

LQ Coil Fabrication at BNL

Jesse Schmalzle, BNL
CM12 – 4/9/09

LQ Coil Status

Superconducting
Magnet Division

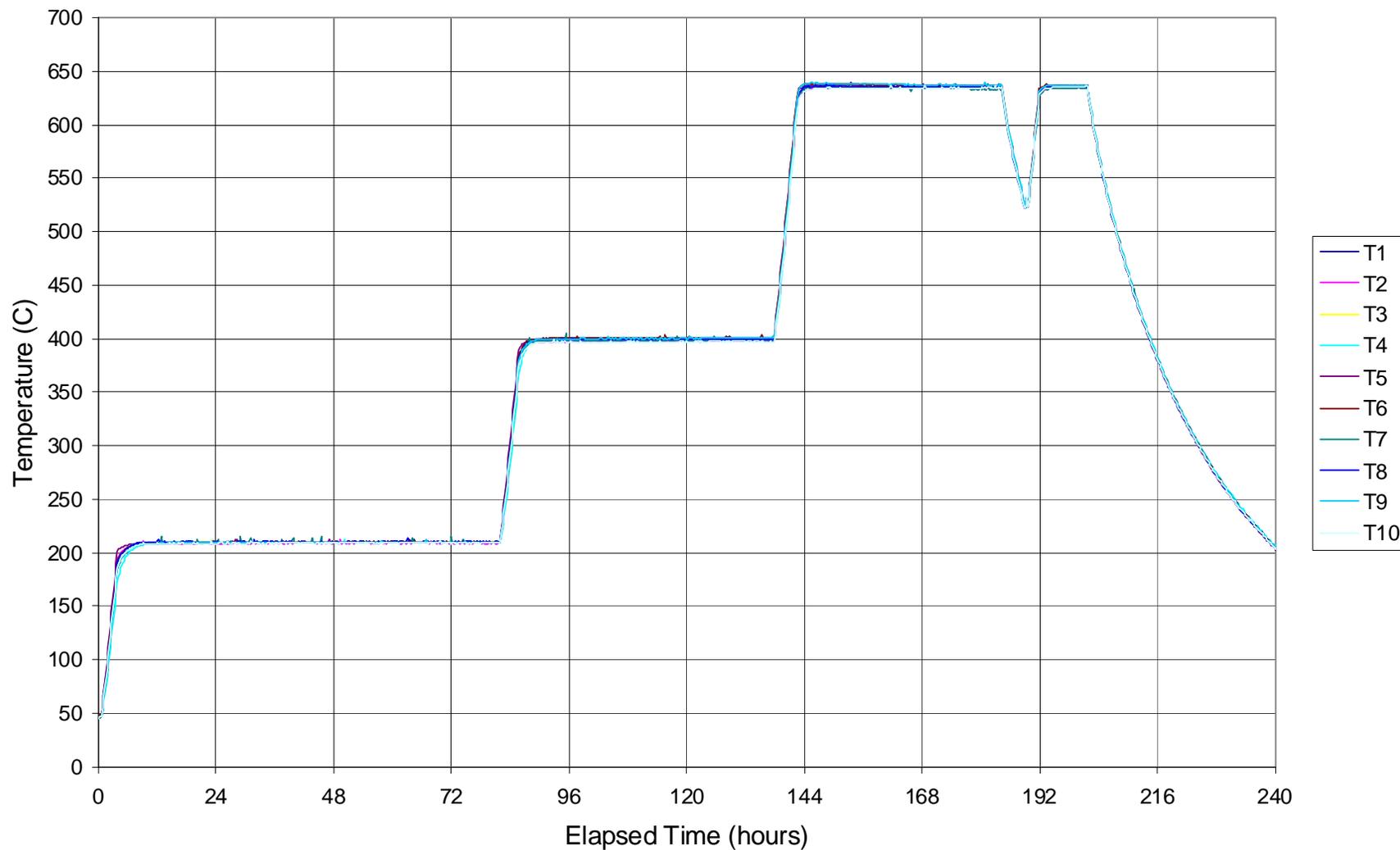
- LQ04 (practice coil)
 - Completed and shipped 4/2/09.

