Weekly Report – week of May 23, 2011
Fabrication and Assembly of ERL hardware
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Cryogenics: The installation of the cryogenic transfer lines and wiring of the temperature and controls wiring continues.

Controls: The hardware implementation of the ERL Event Link that will be needed for the 5-cell RF cavity test using the new digital RF controls system has been established in discussions with the Controls Hardware and RF Groups. Software interface development has recently started for Danfysik and Kepco power supplies, and for a new tool that will be used to administer the Machine Protection System inputs. The initial version of a software interface to the Boonton Pulsed RF Power Meter has also been created. Investigations into the use of bridging software to simplify integration of the Libera Beam Position Monitor modules with the Controls System has begun.

Laser: Conducting simulation studies for 266 nm light production. defective part in Lumera laser identified, ordered replacement + spare from Germany, will arrive 6/3. Climate control in Laser Room is malfunctioning, this is being addressed by HVAC. Preparations for thermal and alignment tests of cathode launch mirror. Design work on timing system and interface with low-level RF and diagnostics software continues.

FPC conditioning: The FPC's for the ERL are having water flow and vacuum interlocks verified prior to testing. The flow rates based on calculations have been compared to supplied tube diameter, pressure (DP) and measured flow rate. The MPS final check-off sheet is near completion.

Photocathode: An extended bake is in progress with a new stainless steel sample installed in the deposition system. Each source arm will get loaded with either Cesium (Cs) and or Potassium (K) and baked. Now, with the ceramic break installed on the sample arm cathode current measurements can be made in the deposition system.

Gun Cryomodule: The gun and string assembly has been delivered to J-Lab for testing. The transport cart upgrade drawings are complete and the drawing package has been estimated and in fabrication.

PASS System: The installation and testing of the VTF PASS system awaits electrical power to be hooked-up.

Mezzanine: A meeting of the mezzanine clean room RFQ evaluation panel has been scheduled for June 1st. The actual cost proposed in the RFQ will be shared with the panel on June 1st. The parts and materials needed for the routing of water cooling lines for the vacuum furnace are being addressed.

Large Grain Gun: A plug to protect the choke joint of the cavity has been designed and materials have been requisitioned. This will allow processing of the cavity to proceed at Jefferson Lab in early June. In addition, a requisition for modifications of the top plate to be performed by the vendor has been approved. The top plate is crated and ready for shipment as soon as the order is placed with the vendor. Delivery of the completed work is expected to require three weeks. Finally, a quotation for fabrication of the magnetic shielding for the experimental assembly has been received from Amuneal and will be reviewed.
5-cell cavity/cryomodule: The paperwork continues for the G-5 test safety review. A fixed date of June 28th and 29th has been set for the next 5 cell run to test the LLRF feedback loop.

ERL injection line: Vacuum envelope is in preparation to final review, correction magnets are under design.

ERL Extraction line: Magnets are being fabricated; beam dump pressure vessel code compliance under evaluation, vacuum/instrumentation layout needs to be reviewed and finalized.

ERL Tech Support Area: The EEBA area is on hold due to funding issues. Design drawings and cost estimates have been completed. The BID packages have gone out for the construction of the enclosure and refurbishment of this area.

ERL Vacuum Support: QA of first article Profile Monitor continues. Most G5 chambers and parts are particulate processed and staged for assembly and leak check. Button BPMs and other beam instrumentation are still needed.