Weekly Reporting

WBS 1.01.07 JLAB Management

Week of April 1-7, 2016

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

**Accomplishments this week:**

Received Q3 funding.

Continue to push BCRs, EACs

Held P6 schedule reviews with SM for the CP and CMs

Host Tanya and Andrew at JLab for various meetings.

Reviewing shipping frame vendor proposals.

**Upcoming Activities:**

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of April 1-7, 2016

**Issues:** JLab pCM schedule is driven by the availability of parts including a completed GHRP assembly. Project schedule driven by production cavity delivery schedule – need to recover float.

**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), and production cavity schedule (status: developed P6 file, next step is incentives). Need to consider how to handle cavity acceleration incentives via BCR or other mechanism. For HOM beamline absorbers, we are developing a revised cost estimate and developing a plan for particulate-free cleaning at JLab after shipment from the vendor. For production FPCs, we are developing a cost estimate and new plan for storage of cold couplers under vacuum.

EAC for pCM is being prepared for presentation at CCB on April 14.

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 has been contracted to provide 16 cavities – 8 in early July and 8 in early August. RI agreed to accelerate their production schedule. Third set of eight cavities will be available for second production CM at FNAL.

ZANON will not provide any accelerated cavity deliveries. First cavities from Zanon will be available for the second production CM at JLab.

RI and ZANON have first article production is underway.

Remainder of HOM housings and rods, inadvertently omitted from FNAL shipment to DESY, will be shipped from FNAL as an expedited shipment.

Remaining tube materials from ATI are being inspected at FNAL and will be shipped upon completion, expected mid-April. QCR on connecting tubes dispositioned – three tubes returned to ATI due to dimensional issues. QCR on short tubes awaiting disposition – at least three tubes unacceptable; another has a dent.

Remaining cell material (39%) has been inspected at DESY and is expected to ship to both companies in Mid-April. Vendors have 61% of total materials in-hand.

DESY colleagues visited RI and refurbished CTM. Visit to ZANON 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 is being developed.

Cavity string assembly: String was vented to atmosphere. FPCs and bellows were removed from rail. Cavities were removed and placed on a storage rack in the clean room area. Inspection completed. Cavity AES035 has been re-tuned with Timergali’s help to ensure it meets cold frequency target. Other cavities are being measured warm to ensure frequencies are within range. Some may be re-tuned. Expect re-assembly of first cavity (AES030) on the rail by end of this week.

Cavity string inspection: Two long bellows have significant oxidation and will be replaced with recently qualified spares. One FPC bellows dented during disassembly and will be replaced with a spare FPC on-hand. White speckling visible in several cavity beam tubes, seems to be inherent to material. It is not particulate, and does not rub off or smear. It is not removed with water, alcohol or acetone. This residue may have been present during the last VTA qualification test. We plan to re-qualify AES034 in vertical test. Schedule supports this test as AES034 is the sixth cavity to be put into the string.

Modification of parts and assembly of UCM (GHRP) ongoing: Aluminum upper shield is installed. Instrumentation mounting and harnesses are in progress. Heater assembly is in process of being assembled. Gate valve support bracket has been surveyed and welded. Installed RF cable 5k heat intercept clamps. Two-phase pipe sub-assemblies are complete. Magnet tooling is in house; mock up to lollipops has been completed. Assembly rail extension is in machine shop. The JLAB Alignment team is positioning four-poster tooling.

Met with FNAL colleagues to review current plan for shipping fixtures and coordinate activities between PLs. Design verification tests at JLab (shipping trial followed by cold test) will be completed after FNAL’s planned pCM shipping date. Alternatives for design verification are being considered.

**QUALITY**

* JLab submitted the first LCLSII Significant NCR Dashboard report to SLAC. In addition, a listing of all of the open and closed NCRs for the pCM was provided. There have been 258 NCRs generated since the start of the pCM but only 3 are viewed as “Significant.”
* Fermilab has scheduled a meeting with JLab next week to discuss the plan and agenda for the visit to the production VV manufacturer last week of April. QA & QC are among the topics of discussion in the planning meeting.

**Upcoming Activities:**

* Timergali to visit JLab to support cavity re-tuning plans, 6-7 April
* Visit FNAL to observe cryomodule alignment process April 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 1-7, 2016

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

**Accomplishments this week:**

A PRR for the cryoplant CP1 & CP2 2K cold compressors was held at JLab on March 30. JLab has received approval to move ahead with the procurement following the review. JLab procurement is working to finish final procurement readiness and conduct the PCR.

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.

Warm helium compressor skid frame weldments are underway at the vendor shop. The planned visit to the vendor facilities was completed April 4-5 to review progress is preparation of the planned CDR on April 25th. OF special interest was the seismic analysis status. Report for the trip is pending.

Specifications for the warm helium oil removal vessels, gaseous helium storage vessels, and final charcoal vessel are being circulated for final review. JLab has received comments from reviewers and these are being addressed.

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

A planned visit to meet with the 4.5K cold box and sub vendor (PHPK) is being planned for April 13. Topics of discussion include status of completion of PDR action items, general arrangement drawings and interfaces for the cold boxes, MLI welding protection, and cryogenic cold box valves (PHPK valves).

The compressor/cold box room cooling water piping design continues.

Substantial progress was made on the preliminary design of the LN2 transfer lines and associated P&ID drawing.

**QUALITY**

* After the 2K Cold Compressor PRR, Barry Miller had some follow on QAQC questions about product delivery and acceptance between the Cold Compressor vendor and the Cold Box vendor. There were also questions regarding vendor presence at SLAC during Commissioning. Johnny will address these questions with Mike Skonicki who would then relay the information back to Barry.
* Bruce Lenzer (JLab QA) has joined the team to help coordinate specification requirements with the various cryoplant vendors. A meeting was held between Dana, Bruce and Johnny to discuss cryo QAQC support for vendor visits.

**Upcoming Activities:**

* 4.5K Cold Box Vendor Visit, 13 April 2016
* Warm Helium Compressor CDR, 25 April 2016

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of April 1-7, 2016

**Issues: None**

**Accomplishments this week:**

**JLAB**

* LLRF Coordination/Documentation:
  + BMB7 FPGA board arrived at JLAB.
* Resonance/Stepper Motor Board:
  + Stepper board mods will go out 4/7.
  + Chassis distribution power board on hold (CAD bottle neck).
  + FMC breakout will go out for manufacture next week.
  + Resonance chassis front and rear panels are being reviewed.
* Interlock Board/Chassis:
  + FEM: Board is out for manufacture should be back late next week.
  + Temp boards will go out 4/7.
* Common Power Supply/Chassis:
  + Sending PS connector boards to LBNL for RF station and PRC.
  + PS Chassis front and back panels are done.
* CMTF
  + VVU installation will need to be coordinated with Test Lab (power outage needed).
  + Documentation: System block diagram is being updated weekly.

**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 early May.
  + June 6-8 Rack assembly, test and shake down (JLAB)