Weekly Reporting

WBS 1.01.07 JLAB Management

Week of Jul 22-28, 2016

**Issues:** Need to develop and qualify the new processing steps for SRF cavity and material. This will have significant impact on the SRF cavity cost and schedule.

**Accomplishments this week:**

Preparing for the upcoming cryo installation workshop to be held at JLab 10-11 August.

Working on cavity contracts modifications to support the high Q0 development work.

Working on responses to FAC review recommendations.

VTA test of the first RI cavity.

**Upcoming Activities:**

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of Jul 22-28, 2016

**Issues:** Niobium tubes are on the critical path for RI and Zanon cavity production. Efficient transfer of lessons learned from FNAL pCM assembly in order to reduce JLab pCM assembly duration.

**Accomplishments this week:**

Continuing discussion on approach for improved flux expulsion. Received direction from project to expedite four cavities from RI. Two bare cavities with 900 deg C bake will be shipped from RI in support of this effort. Two dressed cavities with 900 deg C bake will be shipped from RI in support of this effort. Exact schedule to be confirmed with vendor. Four single cell cavities are in fabrication.

Discussed options with L. Young at SLAC for bringing SLAC technicians to JLab to support CM assembly.

Need transfer of funds from 1.08 to 1.04.06 in order to procure components for spare CM.

Cavity Procurement

RI – First four cavities at JLab are going through receipt inspection. First cavity tested (L2-002) had low Qo (1.5 x 10 ^10) and max gradient of 24 MV/m administratively limited. Causes are being investigated. Second cavity (L2-005) planned for testing on 29-July.

Four cavities have been shipped to FNAL. Balance of first articles are completed. Hold point #3 is under review. These cavities are in process of shipping to JLab and FNAL.

See FNAL weekly report for status of material shipments. Currently connection tube materials are critical path for cavity vendors.

Zanon – Four cavities are through hold point #2, four have advanced past hold point #1. All are on schedule for shipment in late August. Eight more cavities are in welding and expected to complete hold point #1 starting next week.

Production tuner frame first article inspection was approved at vendor 26-July. Y. Pischalnikov (FNAL SOTR) participated at the vendor and JLab.

JLab technician trained at JLab by FNAL SOTR on tuner installation.

First article Shipping Frame is in final steps prior to painting and completion. Some shipping cap welds need to be re-qualified, which is due to be completed by the end of the week. The delivery date will be dependent on the qualification's completion.

List of requirements for shipping test has been developed.

Quadrupole leads soldering is complete and leads are routed to the vicinity of the 300K flange. Instrumentation of the quadrupole has begun. (13 temperature sensors are mounted in various locations on the leads). Production qty 18 ea 300K flanges have arrived along with a leak check fixture. An as-built modification is required. Developing an inspection traveler/procedure. Production qty 17 ea 50K heat station assemblies have arrived. Developing an inspection traveler/procedure.

We received ~40 unplated bellows from Lesker that are in QC.

Planning shipment of most remaining small parts for PICs will be this week to cavity vendors. Right angle valves will arrive at cavity vendors in approx 1-1.5 weeks.

Completed QC of 2 qualification bellows from first plating vendor with the FNAL SOTR here at JLab. First vendor successfully qualified and received a contract award. Second plating vendor qualification bellows (qty 1) is going through QC.

CM assembly activities:

Two-phase invar support rings have been completed. Invar rods welded, cut to length and installed. Both GHRP testing caps have been installed. Indium and mylar heat shrink added to heat stationing straps. Leak check of cryogenic circuit in progress. Magnet work nearing completion; remainder is limited to additional instrumentation and shims. 50k lower shields are in JLab machine shop being modified to meet recent drawings. String alignment plan and procedure is being finalized.

Significant effort in progress to map magnetic fields and understand remediation for magnetic hygiene. pCM VV is relocated to be adjacent to the cantilever tool. Field inside VV is mapped and the field magnitude increased from the 50-100 mG level measured after demagnetization. Plan to measure the ambient near the cantilever tool.

Vacuum Vessel - JLab is still waiting for PHPK's subcontractor's welding docs related to the longitudinal welds on the pCM VV. WPS/PQR/WPQ and weld inspection report are needed.

