

**Catawba Unit 1 Cycle 10**  
**Core Operating Limits Report**  
**May 1997**

Duke Power Company

		Date
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**QA Condition 1**

The contents of this document have been reviewed to verify that no material herein either directly or indirectly changes the results and conclusions presented in the 10CFR50.59 Catawba 1 Cycle 10 Reload Safety Evaluation.

INSERTION SHEET FOR REVISION 10

Remove

Pages 1,2,3,19

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## REVISION LOG

<u>Revision</u>	<u>Effective Date</u>	<u>Comment</u>
Original Issue	September 8, 1992	C1C07 COLR
Revision 1	October 10, 1992	C1C07 COLR rev 1
Revision 2	December 1, 1993	C1C08 COLR
Revision 3	April 14, 1994	C1C08 COLR rev 1
Revision 4	October 24, 1994	C1C08 COLR rev 2
Revision 5	November 30, 1994	C1C08 COLR rev 3
Revision 6	February 15, 1995	C1C09 COLR
Revision 7	April 12, 1995	C1C09 COLR rev 1
Revision 8	September 28, 1995	C1C09 COLR rev 2
Revision 9	August 2, 1996	C1C10 COLR
Revision 10	May 28, 1997	C1C10 COLR rev 1



**3.8 Boron Dilution Mitigation System (Specification 3/4.3.3.11)****3.8.1 Reactor Water Makeup Pump flowrate limits:**

<u>Applicable Mode</u>	<u>Limit</u>
Mode 3	$\leq 150$ gpm
Mode 4 or 5	$\leq 70$ gpm

**3.9 Accumulators (Specification 3/4.5.1)****3.9.1 Boron concentration limits during modes 1, 2, and 3:**

<u>Parameter</u>	<u>Limit</u>
Cold Leg Accumulator minimum boron concentration for LCO 3.5.1c	2,375 ppm
Cold Leg Accumulator maximum boron concentration for LCO 3.5.1c	2,975 ppm
Minimum Cold Leg Accumulator boron concentration required to ensure post-LOCA subcriticality	2,279 ppm

**3.10 Refueling Water Storage Tank (Specification 3/4.5.4)****3.10.1 Boron concentration limits during modes 1, 2, 3, and 4:**

<u>Parameter</u>	<u>Limit</u>
Refueling Water Storage Tank minimum boron concentration for LCO 3.5.4b	2,475 ppm
Refueling Water Storage Tank maximum boron concentration for LCO 3.5.4b	2,975 ppm

TABLE 5

F-DEL-H &amp; M-DEL-H VALUES - NORMAL OPERATION

AT 100% POWER, 4 EFPD

	H	G	F	E	D	C	B	A
8	* 1.0350 *	* 1.3360 *	* 1.1100 *	* 1.3220 *	* 1.2660 *	* 1.0180 *	* 1.2370 *	* .6900 *
	* 1.5744 *	* 1.2663 *	* 1.4982 *	* 1.2424 *	* 1.2819 *	* 1.5750 *	* 1.2792 *	* 2.2477 *
9	* 1.3360 *	* 1.2700 *	* 1.3520 *	* 1.2880 *	* 1.3150 *	* 1.2660 *	* 1.3650 *	* .8980 *
	* 1.2663 *	* 1.3200 *	* 1.2285 *	* 1.2762 *	* 1.2432 *	* 1.2665 *	* 1.1673 *	* 1.7342 *
10	* 1.1100 *	* 1.3530 *	* 1.0650 *	* 1.3650 *	* 1.1350 *	* 1.3840 *	* 1.1930 *	* .8400 *
	* 1.4982 *	* 1.2285 *	* 1.5672 *	* 1.2228 *	* 1.4649 *	* 1.1838 *	* 1.3463 *	* 1.8590 *
11	* 1.3220 *	* 1.2880 *	* 1.3660 *	* 1.3000 *	* 1.3800 *	* 1.2590 *	* 1.3300 *	* .6110 *
	* 1.2424 *	* 1.2771 *	* 1.2221 *	* 1.2817 *	* 1.2040 *	* 1.3078 *	* 1.2240 *	* 2.5865 *
12	* 1.2660 *	* 1.3150 *	* 1.1370 *	* 1.3830 *	* 1.0900 *	* 1.3510 *	* 1.0570 *	
	* 1.2819 *	* 1.2433 *	* 1.4636 *	* 1.2015 *	* 1.4611 *	* 1.2161 *	* 1.5413 *	
13	* 1.0180 *	* 1.2680 *	* 1.3870 *	* 1.2620 *	* 1.3580 *	* 1.1870 *	* .6810 *	
	* 1.5750 *	* 1.2650 *	* 1.1818 *	* 1.3049 *	* 1.2110 *	* 1.3770 *	* 2.2910 *	
14	* 1.2370 *	* 1.3690 *	* 1.1960 *	* 1.3350 *	* 1.0640 *	* .7020 *		
	* 1.2792 *	* 1.1648 *	* 1.3441 *	* 1.2205 *	* 1.5334 *	* 2.2260 *		
15	* .6900 *	* .9010 *	* .8420 *	* .6120 *	F-DEL-H			
	* 2.2477 *	* 1.7307 *	* 1.8559 *	* 2.5845 *	M-DEL-H			

