

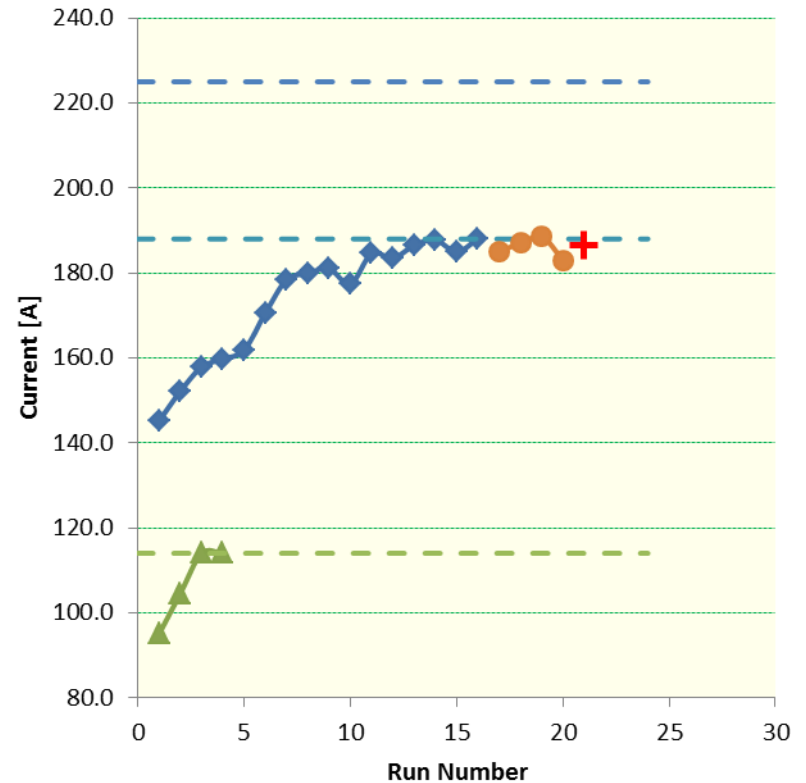
MICE Focus Coil

Video Conference – 18/09/14



FC#1 summary

- 21 training runs in Flip
- Proposed stable operating current of **180A**
- Magnet now in MICE Hall
- ...though no work has been done with it yet