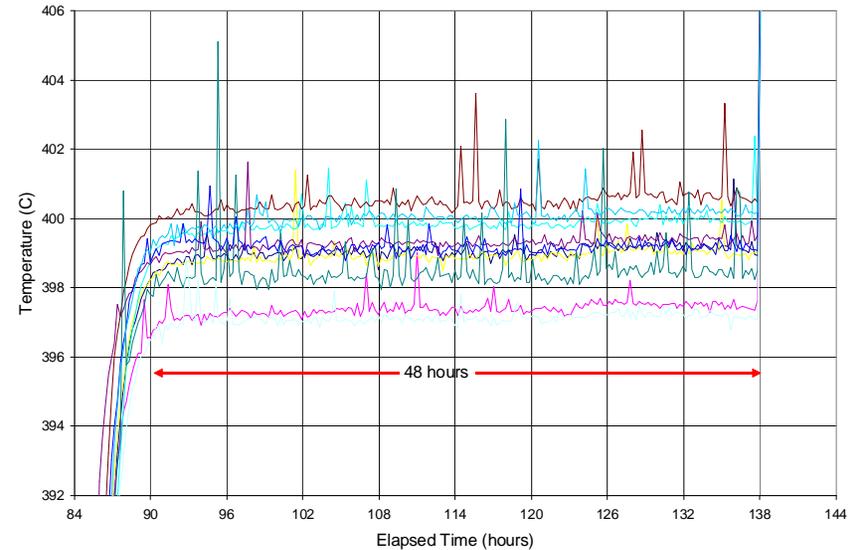
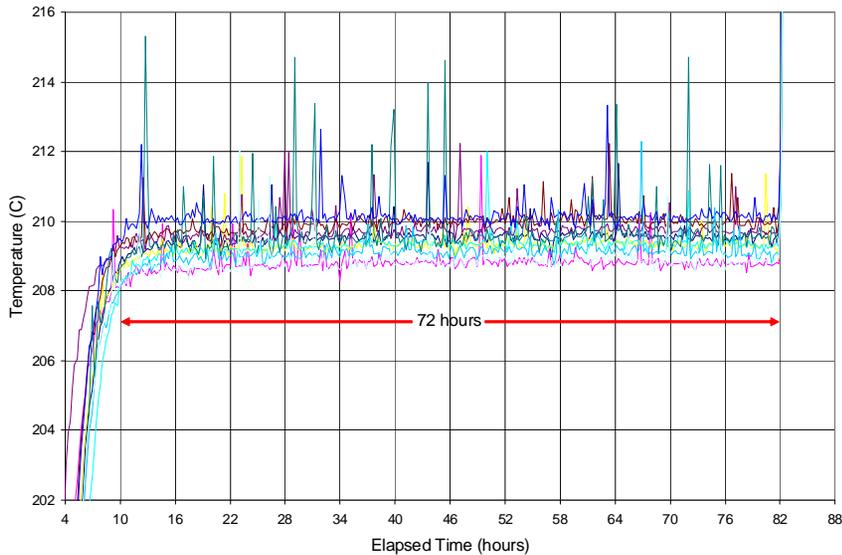
- LQ07
 - Completed and shipped 4/2/09.

- LQ09
 - Reaction complete.
 - Prep for impregnation in progress.