AT 100% POWER, 100 EFPD

	H	G	F	E	D	C	B	A
8	* 1.0390 *	* 1.3670 *	* 1.1090 *	* 1.3630 *	* 1.2550 *	* .9970 *	* 1.1640 *	* .6650 *
	* 1.5560 *	* 1.2088 *	* 1.4863 *	* 1.2180 *	* 1.2671 *	* 1.5692 *	* 1.3262 *	* 2.2697 *
9	* 1.3670 *	* 1.2760 *	* 1.3790 *	* 1.2890 *	* 1.3380 *	* 1.2260 *	* 1.3150 *	* .8610 *
	* 1.2088 *	* 1.2905 *	* 1.2158 *	* 1.2545 *	* 1.2338 *	* 1.2886 *	* 1.2209 *	* 1.7667 *
10	* 1.1090 *	* 1.3790 *	* 1.0670 *	* 1.3880 *	* 1.1430 *	* 1.3840 *	* 1.1480 *	* .8120 *
	* 1.4863 *	* 1.2158 *	* 1.5242 *	* 1.2106 *	* 1.4282 *	* 1.1951 *	* 1.4059 *	* 1.8839 *
11	* 1.3630 *	* 1.2880 *	* 1.3890 *	* 1.2990 *	* 1.4060 *	* 1.2380 *	* 1.2880 *	* .5960 *
	* 1.2180 *	* 1.2545 *	* 1.2097 *	* 1.2586 *	* 1.1891 *	* 1.3076 *	* 1.2530 *	* 2.6057 *
12	* 1.2550 *	* 1.3390 *	* 1.1440 *	* 1.4080 *	* 1.0940 *	* 1.3380 *	* 1.0130 *	
	* 1.2671 *	* 1.2338 *	* 1.4270 *	* 1.1874 *	* 1.4567 *	* 1.2041 *	* 1.5752 *	
13	* .9970 *	* 1.2270 *	* 1.3850 *	* 1.2400 *	* 1.3400 *	* 1.1520 *	* .6710 *	
	* 1.5692 *	* 1.2875 *	* 1.1943 *	* 1.3059 *	* 1.1999 *	* 1.3842 *	* 2.3395 *	
14	* 1.1640 *	* 1.3170 *	* 1.1500 *	* 1.2910 *	* 1.0170 *	* .6870 *		
	* 1.3262 *	* 1.2191 *	* 1.4044 *	* 1.2505 *	* 1.5689 *	* 2.2870 *		
15	* .6650 *	* .8630 *	* .8140 *	* .5960 *	F-DEL-H			
	* 2.2697 *	* 1.7633 *	* 1.8795 *	* 2.6057 *	M-DEL-H			

TABLE 5 (CONTINUED)

F-DEL-H &amp; M-DEL-H VALUES - NORMAL OPERATION

AT 100% POWER, 200 EFPD

	H	G	F	E	D	C	B	A
8	* 1.0570	* 1.3900	* 1.1230	* 1.3940	* 1.2520	* .9950	* 1.1260	* .6610
	* 1.5022	* 1.1901	* 1.4557	* 1.1641	* 1.2554	* 1.5528	* 1.3527	* 2.2511
9	* 1.3900	* 1.2780	* 1.3980	* 1.2900	* 1.3490	* 1.2040	* 1.2710	* .8480
	* 1.1901	* 1.2734	* 1.1800	* 1.2571	* 1.1930	* 1.2957	* 1.2118	* 1.7715
10	* 1.1230	* 1.3980	* 1.0840	* 1.3960	* 1.1440	* 1.3670	* 1.1150	* .8050
	* 1.4557	* 1.1795	* 1.4826	* 1.1784	* 1.4092	* 1.1825	* 1.3971	* 1.8786
11	* 1.3940	* 1.2900	* 1.3970	* 1.2850	* 1.4010	* 1.2100	* 1.2430	* .5940
	* 1.1641	* 1.2580	* 1.1784	* 1.2550	* 1.1554	* 1.3182	* 1.2793	* 2.5812
12	* 1.2520	* 1.3490	* 1.1440	* 1.4020	* 1.0840	* 1.3090	* .9770	*
	* 1.2554	* 1.1925	* 1.4082	* 1.1545	* 1.4445	* 1.2110	* 1.6075	*
13	* .9950	* 1.2040	* 1.3680	* 1.2110	* 1.3100	* 1.1130	* .6660	*
	* 1.5528	* 1.2951	* 1.1816	* 1.3171	* 1.2093	* 1.4086	* 2.3227	*
14	* 1.1260	* 1.2720	* 1.1160	* 1.2440	* .9800	* .6780	*	*
	* 1.3527	* 1.2109	* 1.3959	* 1.2781	* 1.6044	* 2.2830	*	*
15	* .6610	* .8490	* .8050	* .5940	F-DEL-H			
	* 2.2511	* 1.7697	* 1.8763	* 2.5853	M-DEL-H			

