Weekly Reporting

WBS 1.01.07 JLAB Management

Week of April 8-14, 2016

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

**Accomplishments this week:**

Cold Compressor RFP is out on the street.

Updated shipping frame proposals came back.

Continue to push BCRs, EACs

Staff at FNAL for assembly and instrumentation activities.

**Upcoming Activities:**

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of April 8-14, 2016

**Issues:** Project schedule driven by production cavity delivery schedule – need to recover float. Need to consider how to handle cavity acceleration incentives via BCR or other mechanism. Lack of resources (subject matter expert) for CTM refurbishment activities may delay cavity production.

**Accomplishments this week:**

The following list of BCRs have been discussed with the SM and are in progress: Production CM Cancellation Coils (in preparation), Beamline Bellows / Spools Cost and Schedule (status: developing P6 file, plan to present at CCB 4/14), and production cavity schedule (status: developed P6).

For HOM beamline absorbers, we have developed a revised cost estimate and a plan for particulate-free cleaning at JLab after shipment from the vendor. For production FPCs, we have developed 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.

EAC for pCM has been accepted as an adjustment to the existing P6 plan. Details of updated labor estimates are being entered into P6.

Key dates for pCM:

Cavity string assembly complete – 29-Apr-2016.

CM assembly complete – 7-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.

A batch of HOM housings (52 pcs) has been shipped from FNAL to DESY as an expedited shipment. Remaining tube materials from ATI have shipped from FNAL and received at DESY. Customs inspector will visit DESY to clear these materials for shipment to both vendors.

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. Draft agenda has been developed and will be circulated for info.

Cavity string assembly: Parts and components have been prepared for cavity string assembly. A pair of FPCs are being requalified for use in the string – expected ready for installation on 4/18. Plan to start assembly on 4/14 with leak check planned for 4/22.

Cavity string inspection: Successfully re-tested AES034 in vertical test – Qo and maximum gradient are the same as previous tests.

Alignment team re-positioned the second four-poster. Modification of parts and assembly for the UCM (GHRP) are nearly complete. Successfully test fit the bayonet boxes to the vacuum vessel using new tooling. Final super insulation of bayonet boxes in progress. Two-phase piping sub-assemblies were completed. Leak checking of the cryostat vacuum vessel end caps is in progress. The assembly rail extension is in machine shop for final machining.

The cable trays inside the test cave are being modified to make room for the coax hardline. The RadCon group shielding assessment is under review – a precursor to modification fan stack shield wall. The 1.3 GHz field control chassis’ have been built and are ready to be installed. These are on hold until the new RF cable installation is completed.

**QUALITY**

We had a meeting with Fermilab to discuss the upcoming trip at the end of April to WXCX, the VV manufacturer in China. The VV is a Fermilab led procurement but JLab can provide the technical and QA/QC support leveraging our experiences with large scale productions. We expect to witness the first two production VVs that will be completed or near completion during our visit. Until then, Fermilab will circulate a proposed agenda and we will continue to exchange information before the trip. JLab also has questions about the shipping plan of the finished goods in production coming from China. We’ll have another follow-on meeting with Fermilab early next week.

**Upcoming Activities:**

* Visit FNAL to observe cryomodule alignment process April 17-22, 2016
* Visit FNAL to observe tuner installation April 2016
* Vacuum Vessel Vendor Visit to China April 24-29, 2016
* Cavity Vendor Visit to Germany & Italy May 10-19, 2016

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of April 8-14, 2016

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

**Accomplishments this week:**

The 2K cold compressor procurement specification has been fully approved by SLAC and released to JLab procurement. The 2K cold compressor PRR and PCR have been approved.

Request for Proposals has been released for the procurement of 2K cold compressors for both CP1 and CP2 cryogenic plants.

The 4.5K Cold Box PDR was held at JLab on March 10. Major comments from reviewers are currently being addressed by the vendor with additional comments to be transmitted by April 31. A review of the status for completion of the remaining 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 reviewing the weld quality on site on 14 April.

Status reviews for both the warm helium compressors and 4.5K cold box was held at PHPK, Columbus, OH on 13 April. Attendance included both SLAC and JLab procurement, engineering, and project management and JLab QC. The reviews were very productive which covers resolution of topics of outstanding PDR/CDR vendor action items and the path forward. A few clerical errors were discovered in reviewing the presented schedule and status resulting in no change in projected schedule, cost, or technical issues.

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**

Information on acceptance checks of the 2K cold compressor was forwarded to Mike Skonicki. This was in response to the follow-on QAQC questions that Barry Miller had after the PRR that was held at JLab on March 30th. Barry wanted to be sure that Mike Skonicki is informed of the procurement.

**Upcoming Activities:**

* Warm Helium Compressor CDR, 25 May 2016

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of April 8-14, 2016

**Issues:** None

**Accomplishments this week:**

JLAB

* LLRF Coordination/Documentation:
  + BMB7 FPGA board we have some of the documentation. The designer is measuring it to fit it into the Resonance and Interlock chassis.
* Resonance/Stepper Motor Board:
  + Stepper board is out for manufacture.
  + Chassis distribution power board: Onish Kumar took over the design. He has finished the schematic and is working on the layout. Plan to have it complete 4/21.
  + FMC breakout being reviewed by LLRF team. Once approved (4/14 LLRF meeting) it’s ready for manufacture.
  + Resonance chassis front and rear panels are still being reviewed.
* Interlock Board/Chassis:
  + FEM: Board is being assembled by fabrication.
  + Temp boards are out for manufacture.
* Common Power Supply/Chassis:
  + Sending PS connector boards to Sending PS connector and LED boards to LBNL for RF station and PRC.
  + PS Chassis front and back panels are at the vendors, should be back next week.
* CMTF
  + VVU is hooked into the power grid.
  + Electricians have hung the coax supports for the bottom third of the coax.

**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 mid-May.
  + June 13-17 Rack assembly, test and shake down (JLAB) This has slipped a week.