



# Beamline Status



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## Target

Installed S-series into ISIS in Dec. 2014:

- 2.6M successful pulses; expect 5M+
- Stable running at 30 deg.C
- Allowed to take 2V loss at 64/50 Hz
- Regular beam-bump tuning sessions
- Concern about continuing losses in readout fibres
  - Loopback monitoring restarted
  - Restart target run-in activity (R78)

Overnight “standby” regime implemented with shifters stopping and waking target

**Shifter training is mandatory!**



## Decay Solenoid / PA / BS / Diffuser

- DS Compressor and main fridge serviced separately in January.
- DS Power Supply returned during the spring running, and the DS used through the July cycles.
- Improved alarm limits have eliminated false alarms
- Overnight "standby" regime in place
- DS Compressor maintenance in August, include an early annual service to carry through to end StepIV, went awry; now running but mysterious drops in Helium level; under investigation!
- Diffuser has damaged electronics in controller; away for repair.



## Conventional Magnets - 1

Currents now set via Run Control and overnight  
"standby" regime agreed

- Known issue with limited cooling water flow
  - downstream quads restricted in current
  - Trench water system shown working to some level
  - revised heat exchanger plumbing improved the situation in the trench, but hit new bottle-neck on-roof - unable to reliably dissipate extra "70" kW load (3-240 MeV setting).
  - see other talk!
  - still then need to re-validate Trench system



## Conventional Magnets - 2

During MDR7 a long-standing issue in Q1 supply went OTT; replacement supply leaked water into Q2 supply killing the latter. (Lesson: check spares before storage!)

The Q4 ramp-rate and stability issues have been resolved by changing the MPS' regulator board

Earth-leakage measurements have been made; show uniform degradation across all magnets - possibly a common shift. Scheduled repeat in November shutdown.

Calibrations of the dipoles and DS read-back current will be checked and if necessary corrected.



## BLOC roster - 1

Showstopper for March running is lack of trained BLOCs and very few volunteers. Piggyback training on early March run.

**STILL** remains a potential showstopper - nearly had to cancel several shifts already.

Economic pressure is to take shifts, not BLOC. We now allow BLOCs to take the day shift - with the rider that *if they are called out overnight they can skip next day's shift.*

With 16/7 running, the only scheduled BLOC interventions are associated with the Wednesday maintenance period...

...the rest of the time it is "on-call"



## BLOC roster - 2

*Achieving 16/7 running is another matter!*

Estimate a pool of 5 schedulable BLOCs (and some reserves) - have 4. Just don't have the local, experienced people (or many alternative candidates).

Proposed next training cycle: early Nov.

- Volunteers?



## "Oversight Environment"

Clunky phrase: includes software layers (EPICS, ALH), MLCR facilities (& beyond) and the *PEOPLE*. I believe it is NOT "fit for purpose."

Some things aren't monitored, others aren't in the Alarm Handler, some items in the Alarm Handler don't actually alarm (water flow trips). If the computers aren't doing the monitoring then the people *must*, but many are inexperienced and overwhelmed by the training (if they get it). Checklists are an aid, but only if followed - and only a few exist.

**It took 6 days before anyone noticed Q2 was dead, with the MLCR running and often staffed.**

Less than a week after we covered this at the last VC, I arrived at the MLCR (for other reasons) to find Q6 in a tripped state. It still took 35 minutes to persuade the 2 shifters and MOM to investigate... plenty of time for the issue to escalate. Not the only occurrence. **MICE must allocate sufficient resources**





## BLOCs, shifters, stand-by, etc.

In July running we had 11 conventional magnet trips that I know about; less a third had the specific cause recorded in the eLog and none had the eLog information in the shifters' "what to do when ... fails" list. Q2 died and wasn't noticed.

Hence my fractious comments from this morning:



## Future work:

- Reinstate of R78 target activity (DL)
- Repeat earth leakage measurements on quads
- Water leaks in magnets: will leave as-is
- Linde Control PC upgrade
- DS and dipole calibration checks
- Extended list in MICEmine #1876
  
- Chilled water