AT 100% POWER, 300 EFPD

	H	G	F	E	D	C	B	A
8	* 1.0650	* 1.3970	* 1.1300	* 1.4040	* 1.2450	* .9980	* 1.1120	* .6730
	* 1.4840	* 1.1608	* 1.4266	* 1.1363	* 1.2615	* 1.5528	* 1.3761	* 2.1960
9	* 1.3970	* 1.2680	* 1.4010	* 1.2800	* 1.3610	* 1.1870	* 1.2450	* .8540
	* 1.1608	* 1.2781	* 1.1550	* 1.2451	* 1.1635	* 1.3162	* 1.2423	* 1.7714
10	* 1.1300	* 1.4020	* 1.0890	* 1.3910	* 1.1360	* 1.3470	* 1.0960	* .8130
	* 1.4266	* 1.1542	* 1.4715	* 1.1597	* 1.4158	* 1.1854	* 1.4259	* 1.8712
11	* 1.4040	* 1.2800	* 1.3920	* 1.2610	* 1.3760	* 1.1820	* 1.2180	* .6060
	* 1.1363	* 1.2451	* 1.1597	* 1.2752	* 1.1673	* 1.3477	* 1.3085	* 2.5467
12	* 1.2450	* 1.3610	* 1.1360	* 1.3760	* 1.0680	* 1.2750	* .9590	*
	* 1.2615	* 1.1635	* 1.4152	* 1.1664	* 1.4614	* 1.2398	* 1.6429	*
13	* .9980	* 1.1870	* 1.3470	* 1.1830	* 1.2760	* 1.0890	* .6730	*
	* 1.5528	* 1.3161	* 1.1853	* 1.3470	* 1.2390	* 1.4408	* 2.2692	*
14	* 1.1120	* 1.2450	* 1.0960	* 1.2190	* .9610	* .6820	*	*
	* 1.3761	* 1.2422	* 1.4247	* 1.3076	* 1.6396	* 2.2374	*	*
15	* .6730	* .8550	* .8130	* .6050	F-DEL-H			
	* 2.1960	* 1.7695	* 1.8711	* 2.5510	M-DEL-H			



TABLE 5 (CONTINUED)

F-DEL-H &amp; M-DEL-H VALUES - NORMAL OPERATION

AT 100% POWER, 385 EFPD

	H	G	F	E	D	C	B	A
8	* 1.0490	* 1.3640	* 1.1160	* 1.3790	* 1.2240	* 1.0020	* 1.1170	* .6980
	* 1.6729	* 1.1794	* 1.4325	* 1.1580	* 1.2914	* 1.5421	* 1.3760	* 2.1596
9	* 1.3640	* 1.2350	* 1.3700	* 1.2510	* 1.3470	* 1.1750	* 1.2380	* .8770
	* 1.1794	* 1.2861	* 1.1792	* 1.2763	* 1.1814	* 1.3254	* 1.2702	* 1.7337
10	* 1.1160	* 1.3710	* 1.0760	* 1.3630	* 1.1220	* 1.3310	* 1.0930	* .8380
	* 1.4325	* 1.1787	* 1.4735	* 1.1834	* 1.4107	* 1.2098	* 1.4504	* 1.8264
11	* 1.3790	* 1.2510	* 1.3640	* 1.2320	* 1.3510	* 1.1660	* 1.2130	* .6310
	* 1.1580	* 1.2772	* 1.1830	* 1.2843	* 1.1873	* 1.3492	* 1.3038	* 2.4539
12	* 1.2240	* 1.3470	* 1.1220	* 1.3510	* 1.0570	* 1.2570	* .9640	
	* 1.2914	* 1.1814	* 1.4094	* 1.1873	* 1.4512	* 1.2428	* 1.6168	
13	* 1.0020	* 1.1750	* 1.3300	* 1.1660	* 1.2580	* 1.0880	* .6950	
	* 1.5421	* 1.3254	* 1.2097	* 1.3491	* 1.2420	* 1.4249	* 2.2021	
14	* 1.1170	* 1.2380	* 1.0940	* 1.2130	* .9650	* .7030		
	* 1.3760	* 1.2691	* 1.4495	* 1.3037	* 1.6136	* 2.1772		
15	* .6980	* .8780	* .8380	* .6290	F-DEL-H			
	* 2.1596	* 1.7320	* 1.8262	* 2.4589	M-DEL-H			

