SUBVOLUME 5

RTD 1 CHANNEL 24
RTD 2 CHANNEL 25
RTD 3 CHANNEL 26
RTD 4 CHANNEL 27
DEWCELL 1 CHANNEL 44
DEWCELL 2 CHANNEL 45

SUBVOLUME 6

RTD 1 CHANNEL 12
RTD 2 CHANNEL 13
RTD 3 CHANNEL 32
RTD 4 CHANNEL 33

SUBVOLUME 7

RTD 1 CHANNEL 29
RTD 2 CHANNEL 30
RTD 3 CHANNEL 31
DEWCELL 1 CHANNEL 47

SUBVOLUME 8

RTD 1 CHANNEL 34
RTD 2 CHANNEL 35
RTD 3 CHANNEL 36
RTD 4 CHANNEL 37
RTD 5 CHANNEL 39

AMBIENT TEMPERATURE
AMBIENT PRESSURE
FLOW
SUP. POOL LEVEL

CHANNEL 0
CHANNEL 0
CHANNEL 0
CHANNEL 0

THE BASE DATA SET IS 73
FAILED SENSOR LIST BY CHANNEL NUMBER: NONE

SFT # 81 AT 58.03 HRS BASE DATA SET = 73

FAILED SENSORS:

NONE

PRESSURE 1 = 54.503 PSIA VOLUME WEIGHTED AVE TEMP = 84.731 DEG F MASS = 1.0592664063E+05
PRESSURE 2 = 54.848 PSIA VOLUME WEIGHTED AVE DENCCELL = 82.277 DEG F ISG = 1.70384F-02
DRY AIR PRESSURE = 54.130 PSIA SUPPRESSION POOL WATER LEVEL = 0.000 IN
VAPOR PRESSURE = 0.546 PSIA

RTDS:

S.V.N 1 93.600 90.360
S.V.N 2 84.520 84.740
S.V.N 3 86.590 88.470 84.990 85.000
S.V.N 4 84.680 85.380 84.250 84.650
S.V.N 5 84.450 84.330 84.550 83.990
S.V.N 6 82.770 82.300 82.780 83.310
S.V.N 7 83.480 83.720 83.760
S.V.N 8 84.540 84.420 84.720 86.330 86.420

DENCCELLS:

S.V.N 3 80.180 89.730
S.V.N 4 70.700
S.V.N 5 86.970 82.720
S.V.N 7 83.220

SET # 82 AT 58.37 HRS BASE DATA SET = 73

FAILED SENSORS:

NONE

PRESSURE 1 = 54.501 PSIA VOLUME WEIGHTED AVE TEMP = 84.726 DEG F MASS = 1.05929500000E+05
PRESSURE 2 = 54.848 PSIA VOLUME WEIGHTED AVE DEWCELL = 82.169 DEG F ISG = 1.700000E-02
DRY AIR PRESSURE = 54.131 PSIA SUPPRESSION POOL WATER LEVEL = 0.000 IN
VAPOR PRESSURE = 0.544 PSIA

RTDS:

S.V.N 1	93.590	90.320		
S.V.N 2	84.500	84.730		
S.V.N 3	86.580	88.470	84.980	85.000
S.V.N 4	84.680	85.320	84.270	84.670
S.V.N 5	84.440	84.340	84.540	84.020
S.V.N 6	82.760	82.310	82.760	83.310
S.V.N 7	83.500	83.710	83.760	
S.V.N 8	84.550	84.350	84.730	86.290
				86.440

DEWCELLS:

S.V.N 3	79.640	89.680
S.V.N 4	70.650	
S.V.N 5	86.950	82.720
S.V.N 7	83.090	

SET # 83 AT 58.70 HRS BASE DATA SET = 73

FAILED SENSORS:

NONE

PRESSURE 1 = 54.501 PSIA VOLUME WEIGHTED AVE TEMP = 84.715 DEG F MASS = 1.059224375DE+05
PRESSURE 2 = 54.846 PSIA VOLUME WEIGHTED AVE DEWCELL = 82.267 DEG F ISG = 1.68503E-02
DRY AIR PRESSURE = 54.128 PSIA SUPPRESSION POOL WATER LEVEL = 0.000 IN
WOFOR PRESSURE = 0.546 PSIA

RIDS:

S.V.# 1	93.580	90.290		
S.V.# 2	84.520	84.750		
S.V.# 3	86.580	88.480	84.980	85.000
S.V.# 4	84.690	85.310	84.260	84.660
S.V.# 5	84.450	84.350	84.550	83.990
S.V.# 6	82.770	82.300	82.760	83.310
S.V.# 7	83.490	83.710	83.760	
S.V.# 8	84.560	84.380	84.760	86.310
				86.470

DEWCELLS:

S.V.# 3	78.680	89.670
S.V.# 4	70.740	
S.V.# 5	86.900	82.700
S.V.# 7	83.270	

LASALLE UNIT 2 12:06:17 SAT, 02 JUL 1983

*** DUMP OF DATA SETS 112 THRU 112 ***

156 DATA SETS HAVE ALREADY BEEN ENTERED

CONTAINMENT CONFIGURATION TOTAL VOLUME= 3.94638E+05 CU FT

SUB VOL	CU.FT.	VOLUME WEIGHTED FRACTION	# RTDS	# DEWCELLS
---------	--------	--------------------------------	--------	------------

