



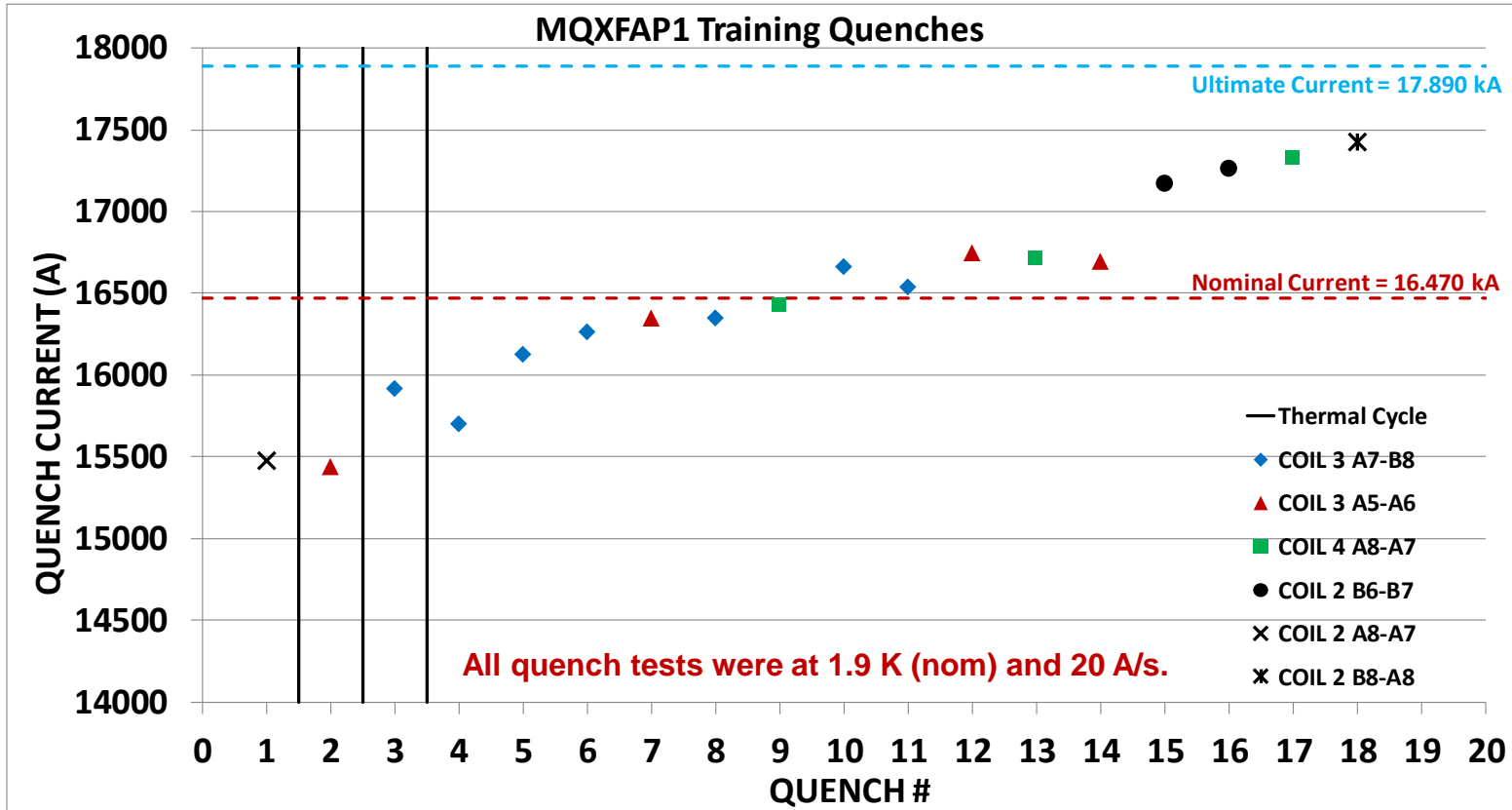
Power test, flux jump and protection thresholds in MQXFAP1