AT 75% POWER, 4 EFPD

	H	G	F	E	D	C	B	A
8	* .9940	* 1.3190	* 1.1160	* 1.3410	* 1.2860	* 1.0310	* 1.2620	* .6970
	* 1.9901	* 1.5610	* 1.7948	* 1.4678	* 1.5068	* 1.8453	* 1.5093	* 2.6583
9	* 1.3190	* 1.2680	* 1.3660	* 1.3010	* 1.3360	* 1.2890	* 1.3970	* .9100
	* 1.5610	* 1.6254	* 1.4720	* 1.5076	* 1.4694	* 1.4869	* 1.3702	* 2.0534
10	* 1.1160	* 1.3660	* 1.0640	* 1.3740	* 1.1350	* 1.4060	* 1.2120	* .8480
	* 1.7948	* 1.4721	* 1.8854	* 1.4634	* 1.7727	* 1.4133	* 1.5964	* 2.2121
11	* 1.3410	* 1.3000	* 1.3750	* 1.2990	* 1.3820	* 1.2590	* 1.3400	* .6100
	* 1.4678	* 1.5087	* 1.4624	* 1.5693	* 1.4319	* 1.5985	* 1.5044	* 3.1277
12	* 1.2860	* 1.3370	* 1.1370	* 1.3850	* 1.0470	* 1.3310	* 1.0470	
	* 1.5068	* 1.4694	* 1.7711	* 1.4788	* 1.8241	* 1.4753	* 1.8835	
13	* 1.0310	* 1.2910	* 1.4090	* 1.2610	* 1.3380	* 1.1450	* .6610	
	* 1.8453	* 1.4846	* 1.4103	* 1.5949	* 1.4681	* 1.6731	* 2.8941	
14	* 1.2620	* 1.4010	* 1.2150	* 1.3450	* 1.0530	* .6810		
	* 1.5093	* 1.3675	* 1.5939	* 1.4991	* 1.8728	* 2.8105		
15	* .6970	* .9130	* .8510	* .6110	F-DEL-H			
	* 2.6583	* 2.0474	* 2.2050	* 3.1278	M-DEL-H			

TABLE 5 (CONTINUED)

F-DEL-H &amp; M-DEL-H VALUES - NORMAL OPERATION

AT 75% POWER, 100 EFPD

	H	G	F	E	D	C	B	A
8	* .9950	* 1.3510	* 1.1210	* 1.3910	* 1.2800	* 1.0130	* 1.1900	* .6730
	* 1.9334	* 1.5184	* 1.7649	* 1.4127	* 1.4937	* 1.8522	* 1.5748	* 2.7043
9	* 1.3510	* 1.2790	* 1.3990	* 1.3090	* 1.3670	* 1.2480	* 1.3470	* .8740
	* 1.5184	* 1.5867	* 1.4207	* 1.4888	* 1.4263	* 1.5189	* 1.4013	* 2.1062
10	* 1.1210	* 1.4000	* 1.0700	* 1.4000	* 1.1450	* 1.4060	* 1.1670	* .8210
	* 1.7649	* 1.4207	* 1.8394	* 1.4175	* 1.7266	* 1.3939	* 1.6284	* 2.2478
11	* 1.3910	* 1.3080	* 1.4010	* 1.2990	* 1.4090	* 1.2320	* 1.2950	* .5950
	* 1.4127	* 1.4898	* 1.4166	* 1.5447	* 1.4520	* 1.6044	* 1.5266	* 3.1411
12	* 1.2800	* 1.3670	* 1.1460	* 1.4110	* 1.0390	* 1.3000	* .9980	*
	* 1.4937	* 1.4254	* 1.7255	* 1.4500	* 1.7897	* 1.4735	* 1.9450	*
13	* 1.0130	* 1.2490	* 1.4080	* 1.2340	* 1.3050	* 1.0980	* .6460	*
	* 1.8522	* 1.5177	* 1.3970	* 1.6019	* 1.4676	* 1.7034	* 2.9132	*
14	* 1.1900	* 1.3500	* 1.1690	* 1.2970	* 1.0020	* .6610	*	*
	* 1.5748	* 1.3993	* 1.6258	* 1.5231	* 1.9359	* 2.8474	*	*
15	* .6730	* .8760	* .8230	* .5950	F-DEL-H			
	* 2.7043	* 2.1020	* 2.2452	* 3.1410	M-DEL-H			