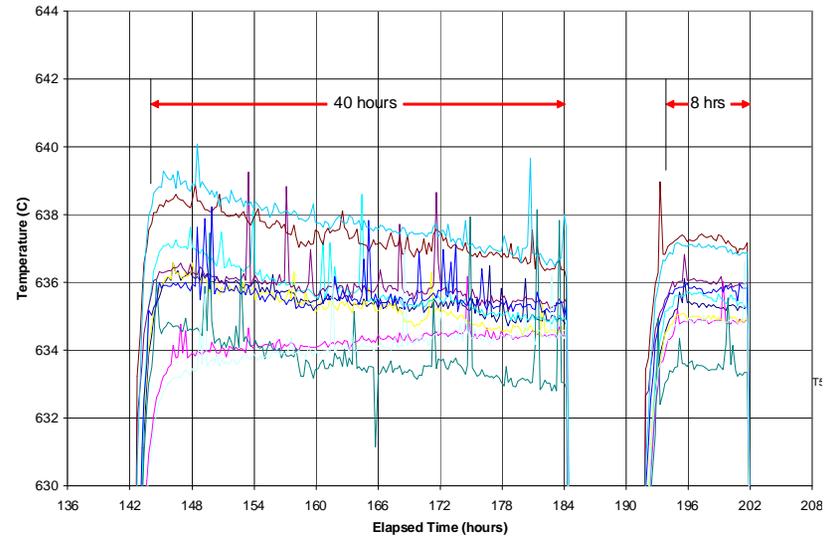


LQ07 - Reaction

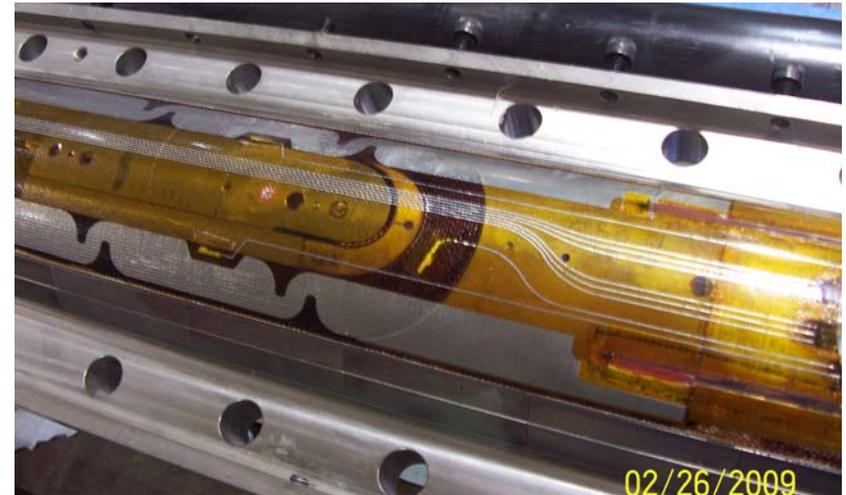
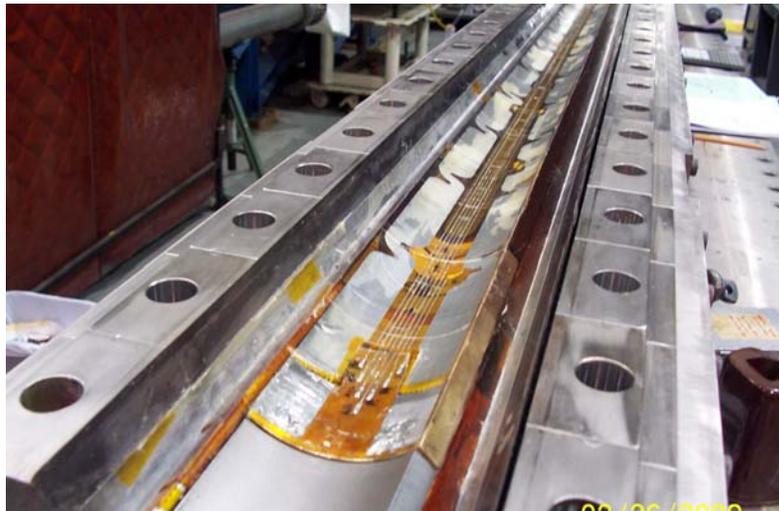




