

ILOT 16-01  
NRC EXAM  
RO Reference Package


	Salem Unit 2	LEVEL 2 – REFERENCE USE	Page 100 of 111
		S2.RE-RA.ZZ-0016(Q)	
CURVE BOOK – Salem Unit 2 Cycle 23			

Table 2-1 (Continued)

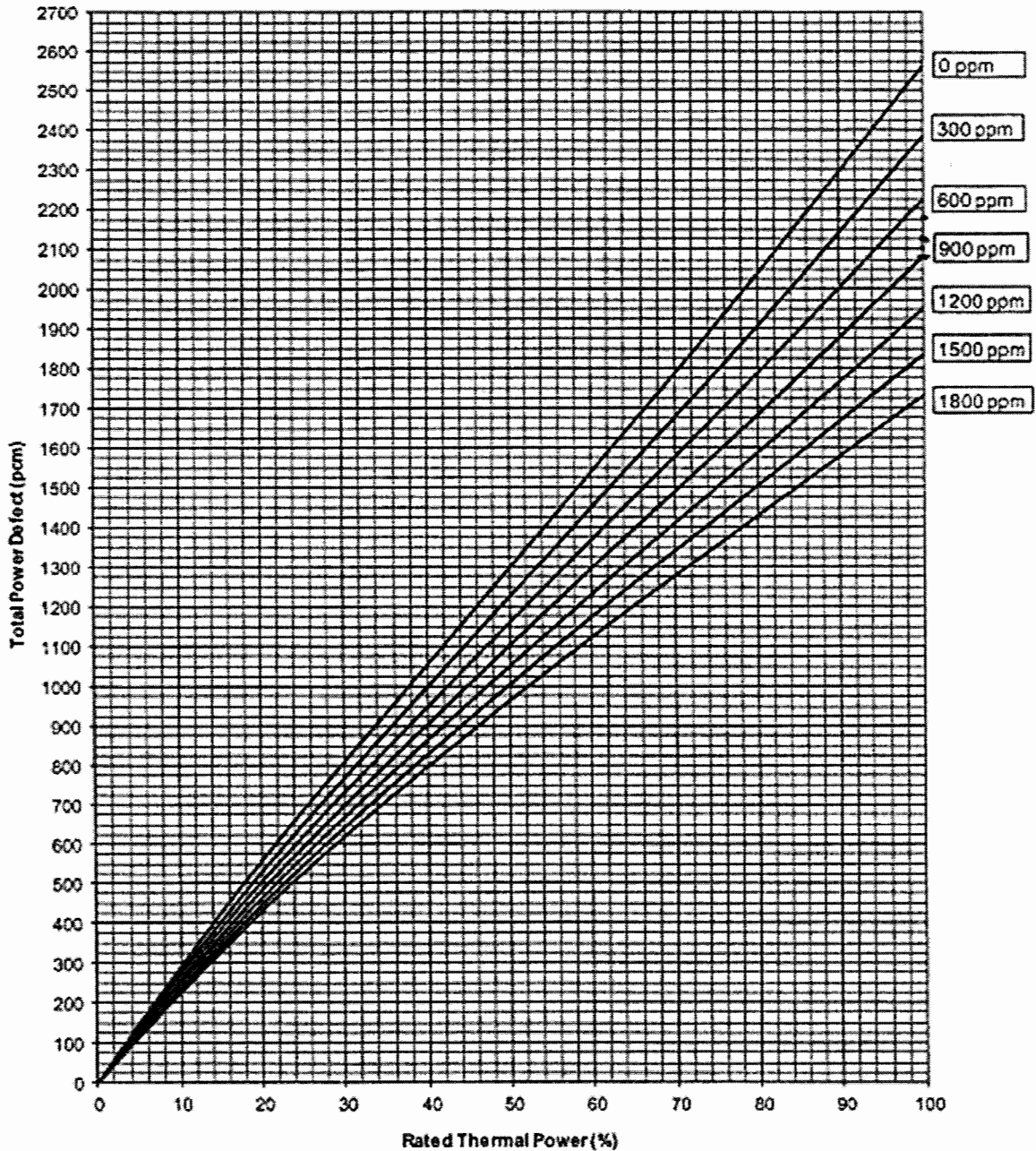
Data Points for Curvebook Figure 17A  
 MOL Total Power Defect (pcm) as a Function of Power and Boron Concentration  
 Burnup = 6095.8 EFPH, Range = 3962.3 - 8432.4 EFPH

