Weekly Reporting

WBS 1.01.07 JLAB Management

Week of April 15-21, 2016

**Issues:** Some material remains to be delivered to the cavity vendors; sheet material from DESY, non-sheet material from FNAL.

**Accomplishments this week:**

Phil Kessler is taking a larger role in the PMCS team supporting LCLS II and will focus on the P6 schedule. Phil additional time is very welcome and has an extensive background working with projects like the Jefferson Lab 12 GeV upgrade.

SLAC staff are here working with our PMCS staff and CAMs on the schedule.

**Upcoming Activities:**

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of April 15-21, 2016

**Issues:** Project schedule driven by production cavity delivery schedule – best schedule from vendors is available. Project needs to investigate other ways to recover float beyond CM production. Need to consider how to handle cavity acceleration incentives via BCR or other mechanism. Lack of resources (subject matter experts) for CTM refurbishment activities may delay cavity production.

**Accomplishments this week:**

The following list of BCRs has been discussed with the SM and are in progress: Production CM Cancellation Coils (in preparation), HX for Testing Production CMs (in preparation).

For HOM beamline absorbers, we are reviewing a revised cost estimate and a plan for particulate-free cleaning at JLab after shipment from the vendor. For production FPCs, we are reviewing an initial cost estimate and new plan for storage of cold couplers under vacuum.

We are developing a cost estimate for a heat exchanger dedicated for use during production CM testing. MSU/FRIB needs the existing one returned after prototype CM testing.

Details for updated pCM EAC labor estimates have been entered into P6.

We reviewed the current P6 schedule with visiting SLAC PMCS staff (Boysen, Zhender).

Key dates for pCM:

Cavity string assembly complete – 29-Apr-2016.

CM assembly complete – 21-Sep-2016.

Cavity Procurement

Actively working cavity production schedule issues in order to recover schedule float by accelerating vendor delivery rates. Current P6 forecast schedule reflects JLab’s best estimate and shows some negative float for the early cavity deliveries.

RI and ZANON have first article production is underway. Both vendors are making good progress on single parts fabrications.

See FNAL weekly report for status of material shipments.

Fabrication of four single cell cavities has started. These will be built and tested in order to evaluate flux expulsion characteristics for production cavity materials.

Held discussion to resolve issues related to project roles and responsibilities for CTM support during production. Topics included more effective communication, access to SMEs at JLab, FNAL and DESY and next steps to avoid delaying the cavity production.

Visit to ZANON for CTM refurbishment is pending negotiations between DESY & Zanon. JLab has given ZANON approval to proceed with refurbishment activities.

Cavity vendor visit planning is on-going – tentative dates are 10-19 May to ZANON and RI respectively. Agenda has been developed and circulated for feedback.

Cavity string assembly: Six cavities with couplers are currently on the assembly rail. Plan to complete assembly on 4/21. Plan to pump-down and rough leak check on 4/22 followed by fine leak check planned for 4/25.

JLab alignment team is visiting FNAL to witness cavity string alignment.

Modification of parts and assembly of UCM (GHRP) ongoing: Removal of flange for Magnet 5K intercept is complete. Received the re-designed invar rod clamps. Received updated magnetic shield install procedure. VV QC has been discussed with QC and alignment groups. Final super insulation of bayonet boxes in progress. Repair weldment of vacuum vessel end caps in progress.

JLab visited FNAL to learn more about the SC magnet lead soldering and discuss CM instrumentation installation.

In the CMTF, the 480 VAC wiring between the voltage verification unit (VVU) and Personnel Safety System (PSS) panels is complete. SSA controls and 120V convenience outlet circuits are complete. Completed modifications to cable tray insides test cave to make room for coax hardline. Installed supports for hardline coax and completed installation of first section of coax inside test cave. RadCon shielding assessment is under review - may be able to use 3” iron shields as an alternative for lead bricks.

We are preparing to make an award for production cavity string bellows and spools. We held a discussion with FNAL and SLAC colleagues in order to resolve material issue vs. magnetic hygiene.