AT 75% POWER, 200 EFPD

	H	G	F	E	D	C	B	A
8	* 1.0000	* 1.3770	* 1.1380	* 1.4320	* 1.2850	* 1.0160	* 1.1540	* .6710
	* 1.8798	* 1.4571	* 1.7415	* 1.3705	* 1.4943	* 1.8575	* 1.6321	* 2.7126
9	* 1.3770	* 1.2870	* 1.4230	* 1.3180	* 1.3860	* 1.2300	* 1.3060	* .8630
	* 1.4571	* 1.5757	* 1.4014	* 1.4785	* 1.4006	* 1.5474	* 1.4470	* 2.1517
10	* 1.1380	* 1.4240	* 1.0930	* 1.4190	* 1.1480	* 1.3920	* 1.1350	* .8150
	* 1.7415	* 1.4014	* 1.8055	* 1.4000	* 1.7123	* 1.3983	* 1.6765	* 2.2795
11	* 1.4320	* 1.3170	* 1.4200	* 1.2900	* 1.4040	* 1.2000	* 1.2500	* .5930
	* 1.3705	* 1.4795	* 1.3990	* 1.5543	* 1.4298	* 1.6368	* 1.5599	* 3.1620
12	* 1.2850	* 1.3860	* 1.1480	* 1.4050	* 1.0210	* 1.2450	* .9560	*
	* 1.4943	* 1.4006	* 1.7121	* 1.4283	* 1.7982	* 1.5039	* 2.0191	*
13	* 1.0160	* 1.2300	* 1.3930	* 1.2010	* 1.2470	* 1.0440	* .6340	*
	* 1.8575	* 1.5463	* 1.3981	* 1.6354	* 1.5018	* 1.7622	* 2.9534	*
14	* 1.1540	* 1.3070	* 1.1360	* 1.2520	* .9590	* .6460	*	*
	* 1.6321	* 1.4450	* 1.6750	* 1.5585	* 2.0131	* 2.9022	*	*
15	* .6710	* .8640	* .8160	* .5920	F-DEL-H			
	* 2.7126	* 2.1481	* 2.2770	* 3.1668	M-DEL-H			



TABLE 5 (CONTINUED)

F-DEL-H &amp; M-DEL-H VALUES - NORMAL OPERATION

AT 75% POWER, 300 EFPD

	H	G	F	E	D	C	B	A
8	* .9930	* 1.3820	* 1.1530	* 1.4530	* 1.2860	* 1.0270	* 1.1460	* .6880
	* 1.8210	* 1.4337	* 1.6939	* 1.3497	* 1.4812	* 1.8307	* 1.6367	* 2.6795
9	* 1.3820	* 1.2790	* 1.4360	* 1.3170	* 1.4090	* 1.2190	* 1.2820	* .8740
	* 1.4337	* 1.5552	* 1.3857	* 1.4716	* 1.3813	* 1.5526	* 1.4762	* 2.1263
10	* 1.1530	* 1.4370	* 1.1050	* 1.4250	* 1.1470	* 1.3770	* 1.1190	* .8270
	* 1.6939	* 1.3847	* 1.7535	* 1.3916	* 1.6845	* 1.4151	* 1.6970	* 2.2513
11	* 1.4530	* 1.3160	* 1.4260	* 1.2700	* 1.3770	* 1.1680	* 1.2260	* .6050
	* 1.3497	* 1.4725	* 1.3906	* 1.5600	* 1.4422	* 1.6501	* 1.5868	* 3.0849
12	* 1.2860	* 1.4090	* 1.1470	* 1.3780	* .9910	* 1.1910	* .9310	*
	* 1.4812	* 1.3812	* 1.6840	* 1.4412	* 1.7898	* 1.5460	* 2.0384	*
13	* 1.0270	* 1.2190	* 1.3770	* 1.1680	* 1.1920	* .9980	* .6330	*
	* 1.8307	* 1.5525	* 1.4150	* 1.6499	* 1.5437	* 1.7811	* 2.8940	*
14	* 1.1460	* 1.2830	* 1.1190	* 1.2260	* .9330	* .6420	*	*
	* 1.6367	* 1.4755	* 1.6959	* 1.5866	* 2.0343	* 2.8523	*	*
15	* .6880	* .8750	* .8280	* .6040	* F-DEL-H			
	* 2.6795	* 2.1235	* 2.2511	* 3.0894	* M-DEL-H			

AT 75% POWER, 385 EFPD

	H	G	F	E	D	C	B	A
8	* .9590	* 1.3430	* 1.1440	* 1.4370	* 1.2760	* 1.0400	* 1.1640	* .7210
	* 1.8480	* 1.4512	* 1.6935	* 1.3440	* 1.4918	* 1.8198	* 1.6347	* 2.6055
9	* 1.3430	* 1.2480	* 1.4100	* 1.2950	* 1.4050	* 1.2160	* 1.2850	* .9070
	* 1.4512	* 1.5742	* 1.3806	* 1.4790	* 1.3698	* 1.5631	* 1.4832	* 2.0857
10	* 1.1440	* 1.4110	* 1.0970	* 1.4020	* 1.1410	* 1.3670	* 1.1230	* .8600
	* 1.6935	* 1.3798	* 1.7543	* 1.3869	* 1.6880	* 1.4158	* 1.7035	* 2.2008
11	* 1.4370	* 1.2940	* 1.4030	* 1.2420	* 1.3420	* 1.1690	* 1.2210	* .6330
	* 1.3440	* 1.4790	* 1.3859	* 1.5817	* 1.4693	* 1.6900	* 1.5946	* 3.0090
12	* 1.2760	* 1.4040	* 1.1410	* 1.3420	* .9610	* 1.1500	* .9290	*
	* 1.4918	* 1.3698	* 1.6879	* 1.4681	* 1.8397	* 1.5790	* 2.0710	*
13	* 1.0400	* 1.2160	* 1.3670	* 1.1490	* 1.1570	* .9730	* .6450	*
	* 1.8198	* 1.5640	* 1.4157	* 1.6917	* 1.5778	* 1.8337	* 2.8890	*
14	* 1.1640	* 1.2850	* 1.1230	* 1.2210	* .9300	* .6530	*	*
	* 1.6347	* 1.4823	* 1.7032	* 1.5945	* 2.0668	* 2.8539	*	*
15	* .7210	* .9080	* .8600	* .6310	* F-DEL-H			
	* 2.6055	* 2.0836	* 2.2006	* 3.0140	* M-DEL-H			