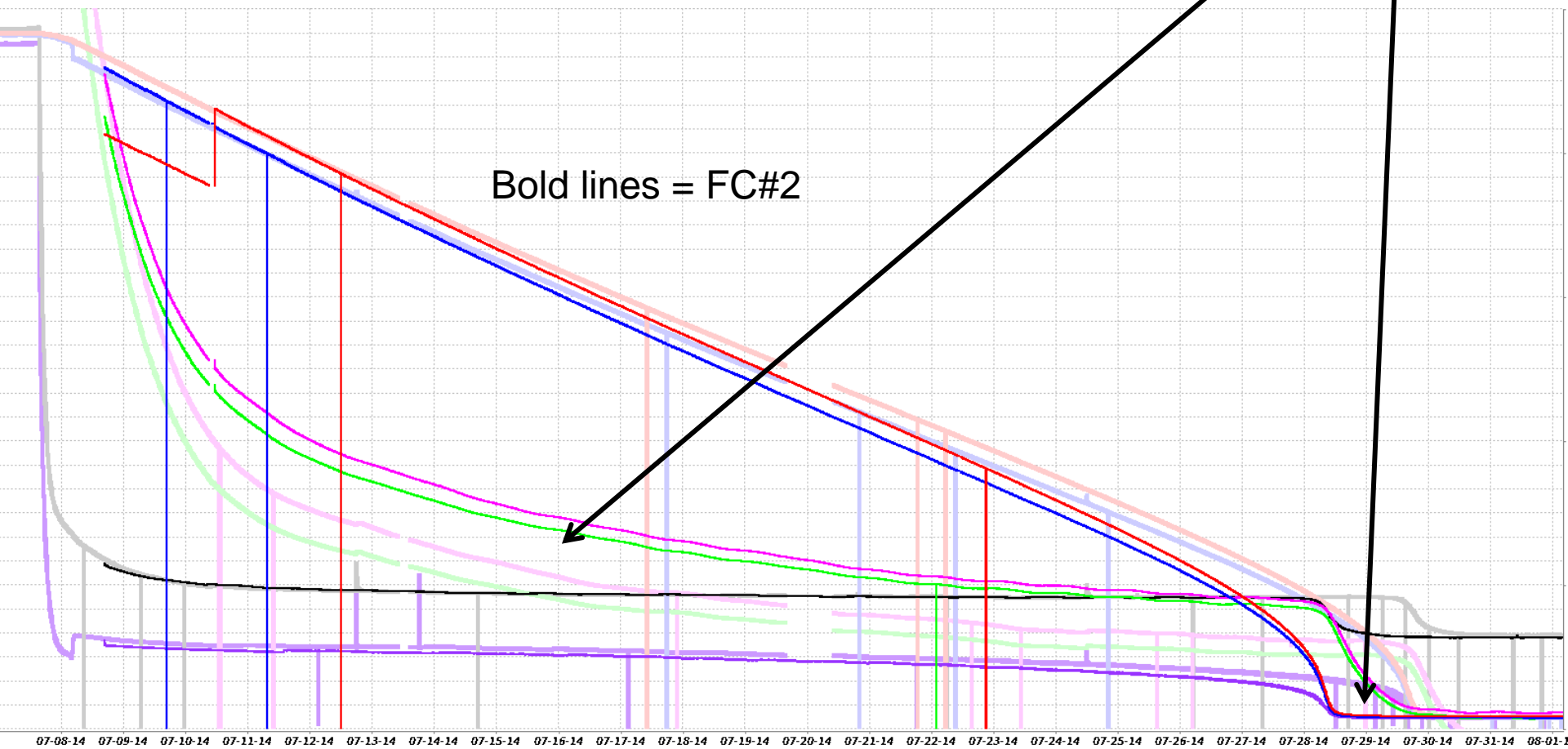
FC#2 repair re-cap

- Problems during cooldown
 - Thermal short - **FIXED**
 - Sensor failure - **FIXED**
 - Cold leak - **NOT FIXED**



