

Weekly Report – week of September 5th, 2011
Fabrication and Assembly of ERL hardware
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Controls: Remote serial communications troubleshooting for the Danfysik power supplies continued with assistance from ERL personnel, as did software development of the lens controller manager. Development began for the software interface for the DG645 delay generator that will be critical for the timing system. Delivery of our first Gigabit Ethernet-type camera is expected soon, after which software testing can begin.

Cryogenics: CryoControls: Wiring of last few instrumentation on cryoplant side to continue when technician returns from RHIC rack move.

CryoControls: Programming and operator screen development

Cryolines plant: Two field joint vacuum jackets completed, one left to be closed up.

Cryogenic transfer lines to ERL cryomodules: Fabrication continues on valveboxes for cryomodules.

Cryogenic transfer lines to ERL cryomodules: piping supports for these lines: engineering & design resumed

Cryo System: FMEA (Failure Mode Effect Analysis) is continuing.

Sullair compressor: Preparation for compressor run test underway.

Large grain gun test: instrumentations installation and DAQ preparation underway

SRF Gun Cryomodule interfaces: 5K intercept return mass flow meters manifold welded. Installation of mass flow controllers next.

SRF Gun Cryomodule interfaces: Relief header system. Materials to be ordered next week.

SRF Gun Cryomodule cryo instrumentation prep: Ports assigned on layout drawing for each instrument wiring.

Gun Cryomodule/5-cell cavity: Work continued on cathode transporter towards assembly and testing. FPC installation work continues as the cavity string and cathode cart vacuum system are bled up to atmosphere.

Mezzanine: The materials to lift the mezzanine to accommodate the taller clean room are scheduled for delivery third week of September. The under mezzanine VTF cleanroom vendor has acknowledge receipt of order and is producing the required schedule through installation and certification.

Instrumentation: A control and signal processing platform for the differential DCCT for machine protection has been proposed and is under review by the system engineers and the Controls Group. Efforts to support the multiple FireWire CCD cameras on a common bus continues as multiple camera support in the dated C-AD Red Hat Fedora Linux environment presents challenges. A Gig-E camera has been ordered for evaluation and comparison to the FireWire support in Linux. MPS input information is being configured and will be added for the motion control devices. Development of the profile monitor 3-motor lens controller interface continues

Laser: Work continues on the laser transport line. Vacuum equipment has been specified and transport line windows have been received from the vendor. Problems with support placement have been resolved. A controls issue with the steering mirrors was traced to a problem with the cabling which should be straightforward to resolve. Working with Instrumentation and Controls groups to resolve hardware issues for laser imaging diagnostics. Upgrade to control computers in the Laser room may impact phase noise measurements, but we expect the issue to be resolved this week.

Large Grain Gun: Planning meeting was conducted this week to discuss cryogenic preparations for experimental apparatus and blockhouse facility. In addition, discussions commenced and drawings were sent to SUNY Stony Brook to machine parts required for fabrication of new vertical test cathode in copper.

Photocathode: The cesium, potassium, and antimony arms have been removed. Each bellow was detached from the support mechanisms and delivered to the vacuum group to be fired in the furnace. Bellows mounting support plates will be split by the machine shop to aid in the future removal of bellows. Also delivered were the manual valves, elbows, and six way cross sections. Discovered the gate valve for the antimony arm is not seating correctly and will need to be repaired. Thermal couple replacement is pending vacuum group support. Discussions this week included the design of a copper cathode vacuum chamber to mate with the existing transport cart for laser cleaning.

Vacuum: Detail design of the ERL Zig-Zag chamber fabrication drawings continues. Assembly of laser/ion-pump cross with vacuum gauging and ion pump is complete. Laser window and mirror holder processing underway. Preparing test for evaluation of various clean room compatible heater jackets.

ERL injection line: Downstream magnet installation should be complete this week. Upstream solenoid vacuum chamber to be installed.