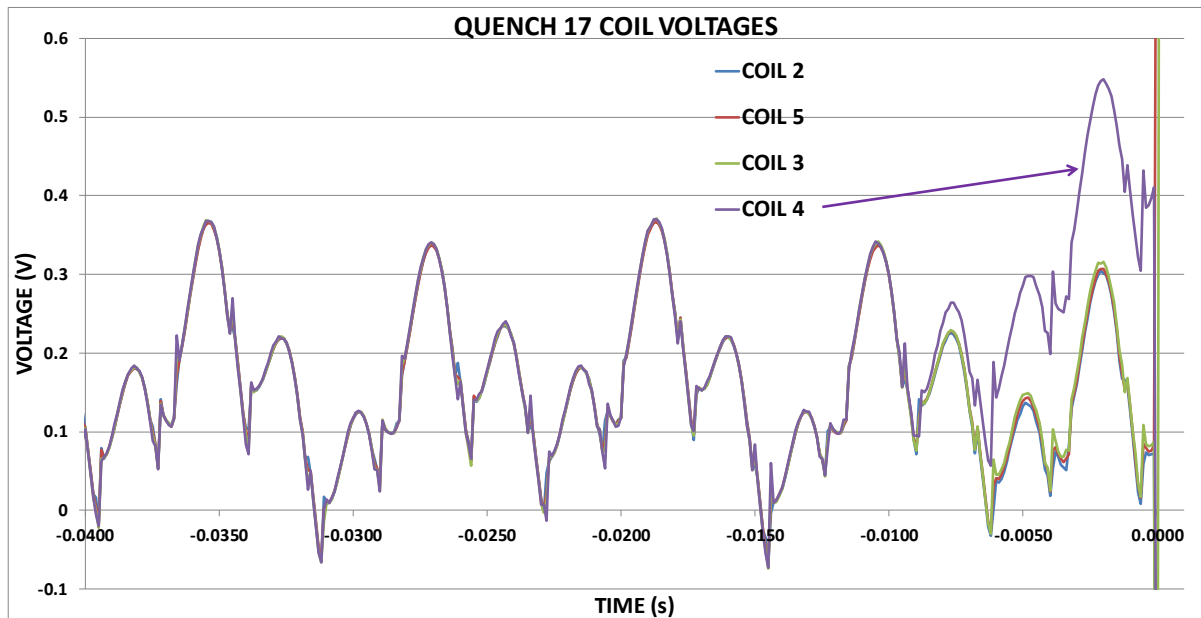
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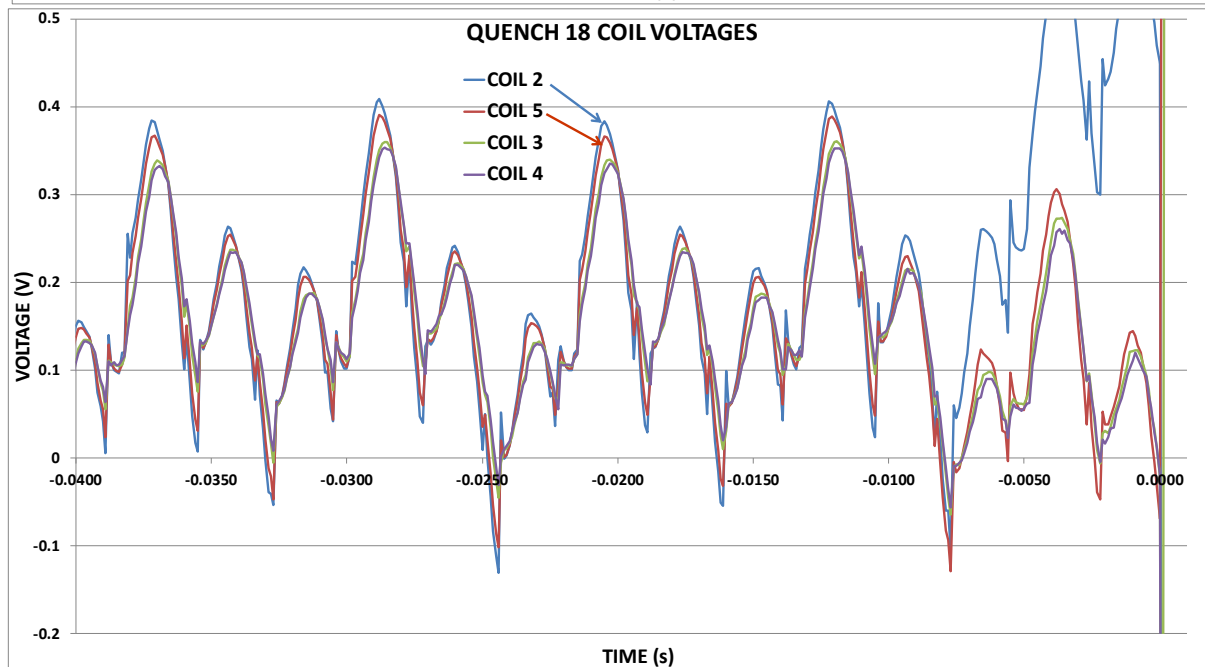


MQXFAP1 TEST





Individual coil voltages for Q#17 (17326 A) at 20A/s showing PS ripple to be in phase for the four coils.



Individual coil voltages for Q#18 (17426 A) at 20A/s showing PS ripple to be out of phase for the four coils.

MQXFAP1 TEST

20 A/s

$V_{\text{thresh}} = 150 \text{ mV } (\geq 8000 \text{ A})$

$t_{\text{val}} = 4 \text{ ms}$

$R_{\text{EE}} = 37.5 \text{ m}\Omega$ (center-tapped)

$V_{\text{QPH}} = 465 \text{ V}$ (nom)

Half Coil Voltage Difference threshold was a function of quench current during ramp.

Threshold voltages as function of current were changed during the course of the testing according to spike activity as displayed on monitor spike counters.

MQXFAP1 TEST

For final quench test (18) , threshold voltages were as follows, to avoid tripping of QD, empirically adjusting to allow about 200 mV margin (with $t_{val} = 4$ ms)

0 A	2500 mV
400 A	2500 mV
1500 A	2500 mV
3000 A	3000 mV
4000 A	2500 mV
5000 A	2000 mV
6000 A	1000 mV
8000 A	150 mV
22000 A	