1	4070.	0.01031	2	0
2	6890.	0.01746	2	0
3	16309.	0.04130	4	2
4	37997.	0.09628	4	1
5	55497.	0.14063	4	2
6	7090.	0.01797	4	0
7	101694.	0.25769	3	1
8	165100.	0.41836	5	0

THE 'PEP' CORRECTION CONSTANTS ARE:

M1 =	0.9982
C1 =	-0.1530
M2 =	0.9982
C2 =	-0.1530

THE FLOW COEFFICIENTS ARE:

A =	0.00000E-01
B =	0.00000E-01
C =	0.00000E-01
D =	0.00000E-01

THE CALIBRATION ERRORS ARE:

ERRP =	1.09500E-02
ERRT =	2.63700E-02
ERRPV =	3.89100E-03

THE HIGH REASONABLE LIMITS ARE:

RTDS =	120.0 DEG F
DEWCELLS =	120.0 DEG F
PRESSURE =	60.0 PSIA

THE LOW REASONABLE LIMITS ARE:

RTDS =	60.0 DEG F
DEWCELLS =	40.0 DEG F
PRESSURE =	14.0 PSIA

ALLOWABLE LEAKAGE RATE = 0.635 WEIGHT % / DAY

SUBVOLUME 1

RTD 1	CHANNEL 10
RTD 2	CHANNEL 11

SUBVOLUME 2

RTD 1	CHANNEL 14
RTD 2	CHANNEL 15

SUBVOLUME 3

RTD 1 CHANNEL 16
RTD 2 CHANNEL 17
RTD 3 CHANNEL 18
RTD 4 CHANNEL 19
DEWCELL 1 CHANNEL 41
DEWCELL 2 CHANNEL 42

SUBVOLUME 4

RTD 1 CHANNEL 20
RTD 2 CHANNEL 21
RTD 3 CHANNEL 22
RTD 4 CHANNEL 23
DEWCELL 1 CHANNEL 43

SUBVOLUME 5

RTD 1 CHANNEL 24
RTD 2 CHANNEL 25
RTD 3 CHANNEL 26
RTD 4 CHANNEL 27
DEWCELL 1 CHANNEL 44
DEWCELL 2 CHANNEL 45

SUBVOLUME 6

RTD 1 CHANNEL 12
RTD 2 CHANNEL 13
RTD 3 CHANNEL 32
RTD 4 CHANNEL 33

SUBVOLUME 7

RTD 1 CHANNEL 29
RTD 2 CHANNEL 30
RTD 3 CHANNEL 31
DEWCELL 1 CHANNEL 47

SUBVOLUME 8

RTD 1 CHANNEL 34
RTD 2 CHANNEL 35
RTD 3 CHANNEL 36
RTD 4 CHANNEL 37
RTD 5 CHANNEL 39

AMBIENT TEMPERATURE
AMBIENT PRESSURE
FLOW
SUP. POOL LEVEL

CHANNEL 0
CHANNEL 0
CHANNEL 0
CHANNEL 0

THE BASE DATA SET IS 73
FAILED SENSOR LIST BY CHANNEL NUMBER:

NONE

SET #112 AT 68.37 HRS BASE DATA SET = 73

FAILED SENSORS:

NONE

PRESSURE 1 = 54.473 PSIA VOLUME WEIGHTED AVE TEMP = 84.834 DEG F MASS = 1.0583129688E+05
PRESSURE 2 = 54.817 PSIA VOLUME WEIGHTED AVE DEWCELL = 82.733 DEG F ISG = 1.42518E-02
DP. AIR PRESSURE = 54.091 PSIA SUPPRESSION POOL WATER LEVEL = 0.000 IN
VAPOR PRESSURE = 0.534 PSIA

RTDS:

S.V.# 1	93.470	90.270	
S.V.# 2	84.630	84.870	
S.V.# 3	86.720	88.630	85.090
S.V.# 4	84.610	85.470	84.770
S.V.# 5	84.600	84.670	84.160
S.V.# 6	82.770	82.380	83.290
S.V.# 7	83.640	83.880	
S.V.# 8	84.560	84.520	86.300

DEWCELLS:

S.V.# 3	78.200	89.720
S.V.# 4	75.390	
S.V.# 5	87.310	82.760
S.V.# 7	83.280	

LASALLE UNIT 2 12:07:43 SAT, 02 JUL 1983

**** DUMP OF DATA SETS 136 THRU 136 ****

156 DATA SETS HAVE ALREADY BEEN ENTERED

CONTAINMENT CONFIGURATION TOTAL VOLUME= 3.94638E+05 CU FT

SUB VOL	CU.FT.	VOLUME WEIGHTED FRACTION	# RTDS	# DEMCELLS
1	4070.	0.01031	2	0
2	6890.	0.01746	2	0
3	16300.	0.04130	4	2
4	37997.	0.09628	4	1
5	55497.	0.14063	4	2
6	7090.	0.01797	4	0
7	101694.	0.25769	3	1
8	165100.	0.41836	5	0

THE 'PPG' CORRECTION CONSTANTS ARE:

M1 =	0.9982
C1 =	-0.1530
M2 =	0.9982
C2 =	-0.1530

THE FLOW COEFFICIENTS ARE:

A =	0.00000E-01
B =	0.00000E-01
C =	0.00000E-01
D =	0.00000E-01

THE CALIBRATION ERRORS ARE:

ERRP =	1.09500E-02
ERRT =	2.63000E-02
ERRPV =	3.89000E-03

THE HIGH REASONABLE LIMITS ARE:

