Weekly Report – week of August 1st, 2011
Fabrication and Assembly of ERL hardware
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Cryogenics:
Transfer lines cryoplant side: Weld inspection: Inspector is here Friday morning.
Vertical test Dewar side: Small vent line is continuing
Compressed Air System: Dryer with local manifold is completed. Next the tie in line run to main line and ½ inch line to cryoplant coldbox system.
Cryoplant system: Preps underway for pressure testing of warm lines.

Controls: The first step towards testing of the Kepco power supplies was successful: communications have been established via a remote serial connection. Testing of the software interface and the power supplies themselves can now proceed. A proof-of-principle test using open source software has confirmed that we should be able to support at least two Firewire cameras per PC host machine. Further development will be needed to implement support for multiple cameras in the custom software that will be used for the ERL. Initial plans for the necessary Machine Protection System changes for the G5 test have been established. Open issues include developing a plan to address crosstalk issues with input signals, and determining the need for and how to implement power supply status inputs into the MPS given that most types do not have an existing TTL output capability.

Gun Cryomodule/5-cell cavity: Gun cavity string arrived from Jlab and moved to 905 clean area. Determination of need thicker CFF gasket on FPC made. G-5 D/S magnet stands surveyed into place.

Instrumentation: Efforts concentrate in coordinating inputs to the machine protection system and the definition of machine modes in the protection scheme. Custom electronics are being fabricated to interface the PMT's to a RHIC type beam loss detection system planned for ERL. Modifications to the zig-zag dipole chambers are underway which will provide an increased aperture for the YAG screens in the plunging profile monitors. Work continues on implementing an interface to the Libera BPM electronics. Modifications continue in preparing the electronics for the Faraday cups. Coordination of the numerous motion control channels is underway with the controls group.

Laser: 266 nm generation studies continue. Met with Menlo systems scientist during a visit to Stony Brook and developed a plan for improving our locking stability. Our system is limited by deflection of the beam caused by angular deflections of the piezo-mounted mirror during extension/compression of the piezo stack. Menlo has now implemented a measurement of this deflection in their construction process. Our system was developed prior to this implementation. They will build a new piezo setup, controlling for deflection, and we can replace the existing parts.

Large Grain Gun: Uni-strut support and assembly stand and base plate have been completed. The top plate has been placed on the support stand in building 905.

Mezzanine: Clean room bids reviewed. Questions sent to qualifying vendors before final decision can be made.

Photocathode: New Cs and K sources have been installed into the deposition system along with a new stainless steel substrate. The entire system together with the source arms is being prepared for a bakeout to establish adequate vacuum for deposition.