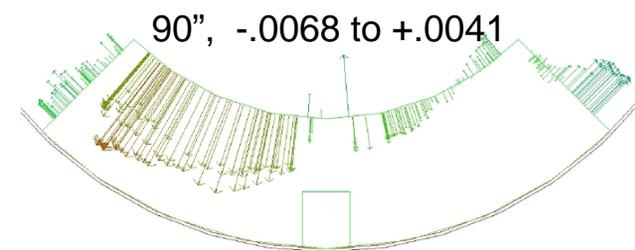
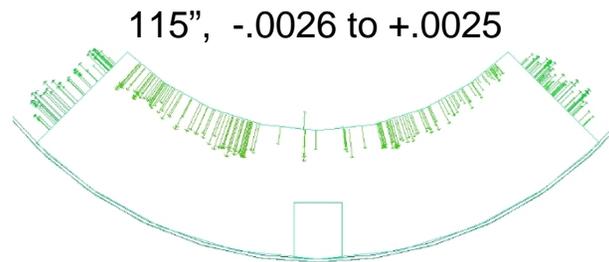
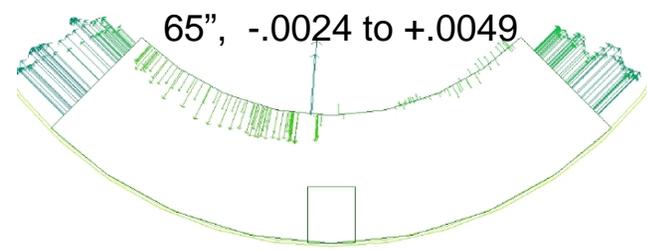
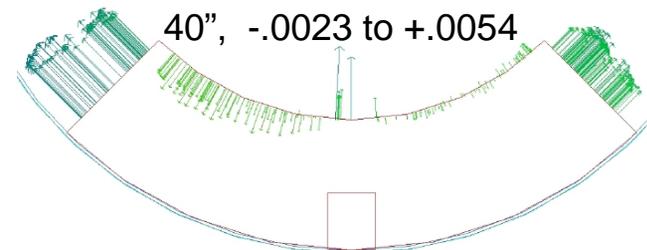
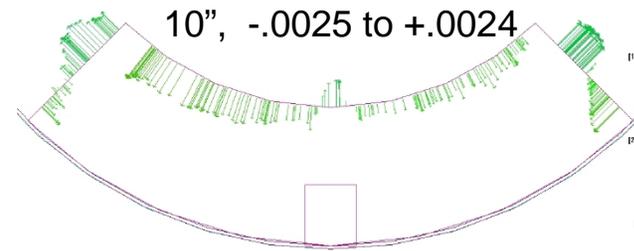
- BNL site wide power failure completely shut down reaction cycle after 40 hours at 640C.
- Coil had cooled to 555C before Argon flow was manually restarted.
- Coil had cooled to 520C over 5.5 hours before power was restored.
- Coil was brought back to 640C and held for 8 hours to complete the 48 hour step.
- Temperature at 640C step was a little low, adjustment made for next coil.



- Impregnation quality looks good.
- Electrical checks:
 - Coil shorted to outer layer LE brass saddle – use as is.
 - Heater shorted to LE outer layer brass saddle – repaired
 - Heater shorted to outer layer NL brass saddle – use as is.
 - Extra insulation being added for next coil.

