



Beamline Status



Update since February 2015

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Target

[summary, see Joe's talk...!]

Installed S-series into ISIS last December:

- 1M successful pulses
- Stable running at 30 deg.C
- Allowed to take 2V loss at 64/50 Hz
- Longstanding concern about losses in readout fibres
 - Fibres now fully enclosed and soak tested
 - Many fibre ends have new connector spliced on

Spare target mechanisms to be prepared

- New batch of target shafts en route

New S4 stator next year



Conventional Magnets

Running fine; currents set via Run Control

- Known issue with limited cooling water flow
 - downstream quads restricted to 315A
- Q4 MPS regulator board replaced
 - stable at current but needs tuning
- Q8 water leak fixed
- Q789 exposed conductors now covered over
- Q9 Magnet-On lamp repaired
 - fault found in the wiring



Decay Solenoid

Compressor and main fridge serviced separately last February and March.

- Control valve actuator (in DSA) failed in spring
 - replaced; awaiting spare for stock
- QD battery back-up unit not recharging
 - interaction with new PSU needs fixing
- DS Magnet-On lamp warning
- Lost remote control over current (Sept.)
 - faulty voltage isolator identified and replaced
- "Over-temperature" PSU trips
 - PSU left overnight (19h) at 870 A last autumn; data taken OK in June at 668 A
- Now trips on reaching 670 A: something's changed



PA / BS

Proton Absorbers:

Flow restrictor valves added to air lines

This has smoothed out the slamming on the downward movements and should prevent the limit switches getting battered

Beamstop:

Pressure hose replaced in second circuit; now have a failover system working again

Both of these required the DSA open: need to synchronise expert availability with opportunity



MLCR and CAM

Eventually managed to get the existing Alarm Handler settings usable (with aid of a Post-It note)

Alarm Handler / Archiver Spreadsheets are in progress - drafts of "Beamline" and "Decay Solenoid" exist.

I need to get the Target spreadsheet done and need to improve Archiver handling (e.g. I forgot to ask for the detailed Beamloss archiver to be active for the Activation Run).



Safety and Beamline Preparation

We have got permission to streamline the beamline start-up by keeping the conventional magnet supplies continuously powered in remote mode.

Overt assumption that the magnets are only driven from the MLCR, whence people know what is going on in the Hall!

Local enforcement using the emergency stops

We are also in negotiation to leave out the beamstop mechanical restraint between shifts (“stand-by”)

Reduce need for on-site BLOC cover and Controlled Entries



Future work:

- Diagnosis of the DS PSU overheating (DL)
- Q4 control check? (DL)
- Cleanup of R78 target controls (DL)
- Polarity sensor radiation damage test

January (maintenance month):

- Trace through all the target fibres from synch and confirm mapping and labelling
- Servicing of DS Compressor and Linde Fridge
- Linde Control PC upgrade (?)
- Beamstop hydraulics annual service
- Possible installation of pressure transducer to monitor high pressure/purity compressed air state from outside MICE Hall
 - Second chilled water pump?