## Catawba 1 Cycle 10 Core Operating Limits Report

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Appendix A

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TABLE 5 (CONTINUED)

F-DEL-H &amp; M-DEL-H VALUES - NORMAL OPERATION

AT 50% POWER, 4 EFPD

	H	G	F	E	D	C	B	A
8	* .9550	* 1.3000	* 1.1220	* 1.3620	* 1.3060	* 1.0460	* 1.2880	* .7050
	* 2.1653	* 1.7038	* 2.0600	* 1.7095	* 1.7418	* 2.1377	* 1.7354	* 3.0891
9	* 1.3000	* 1.2670	* 1.3800	* 1.3190	* 1.3580	* 1.3140	* 1.4300	* .9230
	* 1.7038	* 1.7857	* 1.6774	* 1.7444	* 1.7109	* 1.7121	* 1.5932	* 2.3870
10	* 1.1220	* 1.3810	* 1.0630	* 1.3880	* 1.1350	* 1.4290	* 1.2310	* .8580
	* 2.0600	* 1.6774	* 2.1328	* 1.6355	* 1.9585	* 1.5903	* 1.8382	* 2.5850
11	* 1.3620	* 1.3180	* 1.3890	* 1.3000	* 1.3830	* 1.2570	* 1.3480	* .6100
	* 1.7095	* 1.7456	* 1.6343	* 1.6887	* 1.5982	* 1.7193	* 1.6232	* 3.5892
12	* 1.3060	* 1.3590	* 1.1370	* 1.3860	* 1.0130	* 1.3090	* 1.0350	*
	* 1.7418	* 1.7109	* 1.9551	* 1.5975	* 1.9620	* 1.5784	* 2.0321	*
13	* 1.0460	* 1.3160	* 1.4330	* 1.2600	* 1.3160	* 1.0990	* .6400	*
	* 2.1377	* 1.7083	* 1.5869	* 1.7131	* 1.5708	* 1.8007	* 3.1405	*
14	* 1.2880	* 1.4340	* 1.2350	* 1.3530	* 1.0420	* .6600	*	*
	* 1.7354	* 1.5900	* 1.8338	* 1.6162	* 2.0208	* 3.0500	*	*
15	* .7050	* .9260	* .8600	* .6110	* F-DEL-H			
	* 3.0891	* 2.3802	* 2.5796	* 3.5835	* M-DEL-H			

AT 50% POWER, 100 EFPD

	H	G	F	E	D	C	B	A
8	* .9330	* 1.3310	* 1.1410	* 1.4320	* 1.3200	* 1.0420	* 1.2170	* .6890
	* 2.1272	* 1.6432	* 1.9206	* 1.5235	* 1.6157	* 2.0142	* 1.7061	* 2.9784
9	* 1.3310	* 1.2840	* 1.4280	* 1.3410	* 1.4090	* 1.2820	* 1.3940	* .8970
	* 1.6432	* 1.7301	* 1.5364	* 1.6020	* 1.5352	* 1.6424	* 1.5114	* 2.3141
10	* 1.1410	* 1.4290	* 1.0760	* 1.4300	* 1.1500	* 1.4360	* 1.1950	* .8390
	* 1.9206	* 1.5363	* 1.9955	* 1.5306	* 1.8798	* 1.5052	* 1.7718	* 2.4810
11	* 1.4320	* 1.3400	* 1.4310	* 1.3040	* 1.4070	* 1.2250	* 1.2980	* .5980
	* 1.5235	* 1.6031	* 1.5295	* 1.6687	* 1.5512	* 1.7303	* 1.6635	* 3.4911
12	* 1.3200	* 1.4090	* 1.1510	* 1.4100	* .9760	* 1.2450	* .9740	*
	* 1.6157	* 1.5352	* 1.8782	* 1.5512	* 1.9293	* 1.5756	* 2.1026	*
13	* 1.0420	* 1.2830	* 1.4380	* 1.2270	* 1.2510	* 1.0120	* .6120	*
	* 2.0142	* 1.6411	* 1.5031	* 1.7277	* 1.5700	* 1.8320	* 3.1686	*
14	* 1.2170	* 1.3970	* 1.1980	* 1.3010	* .9790	* .6270	*	*
	* 1.7061	* 1.5082	* 1.7689	* 1.6591	* 2.0926	* 3.0928	*	*
15	* .6890	* .8990	* .8410	* .5980	* F-DEL-H			
	* 2.9784	* 2.3094	* 2.4753	* 3.4908	* M-DEL-H			