RTDS =	120.0 DEG F
DEMCELLS =	120.0 DEG F
PRESSURE =	60.0 PSIA

THE LOW REASONABLE LIMITS ARE:

RTDS =	60.0 DEG F
DEMCELLS =	60.0 DEG F
PRESSURE =	14.0 PSIA

ALLOWABLE LEAKAGE RATE = 0.635 WEIGHT % / DAY

SUBVOLUME 1

RTD 1	CHANNEL 10
RTD 2	CHANNEL 11

SUBVOLUME 2

RTD 1	CHANNEL 14
RTD 2	CHANNEL 15

SET #136 AT 76.37 HRS BASE DATA SET = 73

FAILED SENSORS:

NONE

PRESSURE 1 = 54.459 PSIA VOLUME WEIGHTED AVE TEMP = 84.931 DEG F MASS = 1.0574721875E+05
PRESSURE 2 = 54.806 PSIA VOLUME WEIGHTED AVE DEWCELL = 83.849 DEG F ISG = 1.23095E-02
DRY AIR PRESSURE = 54.058 PSIA SUPPRESSION POOL WATER LEVEL = 0.000 IN
VAPOR PRESSURE = 0.574 PSIA

RT084

S.V.M 1	93.520	90.150	
S.V.M 2	84.760	85.000	
S.V.M 3	86.850	88.710	85.270
S.V.M 4	85.000	85.390	84.630
S.V.M 5	84.780	84.790	84.840
S.V.M 6	82.840	82.570	82.890
S.V.M 7	83.840	84.080	84.100
S.V.M 8	84.520	84.540	84.710

DEWCELLS:

S.V.M 3	82.770	89.790
S.V.M 4	83.540	
S.V.M 5	87.380	82.750
S.V.M 7	83.530	

RTD 1 CHANNEL 16
RTD 2 CHANNEL 17
RTD 3 CHANNEL 18
RTD 4 CHANNEL 19
DEWCELL 1 CHANNEL 41
DEWCELL 2 CHANNEL 42

SUBVOLUME 4

RTD 1 CHANNEL 20
RTD 2 CHANNEL 21
RTD 3 CHANNEL 22
RTD 4 CHANNEL 23
DEWCELL 1 CHANNEL 43

SUBVOLUME 5

RTD 1 CHANNEL 24
RTD 2 CHANNEL 25
RTD 3 CHANNEL 26
RTD 4 CHANNEL 27
DEWCELL 1 CHANNEL 44
DEWCELL 2 CHANNEL 45

SUBVOLUME 6

RTD 1 CHANNEL 12
RTD 2 CHANNEL 13
RTD 3 CHANNEL 32
RTD 4 CHANNEL 33

SUBVOLUME 7

RTD 1 CHANNEL 29
RTD 2 CHANNEL 30
RTD 3 CHANNEL 31
DEWCELL 1 CHANNEL 47

SUBVOLUME 8

RTD 1 CHANNEL 34
RTD 2 CHANNEL 35
RTD 3 CHANNEL 36
RTD 4 CHANNEL 37
RTD 5 CHANNEL 39

AMBIENT TEMPERATURE
AMBIENT PRESSURE
FLOW
SUP. POOL LEVEL

CHANNEL 0
CHANNEL 0
CHANNEL 0

THE BASE DATA SET IS 73
FAILED SENSOR LIST BY CHANNEL NUMBER: NONE

LASALLE UNIT 2 12:10:17 SAT, 02 JUL 1983

**** SUMMARY OF DATA SETS 147 THRU 156 ****

DATA SET	TEST DURATION (HRS)	TAPE TIME	TEMP (°C)	DRY AIR PRESSURE (PSIA)	MEASURED MASS	CALCULATED MASS T = 0	MEAS LEAK RATE TOTAL % / DAY	CALC LEAK RATE POINT % / DAY	95% UPPER CONFIDENCE LIMIT
147	0.000000	08:02:00	544.61315	54.06053	1.05750E+05	0.00000E+01	0.0000	0.0000	0.0000
148	0.233328	08:22:00	544.63672	54.05857	1.05742E+05	0.00000E+01	0.5734	0.5734	0.0000
149	0.666672	08:42:00	544.60889	54.05174	1.05734E+05	1.05750E+05	0.5569	0.5405	0.6032
150	1.000000	09:02:00	544.61267	54.04408	1.05718E+05	1.05751E+05	0.7280	1.0704	0.9582
151	1.333328	09:22:00	544.60779	54.03732	1.05706E+05	1.05752E+05	0.7551	0.8364	0.9056
152	1.666672	09:42:00	544.61792	54.03322	1.05696E+05	1.05752E+05	0.7400	0.6801	0.8529
153	2.000000	10:02:00	544.60437	54.02469	1.05682E+05	1.05753E+05	0.7762	0.9580	0.8520
154	2.333328	10:22:00	544.61023	54.02074	1.05673E+05	1.05753E+05	0.7515	0.6036	0.8287
155	2.666672	10:42:00	544.61853	54.01933	1.05668E+05	1.05751E+05	0.6947	0.2970	0.7998
156	3.000000	11:02:00	544.60669	54.01495	1.05662E+05	1.05750E+05	0.6648	0.4259	0.7682