Power Level (%)	Boron Concentration (ppm)															
	0	100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	148	146	144	141	139	137	135	134	133	132	131	130	129	128	127	126
10	290	285	281	276	272	267	263	261	260	258	256	254	252	250	249	247
15	426	419	412	405	399	393	387	384	381	378	375	373	370	367	365	362
20	558	548	539	530	522	514	506	502	498	494	491	487	484	480	477	473
25	686	674	662	651	641	631	621	616	611	607	602	598	593	589	585	581
30	810	796	782	769	757	744	733	727	721	716	710	705	700	695	689	685
35	933	917	901	885	870	856	842	835	829	822	816	810	803	797	791	786
40	1055	1036	1017	999	982	965	949	942	934	926	919	912	905	898	891	884
45	1176	1154	1133	1112	1093	1074	1055	1046	1038	1029	1021	1013	1004	997	989	981
50	1297	1272	1248	1225	1202	1181	1160	1150	1140	1131	1121	1112	1103	1094	1085	1076
55	1418	1390	1363	1337	1312	1288	1265	1254	1242	1232	1221	1210	1200	1190	1180	1170
60	1540	1509	1479	1450	1422	1395	1369	1356	1344	1332	1320	1308	1297	1286	1275	1264
65	1663	1628	1595	1563	1532	1502	1473	1459	1446	1432	1419	1406	1393	1381	1369	1357
70	1787	1749	1712	1677	1643	1610	1578	1563	1548	1533	1518	1504	1490	1476	1463	1449
75	1913	1871	1831	1792	1754	1718	1684	1667	1650	1634	1618	1602	1587	1572	1557	1542
80	2040	1994	1950	1908	1867	1828	1790	1771	1753	1735	1718	1701	1684	1667	1651	1635
83	2117	2069	2022	1978	1935	1894	1854	1834	1815	1797	1778	1760	1742	1725	1708	1691
85	2168	2119	2071	2025	1981	1938	1897	1877	1857	1838	1819	1800	1782	1764	1746	1729
90	2298	2245	2193	2143	2096	2049	2005	1983	1962	1941	1920	1900	1880	1861	1842	1823
95	2429	2372	2316	2263	2211	2162	2114	2090	2067	2045	2023	2001	1980	1958	1938	1918
99	2535	2474	2416	2359	2305	2252	2202	2177	2153	2129	2105	2082	2060	2037	2016	1994
100	2581	2500	2440	2383	2328	2275	2224	2199	2174	2150	2126	2103	2080	2057	2035	2013



