Weekly Reporting

WBS 1.01.07 JLAB Management

Week of Aug 19-25, 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:**

We continue preparations for the Director’s review.

We have finalized VARs.

The Cold Compressors contract was awarded.

We continue to negotiate with the cavity vendors for cost and schedule impact of changing production requirements. We have received proposals from both cavity vendor and have requested clarification from one.

Completed accruals reporting.

**Upcoming Activities:**

Director’s Review 30-AUG to 1-SEP

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of Aug 19-25, 2016

**Issues:** Efficient transfer of lessons learned from FNAL pCM assembly in order to reduce JLab pCM assembly duration. Funding mechanism for spare CM components needs to be clarified. Cost and schedule impacts due to cavity recipe development effort at vendor.

**Accomplishments this week:**

Received direction from project to modify EP bulk removal to 200 microns by weight on balance of first articles (8 units) at Zanon. Additional direction has been received to include 900 deg C annealing. Vendor (Zanon) has evaluated impact on cost and schedule.

Technical status meeting covering recent status from single cell tests and multi-cell tests at JLab & FNAL and a verbal update on R&D schedule and activities at FNAL.

Reviewed accruals with JLab PMO.

Continuing with preparationsContinuing preparations for combined CM PRR with FNAL in mid-September.

Cavity Procurement

RI is focusing on two bare and two dressed cavities with 900 deg. C and increased EP (200 microns by weight). The contract modification has been signed. All four cavities have reached hold point #1. The two bare cavities will ship from RI on 20-Sep and the two dressed cavities will ship 4-Oct.

Zanon has started bulk EP – three cavities have had 200 micron by weight this week. All first articles are past hold point #1. Eight of the first articles are past hold point #2. Of these eight, the first two will ship from Zanon in early September and the balance of six by the end of September.

Single cell testing is on-going - results are reported in collaboration cavity status spreadsheet.

Continuing first article inspections at JLab (0009, 0010, 0012, 0014). Acceptable results from test of CAV0014 – 2.7 x 10^10 at 16 MV/m, Emax of 24 MV/m, no field emission. Results from CAV0012 – 2.3 x 10^10 at 16 MV/m, Field emission onset at 17 MV/m – cavity will be re-rinsed and retested 30-Aug. Results from CAV0010 – 2.4 x 10^10 at 16 MV/m, Field emission onset at 17.5 MV/m, input cable issue limited testing – cavity will be retested with new cable 29-Aug. More detail can be found in cavity status spreadsheet.

See FNAL weekly report for status of material shipments. Currently connection tube materials are critical path for cavity vendors. Last shipments planned to arrive at vendors by the end of August.

Received first set of cu-plated bellows and spools plated by SLAC this week at JLab. An set will be shipped next week. Discussing possibility of having SLAC plate more sets of bellows as a schedule risk mitigation.

BLA drawings provided by NCBJ (in polish/English) have been transmitted to FNAL and JLab. These drawings are based on the 3D model provided by DESY. An interface drawing has been proposed to FNAL in order to control the configuration of the produced component. It is understood that there are no changes from the XFEL design to the LCLS-II designs.

CM assembly activities:

Magnetic shielding end caps are being installed. The 50K coupler intercepts are being installed. The remaining HOM heat stationing clamps have been added. Leak checking of the magnet lead flange, bellows, and feed-thrus is on-going. Split ring on tuner 8 was found to be SS instead of Ti, 2.5G field measured. It has been removed, demagnetized and re-installed. Replaced faulty stepper motor on cavity 6 with a replacement provided by FNAL.

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

Cryomodule Test Facility

Continued routing of new RF and multiconductor cables. Installing coaxial waveguide supports on mezzanine near SSAs. Developed scheme for mixing valves to support CM cooldown – specified warm valve and flow meter have been ordered.