Induced + calculated / Σ \pm .25%

.85 \pm

1.01 \rightarrow 69

1.635
31.275
1270
15875

LASALLE UNIT 2 12:50:55

TUE, 05 JUL 1983

**** SUMMARY OF DATA SETS 150 THRU 165 ****

DATA SET	TEST DURATION (HRS)	TAPE TIME	TEMP (R)	DRY AIR PRESSURE (PSIA)	MEASURED MASS	CALCULATED MASS I = 0	MEAS LEAK RATE TOTAL % / DAY	MEAS LEAK RATE POINT % / DAY	CALC LEAK RATE % / DAY	95% UPPER CONFIDENCE LIMIT
1 150	0.000000	09:02:00	544.61267	54.04408	1.05718E+05	0.00000E-01	0.0000	0.0000	0.0000	0.0000
2 151	0.333328	09:22:00	544.60779	54.03732	1.05708E+05	0.00000E-01	0.8384	0.8364	0.0000	0.0000
3 152	0.666672	09:42:00	544.61792	54.03322	1.05696E+05	1.05718E+05	0.7582	0.6801	0.7582	0.9779
4 153	1.000000	10:02:00	544.60437	54.02469	1.05682E+05	1.05718E+05	0.8247	0.9580	0.8102	0.9126
5 154	1.333328	10:22:00	544.61023	54.02074	1.05673E+05	1.05718E+05	0.7694	0.6036	0.7793	0.8436
6 155	1.666672	10:42:00	544.61853	54.01933	1.05668E+05	1.05718E+05	0.6749	0.2970	0.7015	0.8045
7 156	2.000000	11:02:00	544.60669	54.01495	1.05662E+05	1.05715E+05	0.6303	0.4259	0.6442	0.7401
8 157	2.333328	11:22:00	544.61426	54.00029	1.05648E+05	1.05715E+05	0.6841	0.9891	0.6490	0.7182
9 158	2.666672	11:42:00	544.61572	54.00586	1.05643E+05	1.05714E+05	0.6414	0.3429	0.6309	0.6867
10 159	3.000000	12:02:00	544.61389	53.99926	1.05630E+05	1.05714E+05	0.6652	0.8562	0.6337	0.6777
11 160	3.333328	12:22:00	544.61230	54.00011	1.05632E+05	1.05713E+05	0.5853	-0.1342	0.6006	0.6505
12 161	3.666672	12:42:00	544.61987	53.99626	1.05623E+05	1.05712E+05	0.5878	0.6134	0.5819	0.6274
13 162	4.000000	13:02:00	544.62439	53.99123	1.05612E+05	1.05712E+05	0.5597	0.7317	0.5755	0.6141
14 163	4.333328	13:22:00	544.62622	53.98748	1.05605E+05	1.05711E+05	0.5937	0.5220	0.5699	0.6033
15 164	4.666672	13:42:00	544.62524	53.97935	1.05589E+05	1.05712E+05	0.6278	1.0717	0.5783	0.6089
16 165	5.000000	14:02:00	544.62537	53.97934	1.05589E+05	1.05711E+05	0.5861	0.0032	0.5721	0.5992

.1999

$$\frac{.5418}{.7417} \pm .15875$$

.5821

Handwritten signature
D. 5418



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

JUL 28 1983

Docket No. 50-373
Docket No. 50-374

Commonwealth Edison Company
ATTN: Mr. Cordell Reed
Vice President
Post Office Box 767
Chicago, IL 60690

Gentlemen:

This refers to the routine safety inspection conducted by Messrs. S. G. DuPont, L. A. Reyes, R. D. Lanksbury, and G. C. Wright of this office on June 20 through July 22, 1983, of activities at the LaSalle County Nuclear Station, Units 1 and 2, authorized by NRC Operating License No. NPF-11 and NRC Construction Permit No. CPPR-100 and to the discussion of our findings with Mr. G. J. Diederich at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

During this inspection, certain of your activities appeared to be in noncompliance with NRC requirements, as specified in the enclosed Appendix. A written response is required.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure(s) will be placed in the NRC Public Document Room unless you notify this office, by telephone, within ten days of the date of this letter and submit written application to withhold information contained therein within thirty days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1). If we do not hear from you in this regard within the specified periods noted above, a copy of this letter, the enclosure(s), and your response to this letter will be placed in the Public Document Room.

The responses directed by this letter (and the accompanying Notice) are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

acc
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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

"Original Signed by J. F. Streeter"

J. F. Streeter, Chief
Engineering Branch I

Enclosures:

1. Appendix, Notice
of Violation
2. Inspection Reports
50-373/83-28; 50-374/83-23(DE)

cc w/encl:

D. L. Farrar, Director
of Nuclear Licensing
D. L. Shamblin, Site
Construction Superintendent
T. E. Quaka, Quality
Assurance Superintendent
G. J. Diederich, Station
Superintendent
R. H. Holyoak, Project Manager
DMB/Document Control Desk (RIDS)
Resident Inspector, RIII
Phyllis Dunton, Attorney
General's Office, Environmental
Control Division

OFFICE	RIII	RIII	RIII	RIII	RIII	RIII
SURNAME	Dunton	Landsburg	Reynolds	Wright	Walker	Streeter
DATE	7/28/83	7/27/83	7/27/83	7/ /83	7/24/83	7/26/83

Appendix

NOTICE OF VIOLATION

Commonwealth Edison Company

Docket No. 50-373

Docket No. 50-374

As a result of the inspection conducted on June 20 through July 22, 1983, and in accordance with the NRC Enforcement Policy, 47 FR 9987 (March 9, 1982), the following violations were identified:

1. 10 CFR 50, Appendix B, Criterion XI, states, in part, "Test procedures shall include provisions for assuring that all prerequisites for the given test have been met..." Startup Manual Procedure, LSU 400-1, Appendix A, Section 5.0, states, in part, "Test conditions which are different than those expected during normal or accident operation should be justified and documented in the system initial conditions and prerequisites section." Startup Manual Procedure, LSU 500-1, Section F.5, states, in part, "The System Test Engineer shall be responsible for verifying that prerequisites are satisfied prior to commencing a test."