TABLE 5 (CONTINUED)

F-DEL-H &amp; M-DEL-H VALUES - NORMAL OPERATION

AT 50% POWER, 200 EFPD

	H	G	F	E	D	C	B	A
8	* .9280	* 1.3570	* 1.1640	* 1.4870	* 1.3340	* 1.0480	* 1.1640	* .6730
	* 2.0276	* 1.5942	* 1.8576	* 1.4723	* 1.5905	* 1.9846	* 1.7362	* 2.9596
9	* 1.3570	* 1.2870	* 1.4520	* 1.3570	* 1.4410	* 1.2690	* 1.3480	* .8780
	* 1.5942	* 1.6836	* 1.5081	* 1.5732	* 1.5064	* 1.6503	* 1.5508	* 2.3250
10	* 1.1640	* 1.4520	* 1.0790	* 1.4490	* 1.1650	* 1.4350	* 1.1670	* .8330
	* 1.8576	* 1.5080	* 1.9191	* 1.5064	* 1.8289	* 1.4769	* 1.8032	* 2.4789
11	* 1.4870	* 1.3560	* 1.4500	* 1.2930	* 1.4070	* 1.1980	* 1.2710	* .5990
	* 1.4723	* 1.5734	* 1.5073	* 1.6593	* 1.5415	* 1.7360	* 1.6089	* 3.2739
12	* 1.3340	* 1.4420	* 1.1760	* 1.4090	* .9510	* 1.1880	* .9370	*
	* 1.5905	* 1.5064	* 1.8273	* 1.5398	* 1.9060	* 1.6228	* 2.1266	*
13	* 1.0480	* 1.2700	* 1.4360	* 1.1990	* 1.1920	* .9540	* .6020	*
	* 1.9846	* 1.6499	* 1.4758	* 1.7343	* 1.6197	* 1.8748	* 3.1567	*
14	* 1.1640	* 1.3500	* 1.1680	* 1.2720	* .9400	* .6140	*	*
	* 1.7362	* 1.5485	* 1.8015	* 1.6074	* 2.1198	* 3.1000	*	*
15	* .6730	* .8790	* .8330	* .5990	F-DEL-H			
	* 2.9596	* 2.3227	* 2.4758	* 3.2780	M-DEL-H			

AT 50% POWER, 300 EFPD

	H	G	F	E	D	C	B	A
8	* .9170	* 1.3620	* 1.1750	* 1.5140	* 1.3400	* 1.0590	* 1.1370	* .6750
	* 1.9095	* 1.5271	* 1.8137	* 1.4227	* 1.5766	* 1.9688	* 1.7667	* 2.9370
9	* 1.3620	* 1.2710	* 1.4600	* 1.3580	* 1.4710	* 1.2610	* 1.3200	* .8800
	* 1.5271	* 1.6620	* 1.4595	* 1.5558	* 1.4596	* 1.6626	* 1.5810	* 2.3289
10	* 1.1750	* 1.4600	* 1.0720	* 1.4520	* 1.1710	* 1.4280	* 1.1520	* .8430
	* 1.8137	* 1.4586	* 1.8750	* 1.4658	* 1.8049	* 1.4610	* 1.8028	* 2.4729
11	* 1.5140	* 1.3580	* 1.4520	* 1.2690	* 1.3840	* 1.1750	* 1.2540	* .6160
	* 1.4227	* 1.5568	* 1.4658	* 1.6689	* 1.5250	* 1.7232	* 1.6049	* 3.2047
12	* 1.3400	* 1.4710	* 1.1710	* 1.3850	* .9260	* 1.1470	* .9220	*
	* 1.5766	* 1.4596	* 1.8035	* 1.5239	* 1.8924	* 1.6351	* 2.1432	*
13	* 1.0590	* 1.2610	* 1.4280	* 1.1750	* 1.1500	* .9270	* .6080	*
	* 1.9688	* 1.6624	* 1.4609	* 1.7229	* 1.6325	* 1.9215	* 3.1596	*
14	* 1.1370	* 1.3210	* 1.1520	* 1.2540	* .9240	* .6180	*	*
	* 1.7667	* 1.5797	* 1.8011	* 1.6039	* 2.1384	* 3.1138	*	*
15	* .6750	* .8810	* .8430	* .6140	F-DEL-H			
	* 2.9370	* 2.3266	* 2.4726	* 3.2086	M-DEL-H			



