

# DVCS RC Report

Pre-commissioning

September 28, 2010

Brad Sawatzky

# Cryo Status – ESR

- Cryo has been struggling to get ESR T1 turbine to run for some time now
- Installed refurb unit and got it to spin up late last week
- Ran into issue with ice plug on LN2 line
- Warmed up Saturday, cleared plug, re-cooled
- Got T1 restarted, fired up T2 and...

# Cryo Status – CHL

- CHL has a contamination problem
- Flow restriction on CHL T4 input (Monday)
  - was reason for liquid level SRF trips noted over weekend
- Partial warm-up of CHL started Tues. morning
  - 24 hr down if all goes well
- ESR cooldown is still in progress...

# Target Status

- “Large” leak in loop 2 found during pump down last week
- Dave Meekins (et al.) went through the plumbing again on Friday and Monday
  - tightened bolts
  - replaced gasket on an elbow fitting
  - no smoking gun, but...
- Pumped down last night, vacuum held, more leak tests this morning
  - **Looks good!**
  - Target ready to cool-down
  - Beamline ready for beam whenever Accel is back up

# Polarimetry

- Moller is in good shape
  - DAQs (old and new) re-verified to work with 1kHz MPS rate. Analyzers can handle it too.
  - HW checked out with cosmics and LED pulser
  - Need ESR for cool-down, but otherwise ready
- Compton is very close
  - not on critical path for experiment
  - want photon detector operating as beam quality monitor
  - basic operation (cavity, photon detector) verified

# Other Support HW Status

- Lumis, BPMs, BCMs in good shape and in data stream
  - Lumis are very noisy, RC filter installed
- Raster signals need to be verified in DAQ
- **Cavity monitor status?**
  - can Bob M. or other expert verify it is in a “safe” configuration?
- **Arc energy system?**
  - dipole is functioning
  - Scanner HW & SW, analyzer status?

# Experiment Status

- LHRS detector stack in good shape
  - short punch list (1875 readout, EDTM, issues with helicity ring buffer)
- Calorimeter DAQ is still in progress
  - ARS (FADC) units somewhat unstable
    - readout and 'sync' errors still being investigated
  - Calo Trigger FPGA / Logic unit needs some work to support desired trigger combinations
- CODA configurations need to be created/tested
  - production (LHRS + Calorim coincidence)
  - “singles” modes needed for commissioning *without* the LHRS

# Start-up run plan (pre-ESR)

Swing shift, Wednesday at the earliest

- Items that can be done without cryo in the Hall
  - Commission beamline
    - steer through Compton chicane
    - center beam on target (holey carbon, BeO)
  - Beam optimization study (Yves Roblin, MCC)
  - BPM, BCM, Cavity monitor calibrations
  - Lumi linearity measurement
  - Luminosity stress-test of calorimeter
  - Arc energy measurement
    - assuming energy is nailed down
    - hot checkout starting 6pm tonight – run the mapper tonight?
  - Compton work at 5 pass
    - not a priority item, expert availability is an issue



# Start-up run plan (post-ESR)

- Cooldown list after ESR is up. All items will require Hall to be open during day shift(s) for monitoring and quick access.
  - Cool down of the target
  - Cool down of the LHRS (7—14 days)
  - Cool down Moeller and fill dewar
- Cool Moeller near the start of this process?
  - get Moeller comm. out of the way (3 shifts: align beam with sol. field, commission new targets and do a polarization measurement)
- LHRS recommissioning
  - power supplies saw a lot of work during the down, will need 2—3 day-shifts to recommission and verify operation
- ESR is late enough that there will now be an overlap between Hall A's cool-down needs and the  $Q_{weak}$  target requirements. Clear communication and flexibility will be required on both sides.