Contrary to the above, a test condition existed that was different than those expected during normal or accident operation without being documented in the system initial conditions and prerequisites section of the Low Pressure Coolant Injection test portion of the Residual Heat Removal System Preoperational Test Procedure, PT-RH-201, in that the automatic initiation mode of the "B" and "C" loops of RHR were defeated by the Unit Separation Criteria. Additionally, the System Test Engineer failed to verify that the prerequisites of PT-RH-201, specifically those that were impacted by the Unit Separation Criteria were satisfied prior to commencing the test.

This is a Severity Level IV violation (Supplement II).

2. 10 CFR 50, Appendix B, Criterion V, states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings...and shall be accomplished in accordance with these instructions, procedures, or drawings."

Contrary to the above, the following instances were noted during the performance of the Containment Integrated Leak Rate Test (CILRT) where an activity affecting quality was not accomplished in accordance with an approved procedure:

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- a. Contrary to station test procedure LTS 300-4, the air supply header was vented and the spool-piece connecting the charging line to the containment spray line was removed prior to the completion of temperature stabilization.
- b. Contrary to station test procedure LTS 300-4, no entries were made in the CILRT events log between 2120 hours on June 28, 1983, and 0730 hours on June 29, 1983, even though actions were taken such as those noted in Item a above, that should have been logged.

This is a Severity Level V violation (Supplement II).

3. 10 CFR 50, Appendix B, Criterion XIV, states, in part, "Measures shall also be established for indicating the operating status of structures, systems, and components of the nuclear power plant..., such as by tagging valves and switches, to prevent inadvertent operation."

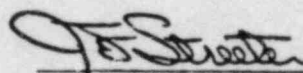
Contrary to the above following completion of the licensee's valve lineup for the CILRT, the inspectors found that the Jet Pump Instrumentation Stop Valves in the TIP room had not been tagged to prevent inadvertent operation.

This is a Severity Level V violation (Supplement II).

Pursuant to the provisions of 10 CFR 2.201, you are required to submit to this office within thirty days of the date of this Notice a written statement or explanation in reply, including for each item of noncompliance: (1) corrective action taken and the results achieved; (2) corrective action to be taken to avoid further noncompliance; and (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

JUL 28 1983

Dated



J. F. Streeter, Chief
Engineering Branch 1

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-373/83-28(DE); 50-374/83-23(DE)

Docket Nos. 50-373; 50-374

Licenses No. NPF-11; CPPR-100

Licensee: Commonwealth Edison Company
Post Office Box 707
Chicago, IL 60690

Facility Name: LaSalle County Station, Units 1 and 2

Inspection At: LaSalle Site, Marseilles, IL

Inspection Conducted: June 20, 1983 through July 22, 1983

Inspectors: S. G. Du Pont

7/27/83
Date

R. D. Lankford

7/28/83
Date

G. C. Wright

7/28/83
Date

Approved By: L. A. Reyes, Chief
Test Programs Section

7/28/83
Date

Inspection Summary

Inspection on June 20 through July 22, 1983 (Reports No. 50-373/83-28(DE); 50-374/83-23(DE))

Areas Inspected: Routine, unannounced inspection of preoperational test procedures; preoperational test procedure verification; preoperational test witnessing; preoperational test results review and verification; containment integrated leak rate test; and review of startup test results and licensee's evaluation of test results. The inspection involved a total of 248 inspector-hours onsite by four inspectors including 74 inspector-hours during off-shifts.

Results: Of the seven areas inspected, no items of noncompliance or deviations were identified in five areas. Within the remaining areas, three items of noncompliance were identified (failure to follow procedure - Paragraph 3.b.; failure to follow procedure - Paragraph 8.c.; and failure to tag valves - Paragraph 8.d.).

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DETAILS

1. Persons Contacted

- *D. Farrar, Director, Nuclear Licensing
- *R. H. Holyoak, LaSalle Project Manager
- +*R. D. Bishop, Administrative and Support Services Assistant Superintendent
- +J. C. Renwick, Technical Staff Supervisor
- *W. R. Huntington, Assistant Technical Staff Supervisor
- *E. J. Stevak, Acting Quality Assurance Supervisor
- *J. A. Ahlman, Quality Assurance
- +E. R. Pfister, Test Engineer
- *T. Hammerich, Test Engineer
- *R. Koenig, Test Engineer
- *M. D. Shaible, Test Engineer

The inspectors also interviewed other licensee employees including members of the quality assurance, technical, construction, and operating staff.

+Denotes personnel attending exit interview on July 15, 1983.

*Denotes personnel attending exit interview on July 22, 1983.

2. Preoperational Test Procedure Verification - Unit 2

The inspector verified that the following preoperational test procedures were written, reviewed, and approved by the licensee in accordance with the requirements of the Regulatory Guide 1.68 and the QA Manual.

- a. SD-CD-202 Condenser System
- b. SD-CQ-201 Communications System
- c. SD-CY-201 Cycled Condensate Supply System
- d. SD-FW-202 Feedwater Control System
- e. PT-VP-203 Primary Containment HVAC System
- f. PT-VX-201 Switchgear Heat Removal System
- g. SD-WS-201 Service Water System

No items of noncompliance or deviations were identified.

