Weekly Reporting

WBS 1.01.07 JLAB Management

Week of Oct 21-27, 2016

**Issues:**

**Accomplishments this week:**

Submitted accruals.

Preparing for a cryoplant schedule review.

Working 3 BCRs, cryoplant installation scope transfer, CMTF heat exchanger, bellows plating.

**Upcoming Activities:**

Director’s Review 4.5 K Cold Box Schedule 16 November

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of Oct 21-27, 2016

**Issues:** Efficient transfer of lessons learned from FNAL pCM assembly in order to reduce JLab pCM assembly duration. Cost and schedule impacts due to cavity recipe development effort at vendor.

**Accomplishments this week:**

BCR is under development for beamline bellows plating schedule adjustment. Plan to have SLAC plate two more sets of components as schedule mitigation. Currently developing what-if schedule in P6.

Ready to discuss BCR for addition of caps to cavities during processing at next facilitation meeting. No discussion at facilitation meeting.

Ready to discuss BCR for RF processing of 4 sets of FPCs for SLAC at JLab.

Developing cost and schedule input for BCR for another shipping frame for on-site transport at FNAL and two sets of caps for leak-checking and on-site storage at SLAC.

Developed modified procurement strategy for BLA to support installation schedule – plan to procure long lead items (ceramics, stainless steel) and supply to vendor. Discussed plan with SM.

Cavity Procurement

Memo regarding production cavity contract supporting responsibilities was re-sent. JLab received feedback from FNAL on their supporting team members. The intent is to clarify the roles at each lab involved with executing the work related to the production cavities.

RI – Held focused meeting to discuss topics including installation of washers, flange staining due to EP acid, review of packaging for shipment, bellows brace arms. Awaiting design solution for potential modification of splits rings. Next four cavities will ship 4-NOV to JLab.

Zanon – Split Rings – Zanon has received a list from RI identify the components that require rework. Also, Zanon is 70% complete with in-house split rings; need to weld small upper blocks; Machining is complete for 266 units. Welding remains. Zanon will give repair priority to rework & return of units to RI. Hold Point Updates: HP1 – 233 has been welded; HP data coming soon 234 & 235; HP2 – Data submitted for up to 0223, 224 & 225 in progress of tuning; HP3 – Ready for shipment of eight cavities – 208 thru 215. HP data submitted for first four. Awaiting HP data for next four from vendor.

FNAL shipment of 0204 to 0207 – arrived in Chicago 10/25, awaiting delivery to FNAL. Next four to JLab – 0208 to 0211 – to ship on 3-Nov. Next four to FNAL – 0212 to 0215 – to ship on 3-Nov.

CM assembly activities at Work Station 5:

Radiographic testing of the JT piping weld joints was successfully completed. Five out of eight warm couplers have been installed. Leak checking of the warm parts is in progress. Cavities 5-8 have CPI warm parts, and cavities 1-4 have RI warm parts. Additional tooling is being fabricated for coupler-to-VV flange closure. Instrumentation flanges have been assembled and leak checked. Vacuum vessel and shipping caps were test fit into the shipping frame. FNAL Shipping SME visited Jlab to witness the test and discuss minor modifications to shipping caps.

Gary Cheng along with Saravan Chandrasekaran (FNAL Magnetic Hygiene & Magnetic Shield SOTR) visited the magnetic shield vendor.

Current CM completion date is 22-NOV in P6.

Production CM Activities

Continuing to inspect bellows and spools and production tuner frames. Continued to receive FPCs from CPI and RI.

The CM02 string assembly was delayed and will restart on 3-Nov and expect to pump on string by 7-Nov. The delay was related to selection of blank-offs and seals installed during HPR. Blank-offs and seals suitable for C100 cavities were installed on the LCLS cavity. These seals are not suitable for LCLS cavities – therefore cavities are being re-rinsed.

Vertical Testing – Cavity 0202 (NX/800/140) was tested twice. First test had Qo @13 MV/m of 2.6e10 and was limited by power emitted from the HOM-B port. Quench limit was 14.5 MV/m. After re-tuning HOM-B, the second test had Qo @13 MV/m of 2.8e10 and was quench limited at 14.5 MV/m. Cavity 0200 (NX/800/140) had Qo @16 MV/m of ~ 2.5e10 and was quench limited at 20.3 MV/m. Power emitted from HOM-B port limited the test. The HOM will be re-tuned and re-tested on 27-Nov.