**QUALITY**

We had a follow-on meeting with Fermilab to discuss the up-coming trip to WXCX. In particular, Fermilab and JLab shared thoughts and ideas on the shipping of the product deliverables from China to the partner labs. The goal was to assure that the solution will work for both labs.

Gary Cheng and JLab team reviewed the list of QC checks for the prototype vacuum vessel presently on site at JLab. The list was provided by Fermilab, after they finished measuring their own vacuum vessel. JLab separated the items into Survey & Alignment vs. CMM Inspection groups. A draft inspection traveler is being worked on at the moment.

A summary of the JLab outstanding ACSs will be forwarded to other colleague at Fermilab for help to assess comments and feedback.

**Upcoming Activities:**

* Visit FNAL to observe cryomodule alignment process April 17-22, 2016
* Vacuum Vessel Vendor Visit to China April 24-29, 2016
* Shipping Frame Vendor Visit to PA April 26, 2016
* Visit FNAL to observe tuner installation May 2-6, 2016
* Cavity Vendor Visit to Germany & Italy May 10-19, 2016
* Coupler Vendor Visit to France & Germany May 19-26, 2016

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of April 15-21, 2016

**Issues:** 4.5K Cold Box PDR Action Items, Warm Helium Compressor CDR Readiness

**Accomplishments this week:**

Request for Proposals has been released for the procurement of 2K cold compressors for both CP1 and CP2 cryogenic plants. Responses will be received in May 2016.

The 4.5K cold box vendor PDR action items with the vendor on 13 April indicate completion by 4 May as scheduled.

Warm helium compressor skid frame weldments are well underway at the vendor shop with 4 compressor skids. This includes both HP and LP compressor skids. A JLab welding inspector is reviewed the weld quality on site on 14 April.

Peter Knudsen (JLab ME) and Damon Rath (lead designer) have been assigned to the 2K cold assembly design. Plans include a 30% design review middle of August, 60% middle of November and 100% for middle of December 2016. The JLab Cryogenics Systems Group Leader (Jonathan Creel) and/or Michael Bevins (assistant JLab Cryogenic Plant CAM) are assigned as the JLab/SLAC information/communication representatives.

The approval of the oil removal vessel procurement specifications has been completed by SLAC and is being prepared for procurement. Helium storage vessel procurement specification modification release (based on SLAC comments) still remain to be approved by SLAC reviewers.

P&IDs have been updated for CP2 and are under final review for release.

**QUALITY**

Mike Martin (JLab Welding Inspector) visited the warm helium compressor vendor (PHPK) to review the welding fabrication of the compressor skid base frames.

**Upcoming Activities:**

* Warm Helium Compressor CDR, 25 May 2016
* Completion of the 4.5K PDR follow up action items

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of April 15-21, 2016

**Issues:** None

**Accomplishments this week:**

JLAB

* LLRF Coordination/Documentation:
  + Began work on the CMTF network to support LCLS2 LLRF systems. Discussed basic design with JLAB Network engineers and SLAC/LBNL folks (Larry/Carlos/Garth).
  + BMB7 Board: Rama is getting code from Gang.
* Resonance/Stepper Motor Board:
  + Stepper board should be in 4/22. Board will be assembled next week.
  + Chassis distribution power board: Design complete, should go out for manufacture next week.
  + FMC breakout board: Received changes from Larry and board had to go back to design. Because of a designer leaving JLAB, board will be delayed 1-2 weeks. We expect to have an assembled board mid-May.
  + Resonance chassis front and rear panels are out for quotes.
* Interlock Board/Chassis:
  + FEM: Board is being bench tested.
  + Temp boards will be assembled next week.
  + ARC/IR boards waiting for designer (small change to connector). This board will be delayed 2 weeks. We expect to have one assembled by late May.
* Common Power Supply/Chassis:
  + Assembly almost done. Power supply chassis should begin tests next week

**Upcoming Activities:**

* JLAB:
  + Continue prototype tests and assembly (resonance, interlocks, power supply).
  + CMTF: Continue working on documentation, installation and instrumentation.
  + Resonance chassis tests with FNAL late-May.
  + June 13-17 Rack assembly, test and shake down (JLAB).