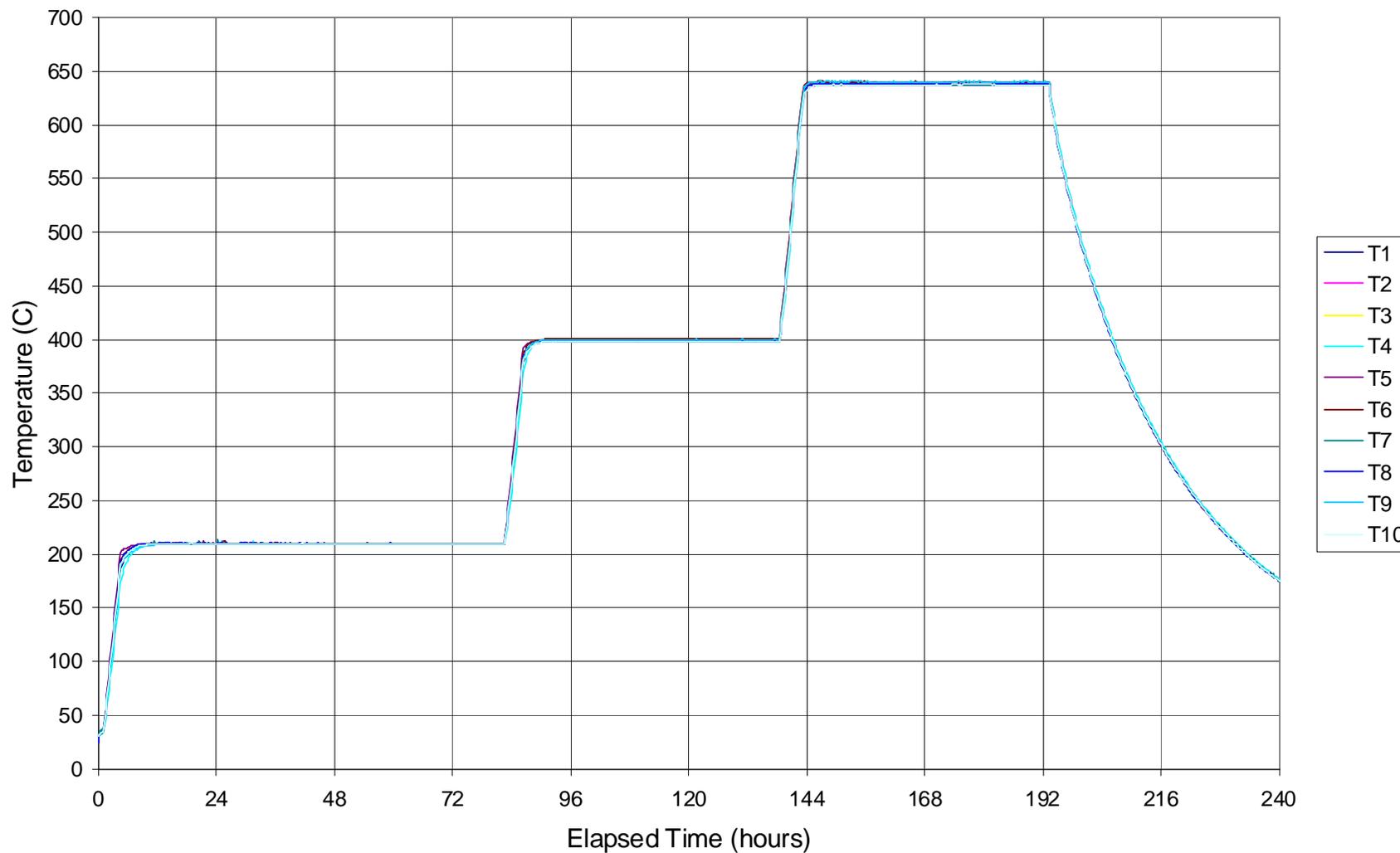


- Coil size measurements.
 - Coil clamped in form blocks.
 - Measured using portable CMM.
- Variations from nominal shown by arrows on plots.
 - Data fit to coil OD.
 - Measured variations on midplane are from .002" (.05mm) small to .005" (.13mm) large.