3. Preoperational Test Witnessing - Unit 2

The following Preoperational Tests were witnessed during this inspection period:

- a. PT-MS-201A, Main Steam Leakage Control System

The inspector witnessed the Low Dilution Air Flow Interlocks and Valve Test Mode Lockout Verification portions of the Main Steam Leakage Control System preoperational test to ascertain through observation and record review that testing was conducted in accordance with approved procedures. Additionally, the performance of licensee personnel was evaluated during the test.

The major objective of the test was to verify system operation with low dilution air flow. The inspector verified that the testing requirements of the FSAR were satisfied in all cases. The inspector also reviewed the system turnover package to verify the system test boundaries.

b. PT-RH-201, Residual Heat Removal (RHR)

The inspector witnessed the Low Pressure Coolant Injection (LPCI) portion of the RHR preoperational test to ascertain through observation, record review, and independent calculations that testing was conducted in accordance with approved and technically adequate procedures.

The major objectives of the test were to verify system operation in both the manual and automatic initiation modes and to calculate the net positive suction head of the system pumps.

During the performance of the LPCI operation test of loops "B" and "C", the System Test Engineer (STE) was unable to simulate a high drywell pressure as required by the preoperational test procedure with the Drywell High Pressure Relays 2E12-K5 and 2E12-K6. The STE determined by visual inspection that leads had been lifted to prevent the actuation of Relay 2E12-K6 and that the lifted leads were part of the unit separation required to prevent inadvertent starts of the 2A Diesel Generator during Unit 2 testing. The STE revised the procedure to continue testing and to accomplish the objective of observing the automatic operation of the LPCI Injection Valves by using the Manual Initiation Switch at panel 2H13-P601 in the control room. However, the Manual Initiation Switch also failed to actuate either the "B" or "C" loop LPCI Injection Valves. The STE's inspection revealed that the Manual Initiation Switch was included in the unit separation to prevent inadvertent operation of the 2A Diesel Generator during Unit 2 testing. With the exception of the automatic initiation, the preoperational test was completed satisfactorily.

The inspector determined through discussions with licensee personnel and record review that the Unit Separation Criteria was accomplished by lifted leads, installed jumpers, and tagouts prior to the completion of the review and approval of the preoperational test procedure. Information pertaining to this unit separation was not documented in the system condition and prerequisite section of PT-RH-201 during the review and approval process as required by Startup Manual Procedure LSU 400-1, Preoperational Test and System Demonstration Procedures, which states that test conditions which are different than those expected during normal or accident operation should be justified and documented in the prerequisite section of the procedure. The leads that were lifted for unit separation resulted in a condition not considered as either a normal or accident operation mode.

Additionally, the STE failed to establish the system test boundaries of the prerequisites prior to commencing testing as required by Start-up Manual Procedure LSU 500-1, Use of Test Procedures, Section F.5., which states that STE is responsible for verifying that prerequisites are satisfied prior to commencing a test. This is considered to be an item of noncompliance (374/83-23-01(DE)).

With the exception of the automatic initiation mode, the inspector verified that the testing requirements of the FSAR were satisfied. The inspector discussed with the licensee concerns pertaining to the impact of unit separation on other preoperational testing, specifically PT-AP-203, Emergency Power Redundancy Preoperational Test. At a meeting with the STEs, the licensee addressed the inspector's concerns of the impact of unit separation on related preoperational testing. Additionally, the specific impact on PT-AP-203 was discussed with the cognizant STE to ensure that unit separation will not effect testing conditions.

No other items of noncompliance or deviations were identified.

4. Preoperational Test Results Review - Unit 2

The inspector reviewed the results of the following test procedures against the prescribed acceptance criteria and reviewed the licensee's test evaluation for adequacy:

PT-AP-202	DC Distribution Preoperational Test
PT-VP-201	Primary Containment Vent and Purge Preoperational Test

These procedures were found satisfactory.

No items of noncompliance or deviations were identified.

5. Preoperational Test Results Verification - Unit 2

The inspector reviewed the results of the following preoperational test procedures against the acceptance criteria and reviewed the licensee's test evaluation for adequacy:

a.	PT-VX-201	Switchgear Heat Removal
b.	SD-CQ-201	Communications Systems
c.	SD-WS-201	Service Water
d.	SD-CD-202	Condenser
e.	SD-CY-201	Cycled Condensate

These procedures and their evaluations were found satisfactory unless otherwise noted.

During the review of the Cycled Condensate System Demonstration, the inspector discovered two different final pages in the procedure's evaluation. Both pages included in their summaries a listing of outstanding deficiencies required to be completed prior to Unit 2 fuel load (Category 1). However, the two listings were different in that Deficiency SD-CY-201-43 on the Cycled Condensate Heat-trace Heater no. 508 was omitted on one listing.

Discussions with the STE revealed that during the on-station review of the system demonstration evaluation, the deficiency was determined not to be a Category 1 and did not require completion prior to unit fuel load. The STE revised the evaluation by rewriting the final page and omitting the deficiency from the summary. However, the STE did not make any notations to indicate that the revised page was the correct and most current revision.

