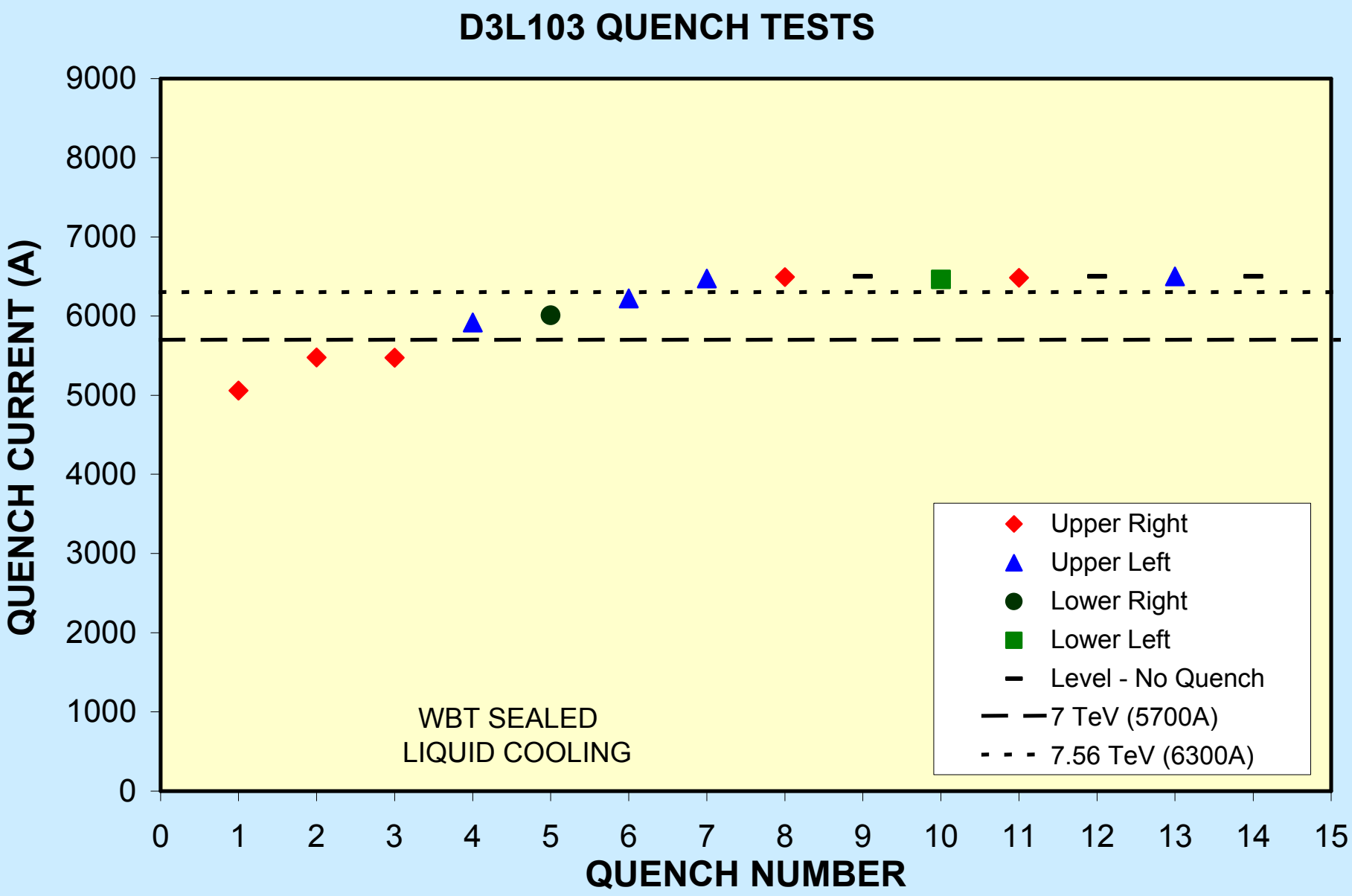
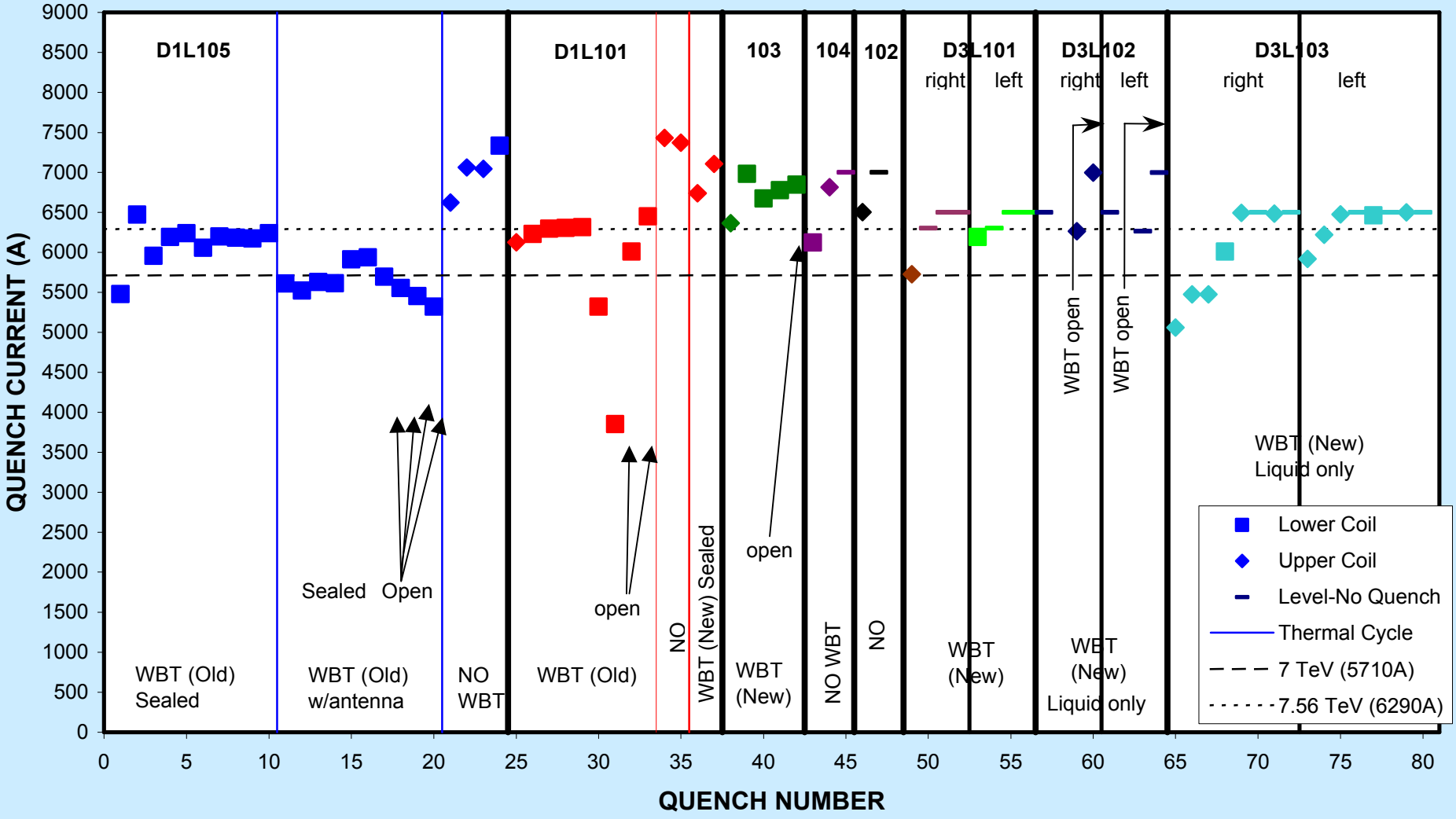