JLab receiving inspection of MC coupling line F10010017 is held up because lack of vendor documents. Fermi is informed.

Cryomodule Test Facility

Lead brick installation around fan stack has begun. Continued routing of new RF and multiconductor cables.

CM Assembly completion in P6 – 19-OCT; CM Testing start in P6 – 20-OCT.

Awaiting procedures from FNAL for magnet lead installation. Awaiting procedures focused on electrical methods for installation of instrumentation.

**QUALITY** –

* A JLab team, accompanied by Fermilab SOTR Yuriy Pischalnikov, visited Vision Machine and Fabrication Corp, the local vendor for the production tuner frames. The first article production frame was available on-site at Vision for review, which we then brought back to Jlab for incoming inspection and fit up checks.
* On-going QC inspections and discussions on the bellows samples received from the two potential production copper plating vendors. Ken Premo arrived from Fermilab to participate in the bellows inspection and discussion of the QC activities.

Planned Travel:

* WXCX Vendor Visit 1-5 AUG
* BLA Vendor Visit 14-18 AUG

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of July 22-28, 2016

**Issues:**

**Accomplishments this week:**

The LN2 dewar procurement specification remains in circulation for comments and/or approval. A BCR is being prepared to move the supply of the dewar from SLAC to JLab.

The FDR date for the 4.5K cold box is 7-8th September. The last of pre-FDR review documentation (4.5K Cold Box P&ID) was delivered (4.5K cold box P&ID).

Work continued on the 60% 2K cold box assembly design documentation

Bids for the warm helium gas storage vessels are due by 8 August. A BCR is being prepared to purchase two additional vessels.

The 4.5K cold box vendor is in the process of developing the 3D internal piping design for the upper and lower cold boxes. A preview of the customer access within the cold boxes is planned between JLab and the vendor from the week of July 25th to 3rd of August.

The design of the transfer line interface boxes continued through the week.

A request by BIO to move the BIO meeting from 9th of August to the 16th has been received.

**QUALITY** –

* Participated remotely in the LCLSII FAC Review Closeout Session that was held at SLAC.
* Reviewing the 30,000 Gallon LN2 Dewar Technical Specification.
* A visit to the warm helium compressor vendor is planned toward early August for compliance verification.
* Continue to work with CryoPlant staff on the M: drive for storing vendor supplied documents.

**Upcoming Activities:**

Cryoplant BIO Review 16 Aug 2016

Director’s Review 28 Aug-1 Sept 2016

4.5K Cold Box FDR 7-8th Sep 2016

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of Jul 22-28, 2016

**Issues:** None

**Accomplishments this week:**

**JLAB**

* LLRF Coordination/Documentation:
  + Prepared for CMTF/S design freeze presentation.
  + Dave is meeting with CMTF controls coordinator. This is an ongoing meeting that coordinates the work being done in the CMTF for the pCM tests.
  + Board designer and fabrication resources continue to be a bottle neck. We are actively pushing LCLS-II projects through as best we can.
* Resonance/Stepper Motor Board/Chassis:
  + Resonance chassis: The third chassis is in assembly.
  + Two FMC boards have been tested. Next to install in 2nd chassis and test.
  + Resonance FMC connector board: Layout has been modified and is out for manufacturing.
  + Stepper boards: two more have been assembled and are ready for testing.
  + Modified power breakout board is being assembled. We plan to install it in the resonance chassis soon to test.
  + New power connector boards are back (safety mod) and ready for installation. We will also send these to SLAC/LBNL for installation on the PRC and RFS
* Interlock Board/Chassis:
  + FEP: Onish is modifying the layout, complete by next Tuesday.
  + ARC/IR boards: Is assembled and waiting test.
  + FMC connector board (interlocks): Schematic will be done next Tuesday and then will be given to a designer. Hopefully completed in two weeks.
  + Interlock Chassis: Schedule has slipped to 9/1/16 for chassis completion because of designer and fabrication resource issues.
  + Power supply board is in CAD.
* Common Power Supply/Chassis:
  + Additional chassis are in fabrication (for LBNL/FNAL). More to follow.

**Upcoming Activities:**

* JLAB:
  + Continue prototype tests and assembly (resonance, interlocks, power supply)
  + Send FNAL a resonance and power supply chassis (late next week).