FC#2 cooldown

- Cooldown quicker than FC#1
- Some concerns about the radiation shield



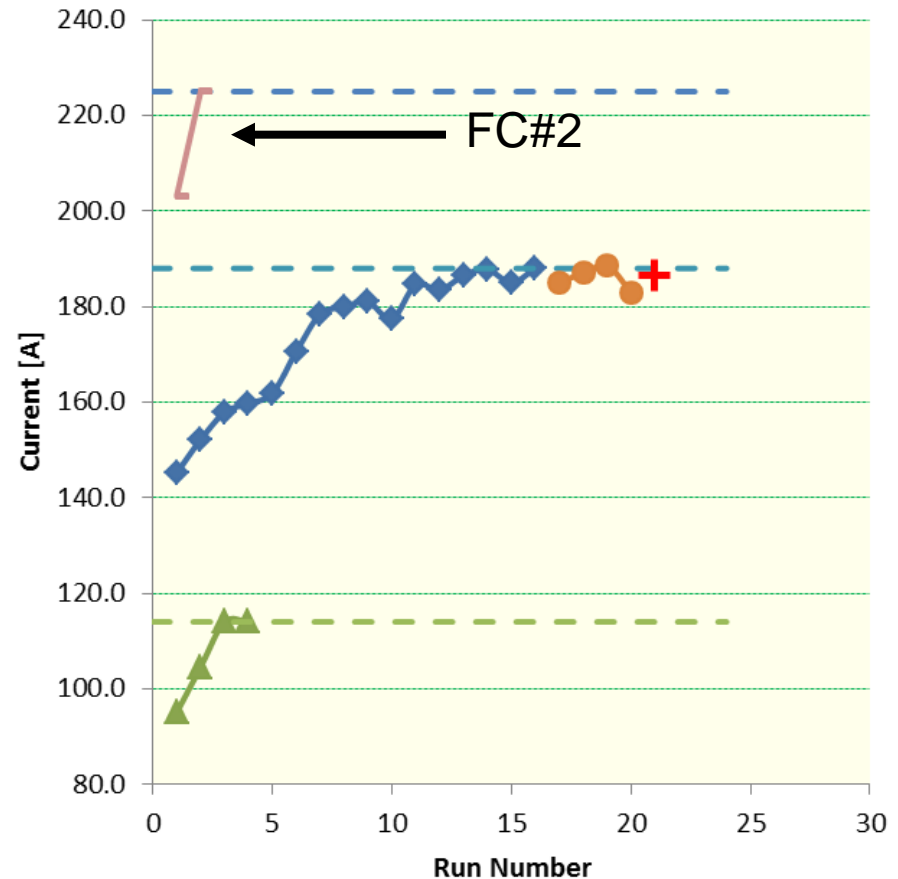
FC#2 training to date

Solenoid mode

- One forced quench at 50A
- Ramp to 114A, ramp down
- Ramp to 120A, 24 hour hold

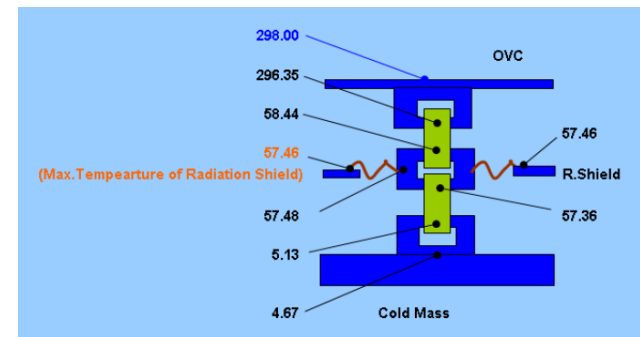
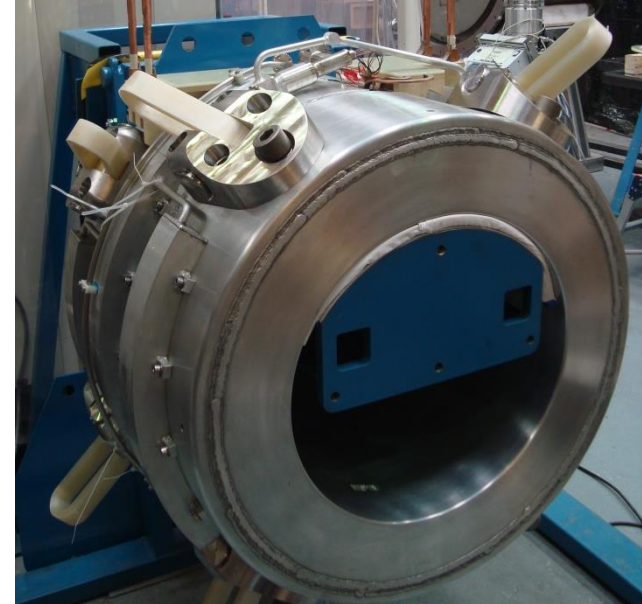
Flip mode

- Ramp to 203A, quench
- Ramp to 188A, 24 hour hold
- Anomalous ramp down, arrested at 95A, 24 hour hold
- Ramp to 224.98A, quench
(probably internal PSU limit, not magnet)



FC#2 thermal performance

- Rad shields are warm
 - 71K v 57K in powered thermal model
- Stable helium pressure is higher than heater control setpoint
- Liquid helium transfer is problematic
 - Reads 85% during transfer then drops to 65% after
 - Exacerbated by level sensor ambiguity
- Thermal margin is diminished
 - Only a concern at high ramp rates and high currents
- **However, none of this seems to actually affect the magnetic performance!**



Experimental use – Step IV

- **Executive decision – FC#2 will be used in Step IV**
- Pending...
 - Understanding of the thermal issues
 - Resolution of the LHe filling problem
 - Acceptance agreement with manufacturer

Experimental use – Step $3\pi/2$

- Risk associated with attempting repair of FC#1 presumed to be too great
 - Both a significant technical risk and a schedule risk
 - Assumes less onerous current density requirements in Step $3\pi/2$
- Regardless, manufacturer will be approached for estimated cost/schedule of repair



Milestones

- October 14 - FC#2 field mapping
- November 14 - Module swap
- January 15 - LH2 commissioning (helium)
- April 15 - LH2 commissioning (hydrogen)