TABLE 5 (CONTINUED)

F-DEL-H &amp; M-DEL-H VALUES - NORMAL OPERATION

AT 50% POWER, 385 EFPD

	H	G	F	E	D	C	B	A
8	* .8820 *	* 1.3210 *	* 1.1620 *	* 1.4970 *	* 1.3290 *	* 1.0710 *	* 1.1340 *	* .6930 *
	* 1.7484 *	* 1.5267 *	* 1.8044 *	* 1.4159 *	* 1.5820 *	* 1.9545 *	* 1.7672 *	* 2.8619 *
9	* 1.3210 *	* 1.2260 *	* 1.4250 *	* 1.3380 *	* 1.4670 *	* 1.2600 *	* 1.3230 *	* .9040 *
	* 1.5267 *	* 1.6746 *	* 1.4584 *	* 1.5625 *	* 1.4488 *	* 1.6719 *	* 1.5934 *	* 2.2879 *
10	* 1.1620 *	* 1.4250 *	* 1.0450 *	* 1.4240 *	* 1.1660 *	* 1.4240 *	* 1.1600 *	* .8750 *
	* 1.8044 *	* 1.4577 *	* 1.8662 *	* 1.4669 *	* 1.8022 *	* 1.4904 *	* 1.8362 *	* 2.4218 *
11	* 1.4970 *	* 1.3370 *	* 1.4240 *	* 1.2330 *	* 1.3510 *	* 1.1680 *	* 1.2620 *	* .6500 *
	* 1.4159 *	* 1.5635 *	* 1.4663 *	* 1.6902 *	* 1.5403 *	* 1.7724 *	* 1.6401 *	* 3.1577 *
12	* 1.3290 *	* 1.4670 *	* 1.1660 *	* 1.3520 *	* .9020 *	* 1.1350 *	* .9350 *	
	* 1.5820 *	* 1.4488 *	* 1.8015 *	* 1.5392 *	* 1.7066 *	* 1.6599 *	* 2.1829 *	
13	* 1.0710 *	* 1.2590 *	* 1.4240 *	* 1.1670 *	* 1.1370 *	* .9290 *	* .6330 *	
	* 1.9545 *	* 1.6717 *	* 1.4902 *	* 1.7721 *	* 1.6586 *	* 1.9359 *	* 3.1025 *	
14	* 1.1340 *	* 1.3230 *	* 1.1610 *	* 1.2620 *	* .9360 *	* .6410 *		
	* 1.7672 *	* 1.5926 *	* 1.8360 *	* 1.6405 *	* 2.1784 *	* 3.0620 *		
15	* .6930 *	* .9050 *	* .8750 *	* .6480 *	* F-DEL-H			
	* 2.8619 *	* 2.2864 *	* 2.4216 *	* 3.1660 *	* M-DEL-H			

Table 7

## Maximum Allowable Radial Peaks (MARPS)

<u>Core Height (ft)</u>	<u>1.05 Axial Peak MARP</u>	<u>1.1 Axial Peak MARP</u>	<u>1.2 Axial Peak MARP</u>	<u>1.3 Axial Peak MARP</u>	<u>1.4 Axial Peak MARP</u>	<u>1.5 Axial Peak MARP</u>
0.12	1.695	1.725	1.790	1.847	1.897	1.903
1.2	1.692	1.723	1.784	1.839	1.886	1.867
2.4	1.696	1.725	1.781	1.833	1.872	1.823
3.6	1.699	1.726	1.778	1.822	1.830	1.779
4.8	1.701	1.725	1.772	1.810	1.784	1.733
6.0	1.703	1.725	1.763	1.779	1.732	1.686
7.2	1.703	1.721	1.751	1.731	1.683	1.633
8.4	1.698	1.709	1.719	1.677	1.628	1.579
9.6	1.690	1.694	1.668	1.617	1.574	1.529
10.8	1.679	1.666	1.619	1.566	1.518	1.476
12.0	1.657	1.629	1.576	1.526	1.480	1.439

<u>Core Height (ft)</u>	<u>1.6 Axial Peak MARP</u>	<u>1.7 Axial Peak MARP</u>	<u>1.8 Axial Peak MARP</u>	<u>1.9 Axial Peak MARP</u>	<u>2.1 Axial Peak MARP</u>
0.12	1.844	1.804	1.717	1.637	1.531
1.2	1.811	1.788	1.727	1.660	1.540
2.4	1.768	1.751	1.694	1.639	1.566
3.6	1.726	1.705	1.652	1.603	1.541
4.8	1.682	1.664	1.614	1.565	1.501
6.0	1.638	1.622	1.574	1.529	1.461
7.2	1.587	1.571	1.527	1.488	1.424
8.4	1.534	1.522	1.479	1.440	1.373
9.6	1.487	1.476	1.436	1.399	1.337
10.8	1.434	1.427	1.390	1.355	1.294
12.0	1.401	1.395	1.362	1.332	1.279