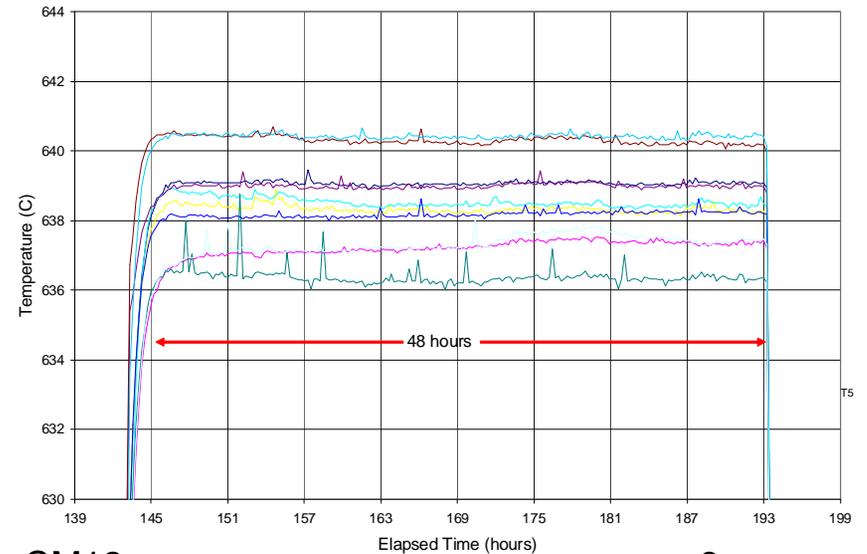
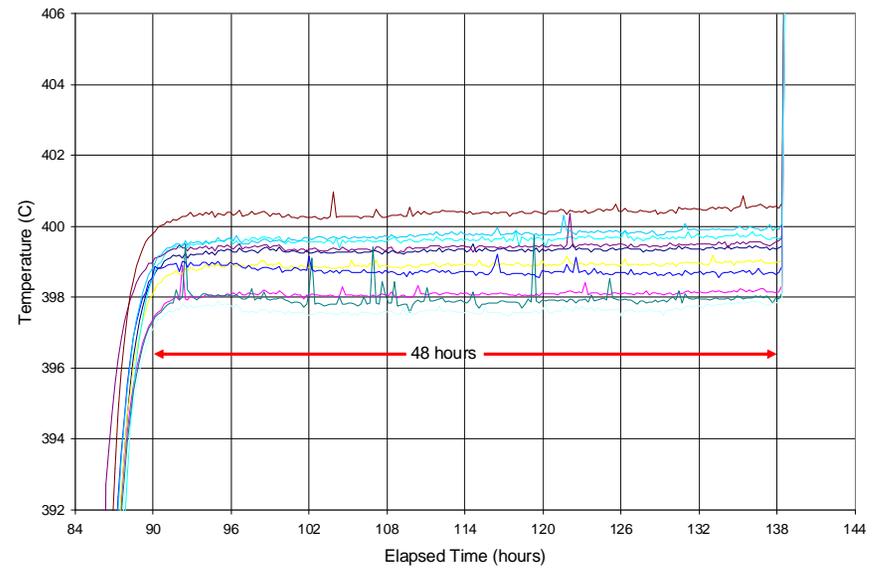
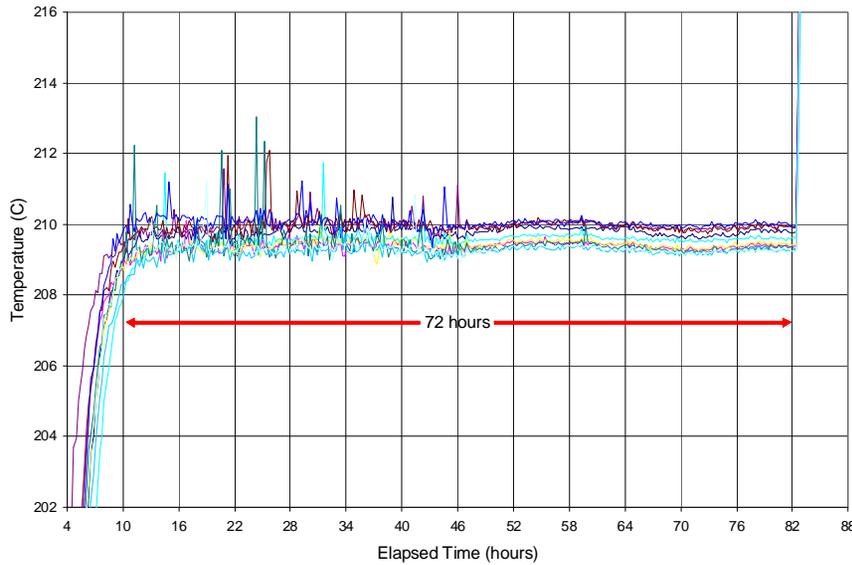


LQ09 - Reaction

Superconducting
Magnet Division



LQ09 - Reaction



- Signal interference abruptly stopped mid way through 210C step.
 - Will investigate cause before next reaction.

LQ Coil Plans

Superconducting
Magnet Division

- LQ09:
 - Complete impregnation and wiring.
 - Ship to LBNL at beginning of May

- LQ11:
 - Start reaction at beginning of May
 - Ship to LBNL in July

- LQ12:
 - Start reaction at beginning of FY10.