D3L103 QUENCH TESTS
QUENCH CURRENT (A)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
QUENCH NUMBER
WBT SEALED
LIQUID COOLING
Upper Right
Upper Left
Lower Right
Lower Left
Level - No Quench
7 TeV (5700A)
7.56 TeV (6300A)

D1/D3 QUENCH TESTS



16-June-2005
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D3L103 QUENCH SUMMARY

Magcool Bay C

QUENCH #	RUN #	CURRENT (A)	T2 (K)	T3 (K)	START (ms)	MIITS	COIL	COMMENTS
T = 4.5K (nom)								
Warm bore tubes installed, sealed, and under vacuum								
Liquid helium bath cooling @ 1.4atm								
1	27	5060	4.688	4.695	-34	5.3	upper right	
2	28	5476	4.681	4.685	-26	5.5	upper right	
3	29	5474	4.664	4.673	-23	5.4	upper right	
4	30	5919	4.686	4.690	-22	5.8	upper left	
5	31	6008	4.691	4.695	-22	5.8	lower right	
6	32	6221	4.696	4.705	-30	6.3	upper left	
7	33	6475	4.680	4.685	-19	6.1	upper left	
8	34	6493	4.679	4.685	-16	6.0	upper right	
	35	6500	4.679	4.683	ramp to 6500A; NO QUENCH			
9	35	6463	4.679	4.683	-18	6.0	lower left	(j)
10	36	6483	4.703	4.713	-19	6.1	upper right	
	37	6500	4.701	4.705	4 ramps to 6500A; NO QUENCH			
11	37	6500	4.701	4.705	-19	6.0	upper left	(k)
Warm bore tubes open								
liquid helium bath cooling @ 1.4atm								
Magnetic field measurements to 5900A (20+ ramps to 5900A)							NO QUENCHES	
Warm bore tubes sealed and under vacuum								
Liquid helium bath cooling @ 1.4atm								
	68	6500	4.654	4.660	ramp to 6500A for 10 min; NO QUENCH			

Notes:
a) Ramp rate for quenches 1-8,10 was 20A/s with a stop at 5000A. The ramp for quenches 9 and 11 was at 20A/s with no stop.

b) Energy extraction used: 35mohms for all quenches.
c) The temperature T2 is a diode sensor located in the helium return line tube which contains the superconducting bus; T3 is in the lower lead interconnect pot. Both have associated redundant sensors. T2 was used here instead of T1 as in previous LHC magnet tests because T1 was showing some unusual fluctuation not seen in the other three sensors.
d) There were no auxiliary voltage taps in the magnet coils.
e) Data acquisition sampling rate was 1kHz for all quenches.
f) Strip heaters were fired at 475V (nom) and 96A (nom), with 1ms delay.
g) For all quenches, the voltage difference quench detector threshold voltage was set at 0.6V.
h) For quenches 1-3,8, there are one or more voltage spikes at or after the quench start and many spikes occur earlier.
i) For quenches 4-7, 9-11, there were many spikes earlier than the quench start.
j) For quench 9 at 6463A, the magnet had made it to 6500A on a previous ramp (same run, #35) without a quench, but it did quench on the second ramp to 6500A (quench 9).
k) For quench 11 at 6500A, the magnet had made it to 6500A on four previous ramps with 5 minute waits at 6500A (same run, #37) without a quench, but it did quench on the fifth flattop (quench 11) after 2.5 minutes at 6500A.