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D1L105 QUENCH SUMMARY

Magcool Bay E

QUENCH #	RUN #	CURRENT (A)	T(in) (K)	T(out) (K)	START (ms)	MIITS	COIL	COMMENTS
T = 4.5K (nom)								
Bore tube sealed								
1	18	5477	4.555	4.701	-82	11.6	lower	
2	19	6472	4.572	4.691	-47	11.5	lower	
3	20	5955	4.550	4.705	-60	11.5	lower	
4	21	6191	4.560	4.689	-55	11.6	lower	
5	22	6240	4.582	4.714	-52	11.2	lower	
6	23	6058	4.574	4.694			lower	(g)
7	24	6197	4.572	4.688	-51	11.4	lower	
8	25	6181	4.575	4.694	-55	11.5	lower	
9	26	6174	4.577	4.722	-55	11.5	lower	
10	27	6238	4.546	4.703	-51	11.2	lower	
Thermal Cycle - insulation added to end can; copper braid attached from warm bore tube to helium line as heat sink								
Bore tube sealed with quench antenna installed								
11	34	5611	4.692	4.839	(h)		lower	toward nonlead end
12	35	5522	4.681	4.844	-50.2		lower	(i)
13	36	5630	4.701	4.858	-50.8		lower	same as #11
14	37	5614	4.707	4.862	-51.0		lower	same as #11
overnight cooling, system temperatures decreased								
15	38	5912	4.638	4.775	-54.2		lower	toward lead end
16	39	5937	4.630	4.795	-53.0		lower	same as #15

Warm bore tube open, quench antenna in place

17	40	5694	4.630	4.793	-44.2	lower	(i)
18	41	5553	4.629	4.804	-50.2	lower	same as #11
19	42	5452	4.675	4.845	-53.6	lower	same as #11

overnight cooling

20	43	5323	4.659	4.764	-58.0	lower	same as #11
			4.569	4.670			(temps oscillating - see note j)

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Thermal Cycle - Warm bore tube removed, cryostat flanges sealed; no quench antenna

21	45	6623	4.504	4.605	-48.2	upper
22	46	7062	4.547	4.637	-41.0	upper
23	47	7043	4.545	4.624	-40.6	upper
24	48	7334	4.533	4.647	-36.6	lower

no power cycles done

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Notes:

- a) Ramp rate for quenches was 20A/s, except that quench #9 was at 5A/s.
- b) There was a 1 hour or more wait between quenches.
- c) The temperature sensors recorded are diode sensors T9 at the helium input and T8 at the output. Both have associated redundant 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 100V (nom) and 108ms.
- g) For Quench #6, fast data logger 1 malfunctioned so exact quench start time and miits is unknown.
- h) For Quench #11, the quench detector was delayed in triggering, so the measured -120ms start time appeared earlier compared to the other times.
- i) For Quenches #12 and #17, fast data loggers 3-4 malfunctioned so location by quench antenna was not possible; however, the slope of coil voltage difference signal for #12 is the same as for #11.
- j) Before Quench #20, the cryogenics system was adjusted to lower the temperature by increasing flow, and by other changes. This lowered the temperature but caused it to oscillate along with the pressure. The temperatures shown above are the upper and lower limits of the oscillation.