**LCLS-II JUNE PROJECT STATUS REPORT**

**DATE:** July 2, 2015

**LOCATION OF PROJECT:** Jefferson Lab

**SENIOR TEAM LEAD:** Joe Preble for George Neil

**MONTHLY PROGRESS**

Summary

Efforts have focused on advancing LLP for Cryomodule and Cryo Plant items, updates to the project plan prior to the end of July, and the required SRF infrastructure modifications.

Of note are the placement and kickoff of the SRF cavity contract and the completion of the 4 ½ K Cold Box procurement best value evaluation.

Management

Cavity contract kick off meetings were held with both vendors.

Submitted BCR presentation files for planned June and July BCRs. CP#1, Cavity contract details, and CM assembly labor. CP#2 is being prepared for July. Prepared and delivered responses to Cryomodule FDR reviewers’ recommendations that required JLab input.

Presented the recommendation of the 4.5k Cold Box to DOE and developing the PAR to be sent to the DOE on Monday, July 6th.

The new procurement administrative support person started working on 16 June. A new electronics technician started working in the cryomodule production group.

Hosted Jim Healy, from SLAC EH&S, June 11-12, 2015.

Adjusted cavity testing plans to account for delivery schedule of the “off the shelf” 1.3 GHz SSA.

Reviewed scheduled progress with the SLAC project office.

Procurements status:

1. Cavity procurement went through the DOE review process and was awarded.
2. 4.5 Cold Box Technical best value evaluation was completed.
3. Warm Helium Compressor Bid Package best value evaluation was completed.
4. Gate Valves for Prototype with options for Production – approved.

ESH - QA

JLab team created a draft flow chart on the LCLS-II Multi-Lab NCR Communication Plan. The flow chart provides a high-level view of the NCR process and potential interaction points with FNAL. The LCLS-II preliminary NCR flowchart was reviewed with FNAL for feedback. FNAL indicated that they will provide JLab with a copy of their procedure that describes the handling of non-conformance material.

JLab also worked on a production version of the flowchart. The intent is to provide a high-level visual of the process flow and also to identify potential ‘hand-shakes’ by SOTRs among partner labs when non-conforming products are discovered that would require disposition. A draft of the production version of the Multi-Lab NCR communication flowchart was created and is being reviewed internally.

At the QA teleconference with FNAL, we discussed the draft ACS documents for the dressed cavity and some changes to the contents of the form were requested by FNAL. The new JLab ACS Tracker, which is a file that is used to track the internal approval status of the various component ACSs, was also discussed. This is an Excel file that needs to be manually updated and maintained. FNAL expressed interest to gain direct access to the JLab ACS Tracker. The draft ACS form for the dressed cavity was updated and sent to FNAL for their final comments.

The SRF internal QM procedure on Control of Non-Conforming Products is being reviewed to assure alignment to the LCLS-II project.

Cryomodules

Work continued on baseline qualification of two of four cavities for VQ cavities required. AES023 was been baselined. AES025 was vertically tested, but did not pass and will be reprocessed. The other two cavities at FNAL were identified: AES015 and AES017. Other potential cavities were discussed but no project guidance has been provided.

The final cavity for string, AES029, was shipped to FNAL for HV welding.

AES032 and AES033 were received then visually and RF inspected. Both cavities are being prepared for vertical testing in early July.

Jlab identified two cavities at Jlab that can be used as “dummy” cavities for the vendor doping development work.

Drawings were finalized for the HX Can required for testing CMs in CMTF.

An inner magnetic shield assembly to be used in HTB tests was received. Inspection activities for the BPM feedthroughs started and continued.

We shipped HOM feedthroughs to Cornell in support of AES031 HTC testing. Mechanical and receiving inspections for the HOM and Field Probe feedthroughs were completed and are undergoing leak checking and thermal cycling. The initial leak checking and cold shocking was completed. A subset of these components was shipped to FNAL to support cavity qualification activities.

Sets of cavity vertical testing hardware was received into inventory. A subset required for cavity qualification at FNAL was shipped this week.

CM Assembly tooling including the 10t spreader bar, cold mass assembly fixture and part of the cantilever fixture were received and had initial inspections. Some workmanship and welding issues were identified and were addressed with the vendor during a visit to JLab. Positive responses on all issues and actions are underway to fix items as needed.

The fixed end of the cantilever fixture was received and inspected at JLab. It is currently being installed. The moveable end of the cantilever was returned to the vendor for re-work. It is expected to return to JLab in mid-August.

We held the CM shipping and handling meeting at JLab. We discussed the shipping fixture design, shipping test plans, handling of CMs at PLs and SLAC. A draft plan for receiving, inspecting and handling CMs at SLAC was developed.

We visited SACLAY on June 11-12, 2015, to discuss XFEL CM Assembly and QA topics with SLAC, FNAL and CEA colleagues. Discussions were very productive as CEA allowed us to visit the production floor and observe assembly activities up-close. The FNAL/JLab Team that witnessed production activities is assembling a report from the visit.

One cavity vendor, RI Research Instruments, visited JLab on June 16th to witness doping and EP processes. The other cavity vendor, Ettore Zanon (EZ), visited JLab to witness doping and EP processes. Site visits to these vendors are scheduled for July 9-10th at Ettore Zanon and July 13-14th at RI Research Instruments.

Cryoplant

The technical evaluation documentation, best value determination and source selection recommendation for the 4.5K cold box was completed. The recommendation documentation will be forwarded to DOE on Monday, July 6th. The warm helium compressors technical evaluation and recommendation was delivered to the source selection officer. The best value determination for the warm helium compressors between the commercial and technical proposals with a recommendation presentation to the Source Selection Officer should be completed by July 9th.

Additional JLab coordination meetings were held to plan manpower and equipment costing to support planned BCRs for the first (CP1) and second cryogenic plant (CP2). The BCR for CP1 was June 25th and was approved. The BCR for CP2 presentation was moved to July 16 from June 25th.

A decision was made in the Weekly Cryogenic Systems CAM Meeting to have FNAL provide the distribution system transfer line from the gallery into the cryoplant building.

A table of relief value tag names and sizes for the cryogenic process interfaces for design coordination and past JLab 2K heat exchanger performance was submitted to FNAL on June 19th. The relief table data included Cryoplant source gas flow capacities to the distribution system during a fault event.

Preparations are underway for the arrival of three SLAC engineers who will be working with JLab on the cryoplant design. This included office space and plans for site access training. Two engineers were scheduled for July 1st, one for August 1st, but the arrival dates have been delayed.

Weekly meetings with SLAC Infrastructure resumed for planning the new larger cryoplant building. Discussions centered on the proposed equipment layout previously provided to infrastructure for review, and the water and electrical service entrances, control room requirements, and building column locations. Two trips to JLab have been scheduled by the A&E/SLAC: one for July 14th; and the other TBD in August (possible target date, 3rd week of August).

Cryo-distribution

No effort at Jefferson Lab.

LLRF

Hosted LLRF Team meeting at JLab. Discussion items included: a) hardware delivery dates assigned; b) authors and dates assigned for ESD; c) 18-month schedule through FDR developed. Sent out the meeting minutes and prototype activity due dates.

Sent revised edits of the LLRF FRS to Theresa Wong at SLAC.

Reviewed stepper schematic for tuner and it is ready for lay out.

Started assembling data for the common chassis power supply.

Reviewed the SSA placement with JLab engineers.