

REPORT ON THE DISCUSSIONS OF THE FNAL MAGNET ACCEPTANCE COMMITTEE W/RESPECT TO LQXB04

The Fermilab magnet acceptance committee met initially in August 2003, and thereafter through emails and follow up meetings, to review and discuss the magnet assembly LQXB04 with respect to the acceptance criteria. A summary of the comparison between the results and the criteria are presented in the summary table.

The magnet acceptance committee concludes the magnet is ready to ship. As mentioned in LQXB01 and 03, several criteria should be reviewed for their necessity and the data accumulated to date is being reviewed for that purpose.

LQXB04 (MQXB10, MQXB12) ACCEPTANCE CRITERIA SUMMARY

2.1.1	MQXB MECHANICAL TWIST AND STRAIGHTNESS	OK	rb	rb
2.1.2	MQXB COIL RINGING	OK	rb/sf	rb
2.1.3	THERMOMETER AND WARM UP HEATER INSTALLATION	OK*	rb	rb
2.1.4	BUS WORK CHECKOUT	OK	rb	rb
2.1.5	ROOM TEMPERATURE HIPOT	OK	rb/ml	ml
2.1.6	ROOM TEMPERATURE ELECTRICAL CHECKOUT	OK	rb/ml	ml
2.1.7	PRESSURE TEST DOCUMENTATION	done	tn/tp	Tp
2.1.8	LEAK CHECK DOCUMENTATION	done	tn/tp	Tp
2.1.9	CRYOSTAT SAFETY DOCUMENTATION	done	tn/tp	Tp
2.1.10	PIPE ASSEMBLY DOCUMENTATION	accept*	tn/tp	tn
2.1.11	WARM CRYOSTAT TO MAGNETIC AXIS REFERENCE	done	Ps	Ps
2.2.1	COLD INSTRUMENTATION CHECK OUT	OK	ml	ml
2.2.2	COLD HEATER CHECKOUT	OK	ml	ml
2.2.3	COLD ELECTRICAL HIPOT	OK	ml	ml
2.2.4	NO QUENCHING UP TO AND INCLUDING OPERATING GRADIENT (AFTER TRAINING)	done	ps	Ps
2.2.5	NO TRAINING DEGRADATION AFTER FULL ENERGY DEPOSITION TRIP (SEE ABOVE)	dropped from test plan	ps	Ps
2.2.6	TRANSFER FUNCTION	pass	ps	Ps
2.2.7	INTEGRATED COLD HARMONICS	pass*	ps	Ps
2.2.8	COLD ALIGNMENT	accept*	ps	Ps

* see comments below

COMMENTS:

2.1.3 On Q2a (MQXB10), both thermometers were damaged during hipotting. They were replaced by new thermometers, which were mounted on the MCBX corrector skin. The new ones are operating normally. Damaged thermometers are serial numbers CX-LS-X16764 and

CX-LS-X16766. They were replaced by CX-LS-16744 and CX-LS-16131. Otherwise all thermometer and warm-up heater installation was normal.

2.2.7 Harmonics between the 2 and 3 sigma acceptance bands at collision: b_8, b_{10}, a_8 ; greater than 3 sigma: b_9, a_9, a_{10} .

2.2.8 Relative y average axes ($-0.6, \text{mm} > 0.5$); relative corrector roll ($11 \text{ mrad} > 5$, both normal and skew)

2.1.10: For all the lines that are out of tolerance, neither the assembly of the interconnect flanges on the neighboring magnet assembly (including the interconnect pipe section which spans the $\sim 1\text{m}$ gap between the two), nor the allowable motion due to the desired alignment of the magnets in the tunnel, nor the lifetime of the bellows associated with each individual tube are expected to be limited. As part of the warm fit up at CERN the tube tolerances will be reviewed.