Additionally, the inspector determined that the evaluation review conducted by the Project Engineering Department (PED) was performed on the incorrect summary page. PED's review indicated that Deficiency SD-CY-201-43 was classified as Category 1 based upon the STE's evaluation and that the deficiency shall be resolved during a special test, LST 83-11. Even though PED's review was correct, the review was performed on an inaccurate evaluation provided to PED from the station. The evaluation and summary is considered to be part of the preoperational test and system demonstration procedures and the controls established for revising a procedure also apply to changes to the evaluation and summary of the procedure. The inspectors will verify the application of procedure change controls when future changes are noted to evaluations and summaries of tests.

No items of noncompliance or deviations were identified.

6. Review of Startup Test Results - Unit 1

The inspector reviewed the results of the following startup tests performed during Test Condition number 3 (50% to 75% control rod lines with core flow greater than 80%) and determined that all test changes were processed in accordance with the Technical Specifications; test deficiencies were processed and corrected as required; data sheets were complete and deficiencies noted; results were evaluated and met the acceptance criteria; and the results were reviewed and approved by station and corporate management as required, unless otherwise noted:

- STP-18 Core Power Distribution
- STP-19 Core Performance

During review of STP-19, the inspector determined that the value for rated total core flow that the process computer used was 106.5 Mlb/hr rather than 108.5 Mlb/hr given in the Technical Specification. The use of the lower total core flow constant resulted in a nonconservative critical power ratio (CPR) limit and as such it appeared the unit had the potential for operating outside the boundary conditions assumed in the FSAR.

Subsequent to the July 15, 1983 exit, the licensee revised the constants utilized in the process computer equation for computing the CPR flow correction. The inspector reviewed this change and determined that it satisfied his immediate concern. However, the question of whether or not the operating minimum CPR limit has ever been exceeded remains. The licensee has agreed to evaluate this matter. This is considered an unresolved item for Unit 1 (373/83-28-01(DE)) pending evaluation by the licensee. This is considered to be an open item for Unit 2 (374/83-28-02(DE)) pending the licensee's resolution of this concern by taking the same action as for Unit 1.

No items of noncompliance or deviations were identified.

7. Review of Licensee's Evaluation of Test Results - Unit 1

The inspector reviewed the results of STP-12, APRM Calibration, performed during Test Condition 3 and determined that the results were evaluated and met the acceptance criteria; and that the results were reviewed and approved by station management as required.

No items of noncompliance or deviations were identified.

8. Containment Integrated Leak Rate Preoperational Test - Unit 2

a. Procedure Review

The inspector reviewed procedure LTS 300-4, Revision 5, Unit 1/2 Integrated Primary Containment and Drywell Floor Bypass Leak Rate Test, and verified that the procedure was technically adequate and consistent with regulatory requirements, except as noted below.

Paragraph E.9 states that during the temperature stabilization period containment pressure is required to be kept at $39.6 + 0.5 - 0$ psig. Paragraph F.2.e lists the criteria for containment pressure during temperature stabilization as $39.6 + 1.0 - 0$ psig. The $39.6 + 1.0 - 0$ psig value is the one utilized during the performance of the test and the licensee has committed to change Paragraph E.9 to reflect this prior to the next use of LTS 300-4. Since this is a joint unit procedure, this is considered to be an open item (373/83-28-02(DE)) pending the licensee completion of the revision effort prior to its use on Unit 1. The inspector also noted during the conduct of the test that since LTS 300-4 does not require recording of the barometric pressure during the temperature stabilization period and since the computer printouts of containment pressure are in absolute pressure, there is no documentation to show that containment pressure is maintained within the required band. However, the inspector did verify during the conduct of the test that this requirement was met. The licensee has committed to revise LTS 300-4 prior to its next use to correct this deficiency.

This is considered an open item (373/83-28-03(DE)) pending the licensee's completion of the revision effort prior to its use on Unit 1.

b. Instrumentation

The inspector reviewed the calibration data associated with performing the CILRT. A multipoint calibration of all instrumentation was performed. Correction values were generated based on the difference between measurements of resistance from a NBS verified resistance box and actual resistance measured. All corrections were placed as an array or equation into the CILRT computer.

The following instrumentation was used in the CILRT:

<u>Type</u>	<u>Quantity</u>
RTDs	28*
Flowmeter	1
Pressure Gauge	2
Dewcells	6

During the test, one of the RTDs in subvolume 8 became defective. For the duration of the test, its reading was removed from the average temperature calculated from the other five sensors in this subvolume.

*Does not include the defective RTD in subvolume 8.

c. Witness of Test

The inspectors witnessed portions of the CILRT on June 29 through July 2, 1983 and verified that:

- . Appropriate revision of procedure was in use by test personnel.
- . Test prerequisites were met.
- . Proper plant systems were in service.

While witnessing the pressurization and subsequent temperature stabilization, the inspector noted two instances in which the approved procedure for the CILRT was not strictly adhered to. The first instance occurred approximately two hours into the first temperature stabilization period, when the inspector noted that the spool-piece connecting the charging line, from the air compressors used to pressurize the containment to the containment spray line was being removed.

Station procedure LTS 300-4, Unit 1/2 Integrated Primary Containment and Drywell Floor Bypass Leak Rate Test, referenced by PT-PC-201 to perform the CILRT, step F.2.e., requires a minimum of four hours for temperature stabilization. Step F.2.f. states that when stabilization is complete, vent the air supply header and remove the spool-piece. Since only about two hours had elapsed at the time of the removal of the spool-piece and since step F.2.e. requires a minimum of four hours to stabilize temperature, the procedure was obviously not performed in sequence. This is considered to be an example of an item of noncompliance (374/83-23-03A(DE)).