**Figure 17A**

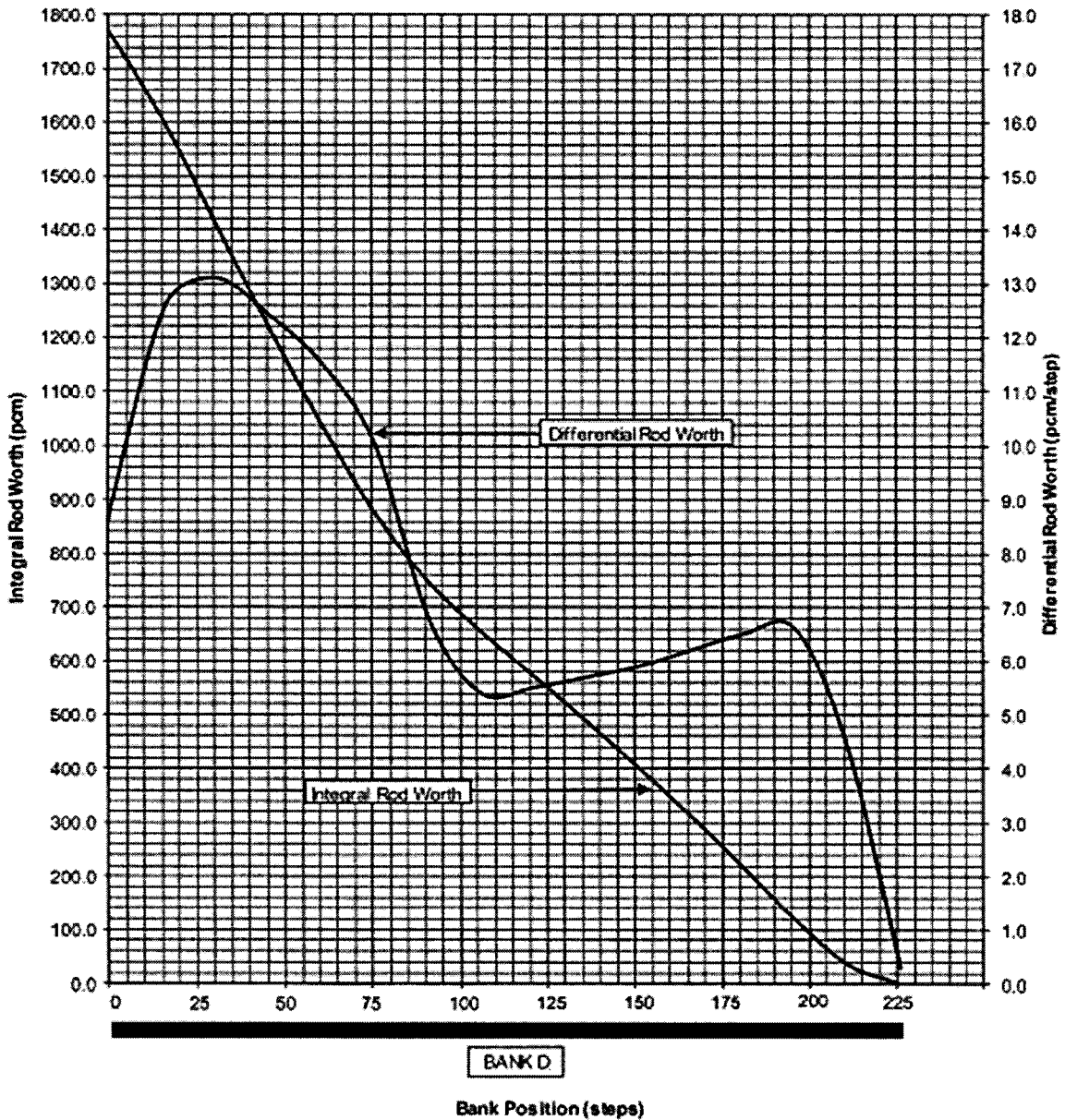
MOL Total Power Defect vs. Power Level  
Burnup = 6095.8 EFPH, Range = 3962.3 - 8432.4 EFPH





### Figure 2C

MOL2 HFP Differential and Integral Rod Worth vs. RCCA Steps Withdrawn  
Control Banks D and C Moving with 128 Step Separation  
Burnup = 8534.1 EFPH, Range = 7315.0 - 9651.5 EFPH, Eq X<sub>6</sub>



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### 3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

#### ACCUMULATORS

#### LIMITING CONDITION FOR OPERATION

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3.5.1 Each reactor coolant system accumulator shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained volume of between 6223 and 6500 gallons of borated water,
- c. A boron concentration of between [REDACTED] ppm, and
- d. A nitrogen cover-pressure of between 595.5 and 647.5 psig.

APPLICABILITY: MODES 1, 2 and 3\*.