Cryomodule Test Facility

Heat exchanger piping leak check was completed. Preparing for pressure test. Bayonet box guard vacuum circuit being completed. Lead shielding was fully installed and inspected.

**QUALITY**

* Mike Skonicki will visit JLab on Nov 2nd to conduct an assessment on welding of the LCLSII CMs. An agenda has been distributed to JLab staff.
* On-going activities with Significant NCR development and reporting.
* Provided support to Ken Premo’s (FNAL SOTR) inspection of cu-plated beamline bellows & spools.
* Reviewed QC documents for production vacuum vessel and cold-mass upper assemblies from WXCX.

**Upcoming Travel:**

* Vacuum Vessel Visit (Gary Cheng, Kurt Macha) to China 7-11 Nov 2016
* Ed Daly, Ari Palczewski to visit Cornell 10 Nov 2016 to discuss possible cavity testing
* Visit Zanon to provide feedback on first articles, 14-15 Dec 2016

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of Oct 21-27, 2016

**Issues:**

The 4.5K Cold Box vendor reported a 12-week delay in the delivery during the FDR. JLab has requested the vendor to recover the delay time in accordance with the contract. JLab met with vendor management in Houston, 10 Oct but no plan was presented. A meeting is scheduled with the vendor on Nov 3 to develop a plan of schedule recovery.

A 2K cold compressor review is scheduled for Nov 8th at JLab. JLab has received all pre-review documentation from the vendor (Air Liquide) in advance of the review.

Members of the JLab/SLAC cryosystems design team attended the Cryogenic Operations workshop at Fermilab from Oct 24-27. Presentations of the overall SLAC cryogenic system were presented.

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 remains set for January 2017.

Recommendations resulting from the Cryoplant Installation Design review were addressed throughout the week.

Technical bid evaluations began for the oil removal vessels and helium storage vessels.

A BIO visit to JLab to discuss the cryoplant documentation, standards, ES&H coupled with a tour of the CHL is planned for November 15th.

**QUALITY**

* No updates.

**Upcoming Activities:**

2K Cold Compressor Design Review Part 1, Nov 8, 2016

BIO Visit to JLab, November 15th

4.5K Cold Box Schedule Presentation to Directors @JLab, Nov 16

2K Cold Compressor Design Review Part 2, Jan 11, 2017

Interface Box/Transfer Line PDR January 2017

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of Oct 21-27, 2016

**Issues:** None

**Accomplishments this week at JLAB:**

LLRF Coordination/Documentation:

* + Heater: Layout is in review. This has been slow due to higher priorities.
  + Dave, Rama and I are assembling a bottoms up production cost estimate for the resonance, interlock and power supply chassis.

Resonance/Stepper Motor Board/Chassis:

* + Chassis waiting for installation into CMTF.
  + Garth/Josh/Rama working on the firmware and developing the EPICS interface.

Interlock Board/Chassis:

* + Interlock Chassis: Testing progress.
  + FEP Board: Rest of the boards are in assembly.
  + ARC/IR boards: Two boards are assembled.
  + Temp Boards: Two boards ready for testing.
  + Interlock FMC connector board (interlocks): In test with chassis.
  + Power supply board: Two more are in assembly.
  + Four Chassis are partially assembled. Assembled as boards are made.

Common Power Supply/Chassis:

* + Testing power supply chassis with electronic load.
  + Developing test procedure.
  + 5 more ps boards and interconnects boards are being assembled and sent to SLAC.

CMTF

* + LCLS2 Server: On order. It will be installed when it arrives.
  + RF Cables and instrumentation cables will be done in the next Month.
  + Dave is working Larry to get the chassis into the racks.
  + Clyde and George are working on EPICS screens and data bases.

**Upcoming Activities:**

* + Continue prototype tests and assembly (resonance, interlocks, power supply)
  + Garth to travel to JLAB next week.