Weekly Reporting

WBS 1.01.07 JLAB Management

Week of Oct 14-20, 2016

**Issues:**

**Accomplishments this week:**

Several staff went to FNAL for the DoE OPA Review.

Cryoplant Installation Design Review was held at Jefferson Lab.

Received EV and VAR reports. Analyzed data and developed VARs.

**Upcoming Activities:**

Director’s Review 4.5 K Cold Box Schedule 16 November

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of Oct 14-20, 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. Need license agreement from DESY for Beamline Absorbers to progress with the procurement.

**Accomplishments this week:**

Participated in OPA review at FNAL.

BCR is under development for beamline bellows plating schedule adjustment. Plan to have SLAC plate two more sets of components as schedule mitigation. Ready for discussion at BCR facilitation meeting.

Ready to discuss BCR for addition of caps to cavities during processing at next facilitation meeting.

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

Received direction to order another shipping frame for on-site transport at FNAL and several sets (qty TBC) of caps for leak-checking and on-site storage at SLAC.

JLab received the beamline absorber licensing agreement from DESY. The agreement is currently being reviewed by JLab legal counsel. Developed modified procurement strategy to support installation schedule – plan to procure long lead items (ceramics, stainless steel) and supply to vendor.

Cavity Procurement

Memo regarding production cavity contract supporting responsibilities was re-sent. JLab received feedback from SLAC but has not received input or confirmation from FNAL on their supporting team members.

Provided info to DESY as part of discussion regarding possibility of production cavity testing support.

Vendor meeting agenda revised to cover info that will be provided to Production Cavity Coordination Meeting on a weekly basis. Reflected in reports for each vendor below.

RI - Hold Point Updates: HP1 – completed up to 0038; five cavities soon; five more shortly thereafter; HP2 – completed up to 0030; next four cavities next week; HP3 - completed to 0020; RI just sent data for 0021,0023,0024,0028; should send 0025, 0030 within several working days. Recent/Upcoming Deliveries - 0019 & 0020 were released from US customs today and destined for FNAL; 0021,0023,0024,0028 – plan to ship to JLab; Next batch of four to FNAL. Dates TBD.

Zanon – A batch of 40 split rings were shipped from RI but not received at Zanon. These will be repaired when received. Hold Point Updates: HP1 – Four new cavities (TD) welded; HP2 – Data uploaded up to 0219; 0220 to 0223 in tuning; HP3 – JLab requested data for 0204 to 0211; 0212 and 0213 completed. Cavity shipments - JLab received 0200 to 0203 (four cavities). FNAL shipment of 0204 to 0207 – preparing for shipment by Friday of this week. Next four to JLab – 0208 to 0211 – plan to ship the last week of October. Next four to FNAL – 0212 to 0215 – plan for mid-November. Plan to visit vendor to discuss first articles in early December.

CM assembly activities at Work Station 5:

Welding completed on cooldown and JT valve piping. Radiography is scheduled for Friday 21-OCT. The ion pump support bracket and 2-phase pipe caps were installed. The vacuum vessel relief and support post top hats have been installed. Warm coupler installation has started – four warm couplers are installed. The tuner port was opened to demonstrate accessibility in advance of beamline flange survey. Regarding magnetic hygiene, the fluxgates inside the helium vessels were monitored during welding of JT & cool down valves, ion pump support bracket and 2-phase pipe end caps. Three out of eight fluxgates experienced noticeable changes (~ 24 mG compared to > 40 mG for FNAL pCM). Note that the welder did attach ground connection near the welds.

Saravan Chandrasekaran (FNAL Magnetic Hygiene & Magnetic Shield SOTR) visited JLab on 13-14 Oct 2016 to provide guidance and witness cooldown and JT valve welding activities, and to make plans for visit to magnetic shielding vendor.

Ken Premo (FNAL FPC SOTR) is visiting JLab on 19-20 Oct 2016 to provide guidance and witness warm coupler installation activities on the pCM. He is also discussing copper plating of beamline components with JLab experts.

Current CM completion date is 22-NOV in P6.

Production CM Activities

Continuing to inspect bellows and spools. Minor NCRs regarding flaking and staining have been initiated and are being addressed.

Continuing to inspect production tuner frames.

Continued to receive FPCs from CPI and RI.

The 1st production upper cold mass assembly from WXCX has been received (Monday, 10/17) and installed on the four-poster.

The CM02 vacuum vessel with shipping caps installed was inserted into the shipping frame. An interference between cross members and VV ribs was identified. The shipping frame requires a modification. Shipping cap GHRP plugs that provide axial restraint during shipping will require design modification to clear heavy interior weld inside 300mm pipe.

The CM02 string has been disassembled after discovering polishing compound residue and acid stains on NbTi flanges left by vendor. Flanges have been inspected. Polishing compound is being removed.

The second set of CM assembly tooling (four-poster, cavity string supports) has been aligned, and are ready for production.

Cryomodule Test Facility

Cable pulling work recommenced now that the injector quarter CM was removed from the cave. The heat exchanger piping modification has been completed. Leak checking is complete. Lead shielding (required for testing eight cavities simultaneously) has been received and is being installed.

**QUALITY**

* Mike Skonicki will visit JLab in November to conduct an assessment on welding of the LCLSII CMs. Date and agenda are forth coming.
* On-going activities with Significant NCR development and reporting.

**Upcoming Travel:**

* Ken Premo (FNAL FPC SOTR) visiting JLab on 19-20 Oct 2016
* Jeff Tice (SLAC FPC SME) visiting JLab on 27-28 Oct 2016
* Mike McGee (FNAL Shipping SME) visiting JLab on 25-26 Oct 2016
* Gary Cheng visit to Advance Magnetics (magnetic shielding vendor) in Illinois – week of 24-Oct 2016
* Vacuum Vessel Visit 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 Dec 2016

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of Oct 14-19, 2016

**Issues:**

JLab engineering attended the weekly ATALUS/PHPK/Hopper 4.5K Cold Box integration meeting. The meeting centered around the 4.5K vendor action items and meeting milestones.

ATALUS/PHPK/Hopper presented the latest status of the 4.5K cold box vacuum shell design calculations. The analysis completion date was expressed as by November 28, 2016. ATALUS expressed a desire to order the vacuum vessel material sheets in advance of the completion of the analysis. The technical risk of an early order date could not be determined by the JLab/SLAC engineering due to the lack of data coupled to possible issues which may arise between now and the issuing of the full analysis.

The 60% cryoplant installation design review was held on Tuesday, Oct 18. There were 10 shared recommendations between SLAC and JLab from the review. Each of the recommendations coupled to action plans/responsibility.

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.

**QUALITY**

* Participated in the LCLS-II Cryoplant Installation 60% Preliminary Design Review held at JLab on Oct 18, 2016.
* Reviewed various vendor proposals for the fabrication of the Oil Removal Vessels.

**Upcoming Activities:**

Cryogenics Operations Workshop, FNAL, Oct 25-27, 2016

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

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

Interface Box/Transfer Line PDR January 2017