The second instance occurred when the inspector noted on review of the CILRT events log that no entry had been made between 2120 hours on June 28, 1983, and 0730 hours on June 29, 1983, when the inspector's review was performed. Paragraph C.1 of LTS 300-4 states that a signed and dated events log must be kept up to date at all times by the cognizant engineer on shift. This requirement is again reiterated in Paragraph E.13 of LTS 300-4 and with the additional requirement that the log shall be updated at least once per shift. During the time that no entries were made in the events log a number of actions were performed which should have been logged, including venting of the air supply header and removal of the spool-piece connecting the charging line to the containment spray line. This is considered to be an example of an item of noncompliance (374/83-23-03B(DE)).

The inspectors also noted that the temperature survey required by Paragraph 7.4 of ANSI N45.4-1972 had not been performed. The inspectors found that on Unit 1 the Architect Engineer (Sargent & Lundy) had performed an engineering evaluation to determine sensor placement. Subsequently, based on comments by both the licensee and the NRC, modifications were made as to the number of sensors and their locations. These same locations were used for Unit 2, as allowed by ANSI N45.4. In addition, since the unit is still under construction there are basically no heat loads of any significance at this time as would be the case for an operating plant. The licensee has been informed that prior to performing the next CILRT, the temperature survey will be required to substantiate placement of the required sensors. This is considered to be an open item (373/83-28-04(DE)) pending the licensee's completion of the temperature survey.

d. Direct Observation of Valve Lineups

The inspector verified by direct visual observations that valve lineups were completed in accordance with the test procedures with the following exception.

During a walkdown of the completed valve lineups, the inspectors found that the Jet Pump Instrumentation Stop Valves (2B21-F456, F458, F460, F462, F464A, F464B, F466, F468, F470, F472, F474A, and F474B) in the TIP room were not tagged. Paragraph E.10 of LTS 300-4 states that all valves associated with the CILRT should be tagged. Even though this prerequisite is worded as a "should" versus a "shall", the inspector considers it a requirement in that 10 CFR 50, Appendix B, Criterion XIV states, in part, "Measure shall also be established for indicating the operating status of structures, systems, and components of the nuclear power plant..., such as by tagging valves and switches, to prevent inadvertent operation." The inspectors verified the position of the valves to be in the closed position as required. The valves were subsequently tagged after the inspectors pointed out to the licensee the lack of tagging. This is considered to be an item of noncompliance (374/83-23-04(DE)).

e. CILRT Valve Lineup Penalties

The valve configurations for Instrument Air, LPCS, and HPCS systems deviated from the normal CILRT valve lineup. As a result, the local leak rate test results shall be added as a penalty to Lam at the 95% confidence level. However, all of the licensee's calculations were not completed during this inspection period and will be followed by the inspector.

f. CILRT Data Evaluation

The 24 hour CILRT was started on July 1, 1983, at 7:22 am. The inspectors independently monitored and evaluated leak rate data to verify the licensee's calculations of the leak rate. There was acceptable agreement between the inspectors' and licensee's leak rate calculations as indicated in the following summary (units are in weight percent per day):

<u>Measurement</u>	<u>Licensee</u>	<u>Inspector</u>
Leakage rate measured (Lam) during CILRT	0.1927	0.1926
Lam at 95% confidence level	0.1999	0.1998
Lam at 95% confidence level adjusted to reflect penalties (refer to Paragraph 8.e.)	*	*

*Not available at the time of this report.

Appendix J acceptance criterion at 95% confidence level = $0.75 L_a = 0.75 (0.635) = 0.476$. As indicated above, the penalties required to calculate the adjusted L_m at the 95% confidence level were not available at the time of this report. Final evaluation of the CILRT results is considered an open item (374/83-23-05(DE)) pending completion of the inspector's review of the penalties relating to valve configuration deviations.

g. Supplemental Test Data Evaluation

After completion of the 24-hour test on July 2, 1983, a known leakage of 0.5418 weight percent/day was induced. The inspectors independently monitored and evaluated leak rate data to verify the licensee's calculation of the supplemental leak rate. There was acceptable agreement between the inspectors' and licensee's leak rate calculations as indicated in the following summary (units are in weight percent per day):

<u>Measurement</u>	<u>Licensee</u>	<u>Inspector</u>
Measured leakage (L_c) rate during supplemental test	0.5721	0.5727
L_c at 95% confidence level	0.5992	0.5995
Induced leakage rate (L_o) =	0.5418	0.5302

Appendix J acceptance criterion: $L_o + L_m - 0.25 L_a \leq L_c \leq L_o + L_m + 0.25 L_a$. As indicated above, the supplemental test results satisfied the requirements of 10 CFR Part 50, Appendix J.

No other items of noncompliance or deviations were identified.

9. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. Open items disclosed during the inspection are discussed in Paragraphs 6, 8a (two), 8c, and 8.f.

10. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item disclosed during this inspection is discussed in Paragraph 6.

11. Exit Interview on July 15, 1983

The inspector met with licensee representatives (denoted in Paragraph 1) on July 15, 1983, and summarized the scope and findings of the inspection on Unit 1 startup activities. The licensee acknowledged the inspector's comments.

12. Exit Interview on July 22, 1983

The inspectors met with licensee representatives (denoted in Paragraph 1) on July 22, 1983, and summarized the scope and findings of the Unit 2 preoperational inspection activities. The licensee acknowledged the statements by the inspectors with respect to the items of noncompliance (Paragraphs 3.b., 8.c., and 8.d.).