CM Assembly completion in P6 – 20-OCT; CM Testing start in P6 – 21-OCT – this testing start includes the activities required to connect and cooldown the CM. Cavity testing as part of CM testing is expected to begin about three weeks after CM arrives in CMTF.

**QUALITY** –

* + Continue with the process of reporting on Significant NCRs, which includes monitoring and submission of new ones as well as those that are ready for closure.
* Investigated and determined the best avenue for JLab to capture the documentation on the pCM cavity split rings with the incorrect material (SS should be Ti). This was a recent incidental discovery after the pCM cavity string had already been installed to the upper cold mass assembly.
* Continue to review the fabrication QC documents for the production upper cold mass assembly from WXCX.

**Upcoming Travel:**

* + Directors Review 30-AUG to 1-SEP
  + PRR at FNAL 14-15 SEP

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of Aug 19-25, 2016

**Issues:**

**Accomplishments this week:**

The LN2 dewar and 4160V MMC procurement specifications remain in circulation for comments and/or approval.

The 2K compressors procurement were awarded within budget and schedule. Reviews of the design are tentatively set for October and December 2016.

The FDR date for the 4.5K cold box is 7-8th September. The review will be held in Delaware at the Air Liquide Research Center. Final documentation posting (supporting the review) is running late with 60% submitted as of 8/22. An agenda has been released.

Work continued on the 60% 2K cold box assembly design documentation. A date for the 60% design review has been set for 20 Sept 2016 LCLSII cryoplant engineers (JLab and SLAC) attended the 2K Cold Box design review for the FRIB project on Wednesday, 24th August.

Preparations were made to support an installation coordination meeting to take place at SLAC on Monday, 29 August. An agenda has been issued for the meeting.

The design of the transfer line interface boxes and related transfer line continued through the week. A review of the interface box design and connected transfer line has been set for January 2017.

A request for a 30% BIO actual technical design review has been suggested in lieu of an overall design approach presentation. The installation design review has now been set for 18 Oct 2016.

Presentations for the Director’s review were completed and uploaded to the review site.

**QUALITY**

* + A visit to the warm helium compressor vendor is planned for 30-31 August for compliance verification.
  + Continue to work with JLab CryoPlant staff on the M: drive for storing vendor supplied documents.

**Upcoming Activities:**

Director’s Review 30 Aug-1 Sep 2016

4.5K Cold Box FDR 7-8th Sep 2016

2K Cold Box PDR 20 Sept 2016

DOE Status Review 12 Oct 2016

Installation Design Package PDR 18 Oct 2016

Interface Box/Transfer Line PDR January 2017

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of Aug 19-25, 2016

**Issues:** None

**Accomplishments this week:**

JLAB

* LLRF Coordination/Documentation:
  + Preparing LLRF presentation for Directors review.
  + We are continuing to upload board and chassis documentation to the SLAC website as it is made available.
  + Discussed resource issues with Engineering and LCLS-II management.
* Resonance/Stepper Motor Board/Chassis:
  + 2nd Resonance chassis: Chassis is 90% tested.
  + 3rd Resonance Chassis: Waiting to be tested.
  + Updated Resonance FMC board: Came in and was immediately sent out for assembly. Should be back after Labor Day.
* Interlock Board/Chassis:
  + Interlock Chassis: Schedule is now 10/1/16) for chassis completion.
  + FEP Board: Is out for board manufacture.
  + ARC/IR boards: No change from last week. Board is functional but ADC/DACs are still being tested.
  + Interlock FMC connector board (interlocks): Is out for manufacture back next week.
  + Power supply board is still in CAD should be finished next week.
* Common Power Supply/Chassis:
  + Two chassis are complete.
  + Additional three chassis are in fabrication (for LBNL/FNAL).

**Upcoming Activities:**

* + JLAB:
  + Continue prototype tests and assembly (resonance, interlocks, power supply)
  + Next week Directors Review
  + FNAL pCM LLRF tests (September)
  + DOE Review (October)