#### ACTION:

- a. With one accumulator inoperable, except as a result of a closed isolation valve or boron concentration outside the required limits, restore the inoperable accumulator to OPERABLE status within 24 hours or be in HOT SHUTDOWN within the next 12 hours.
- b. With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within 24 hours and be in HOT SHUTDOWN within the next 12 hours.
- c. With the boron concentration of one accumulator outside the required limits, restore the boron concentration to within the required limits within 72 hours or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than or equal to 1000 psig within the next 6 hours.

## 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

### CONTAINMENT SPRAY SYSTEM

#### LIMITING CONDITION FOR OPERATION

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3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWST and transferring suction to the RHR pump discharge.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable spray system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

- a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. By verifying, that on recirculation flow, each pump develops a differential pressure of greater than or equal to 204 psid when tested pursuant to the INSERVICE TESTING PROGRAM.
- c. In accordance with the Surveillance Frequency Control Program during shutdown, by:
  1. Verifying that each automatic valve in the flow path actuates to its correct position on a Containment High-High pressure test signal.
  2. Verifying each spray pump starts automatically on a Containment High-High pressure test signal.
- d. Following activities that could result in nozzle blockage, either evaluate the work performed to determine the impact to the containment spray system, or perform an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

## INSTRUMENTATION

### 3/4.3.3 MONITORING INSTRUMENTATION

#### RADIATION MONITORING INSTRUMENTATION

##### LIMITING CONDITION FOR OPERATION

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3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

- a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.
- b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.
- c. The provisions of Specification 3.0.3 are not applicable.

##### SURVEILLANCE REQUIREMENTS

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4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations in accordance with the Surveillance Frequency Control Program.



TABLE 3.3-6  
RADIATION MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
1. AREA MONITORS					
a. Fuel Storage Area	1	*	≤15 mR/hr	10 <sup>-1</sup> -10 <sup>4</sup> mR/hr	23
2. PROCESS MONITORS					
a. Containment					
1) Gaseous Activity					
a) Purge & Pressure Vacuum Relief Isolation	1#	1,2,3,4&5	per ODCM Control 3.3.3.9	10 <sup>1</sup> -10 <sup>6</sup> cpm	26
b) RCS Leakage Detection	1	1,2,3&4	N/A	10 <sup>1</sup> -10 <sup>6</sup> cpm	24
2) Air Particulate Activity					
a) (NOT USED)					
b) RCS Leakage Detection	1	1,2,3&4	N/A	10 <sup>1</sup> -10 <sup>6</sup> cpm	24

\* With fuel in the storage pool or building.

# The plant vent noble gas monitor may also function in this capacity when the purge/pressure-vacuum relief isolation valves are open.

TABLE 3.3-6 (Continued)  
RADIATION MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
<b>2. PROCESS MONITORS</b>					
b. Noble Gas Effluent Monitors					
1) Medium Range Auxiliary Building Exhaust System (Plant Vent)	1	1,2,3&4	$\leq 3.0 \times 10^{-2} \mu\text{Ci}/\text{cm}^3$ (Alarm only)	$10^{-3} - 10^1 \mu\text{Ci}/\text{cm}^3$	26
2) High Range Auxiliary Building Exhaust System (Plant Vent)	1	1,2,3&4	$\leq 1.0 \times 10^2 \mu\text{Ci}/\text{cm}^3$ (Alarm only)	$10^{-1} - 10^5 \mu\text{Ci}/\text{cm}^3$	26
3) Condenser Exhaust System	1	1,2,3&4	$\leq 7.12 \times 10^4 \text{ cpm}$ (Alarm only)	$1 - 10^6 \text{ cpm}$	26
<b>3. CONTROL ROOM</b>					
a. Air Intake - Radiation Level	2/Intake##	**	$\leq 2.48 \times 10^3 \text{ cpm}$	$10^1 - 10^7 \text{ cpm}$	27,28

## — Control Room air intakes shared between Unit 1 and 2.

\*\* ALL MODES and during movement of irradiated fuel assemblies and during CORE ALTERATIONS.

