Weekly Reporting

WBS 1.01.07 JLAB Management

Week of May 13-19, 2016

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

**Accomplishments this week:**

Split activities for the re-plan. Responding to post integration items.

Completed April VARs forms and performing analysis.

Working several BCRs that need to be completed in June.

**Upcoming Activities:**

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of May 13-19, 2016

**Issues:** Project schedule currently contains best production cavity delivery from vendors. Niobium tubes are on the critical path for RI cavity production. Other areas in the project need to investigate other ways to recover float beyond CM production. Lack of resources (subject matter experts) for CTM refurbishment activities may delay cavity production. Efficient transfer of lessons learned from FNAL pCM assembly in order to reduce JLab pCM assembly duration.

**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), Reduction of Number of Shipping Frames (in preparation), and Fundamental Power Couplers Storage including circulated parts (in preparation). The following items require updates at award and should be viewed as cost only - Cavity Incentives, Cu-Plated Bellows/Spools, End Lever Tuners Frames and Beamline Absorbers (BLA).

Continued with significant effort on p6 schedule as part of re-baselining efforts.

Cavity Procurement

SOTR and procurement lead participated in vendor visits to Zanon and RI. Close-out meeting with RI indicated excellent progress. Reports from Zanon are similar showing good progress.

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 the beginning of cavity fabrication.

See FNAL weekly report for status of material shipments. Currently connection tube materials are critical path for cavity vendors.

RI and ZANON are making good progress on single parts fabrications. Lack of connection tube material may cause a schedule delay.

Zanon has provided response for accelerated cavity deliveries of first articles. May status update of P6 will reflect this improvement - a reduction in supply chain schedule risk.

RI has completed mechanical fabrication of first eight cavities.

Planning for meeting to discuss Production Cavity Support Team roles and responsibilities.

Flux expulsion tests are in progress. Discussed plans for update of status at upcoming SRF weekly meeting.

Detailed list of all dressed cavity PICs is complete. Collecting parts and preparing to ship first sets of PICs to RI for first article cavities. First shipment planned to leave JLab 23-May – sufficient for 16 cavities.

Presented summary of lessons learned from pCM string assembly activities for presentation at SRF weekly meeting.

JLab staff (Daly, Cheng, Fischer) planning to travel to FNAL to witness CM assembly steps, participate in Cancellation Coil and 3.9 CM status review meetings.

SO and SOTR attended a kick off meeting with the bellows and spools vendor (SS components, CU plating contract is separate).

Tuner frame vendor kick off meeting 19 May, 2016.

CM assembly activities: UCM disassembled to ship center support post to Meyer for testing. Pull test of post was completed successfully. Modified support post pins (vented). Mounted Split Quad Magnet onto beam pipe – currently resolving magnet to BPM interface alignment issue. Two-phase piping orbital welding completed on sub-assemblies; all segments are tacked in place on string. Helium vessel instrumentation has been extended. Cavity passbands and HOM notches completed. Magnetic shielding modifications started.

Prepared Bill of Materials in order to highlight missing items. Working with FNAL staff to identify and procure missing items.

Repair weldment of vacuum vessel end caps – first one completed, second in progress.

Completed on-site tests of SSAs by R&K technical staff and D. Yremian. Five new amplifiers were successfully tested. New firmware including update from manufacturer based on FNAL experience was loaded.

Continuing with coax installation in test cave. A new network switch has been installed to manage SSA connections.

SOTR and Procurement staff traveled to Shipping Fixture vendor for kick-off meeting.

Conducted production cavity string bellows kick-off meeting on Thursday 12-May. Plan to follow up with vendor visit to Pittsburgh PA in June.

**QUALITY** –

1. The draft ACS forms for the HOMFT, HOM Absorber, and the tuner piezo actuator are being revised to include the “Magnetic Hygiene” checks. Also the TeamCenter drawing numbers have been added to the ACS forms at the request by Fermilab.
2. Two significant NCRs were created for the leaky cavity string. NCR 253 was created for the initial leak failure in which the string ended up being dis-assembled. NCR 253 was closed on 5/13/2016. NCR 284 was created for the leakage found after re-assembly. The string became leak tight following the additional re-torqueing. NCR 284 is pending closure awaiting completion of the final report.
3. Participated in the production bellows/spools vendor kickoff meeting with the JLab SOTRs and SO. This is the production fabrication of the base bellows/spools only without any copper plating.

**Upcoming Activities:**

* SSA Vendor visit to JLab for Acceptance Testing May 16-19, 2016
* Coupler Vendor Visit to France & Germany May 19-26, 2016
* Visit FNAL to witness CM Assembly & Participate in Reviews May 25-27, 2016
* Cavity string bellows and spools Vendor Visit June 2016, dates TBD

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of May 13-19, 2016

**Issues:** Warm Helium Compressor CDR Readiness

**Accomplishments this week:**

The vendor proposals for the procurement of 2K cold compressors for both CP1 and CP2 cryogenic plants, are expected to be received on May 31, 2016.

JLab received 4.5K cold box vendor PDR action item documentation as planned on May 4th. These documents include valve sizing, absorber vessel design details, equipment weights/size, mounting details, MTTR, MTBF, and QC/QA plan. The PDR reviewers provided comments on the documentation and these were transmitted to the vendor for Monday, May 16.

Warm helium compressor skid frame weldments continue to be fabricated at the vendor shop for 4 of the 12 compressor skids. This includes both HP and LP compressor skids. Minor design items based on the completed seismic analysis are being incorporated into the skids. The CDR review of the compressors (inclusive of seismic design) is scheduled for next week, 25th of May. The review is video conference based with a web address to be issued by COB Thursday. An agenda for the review has been distributed and advance supporting documentation has been received.

Procurement specifications for the MCCs, oil removal vessels, and gas storage vessels are being released to procurement during the month of May.

P&IDs have been updated for CP2 and are under final review for release. The vendor P&ID for the 4.5K cold box was received on May 19 for review.

**QUALITY**

Completed the review of the Project QA Plan as part of the 4.5K Cold Box post-PDR submittals from Air Liquide. QA/QC and welding related comments were provided.

**Upcoming Activities:**

* Warm Helium Compressor CDR, 25 May 2016
* AL/JLab HazOp Meeting June 1-2
* Cryoplant BIO Review 9 Aug 2016

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of May 13-19, 2016

**Issues:** None

**Accomplishments this week:**

JLAB

* LLRF Coordination/Documentation:
  + Had a teleconference with SLAC personnel concerning cryomodule heater operation. JLAB engineers (Cryo/EE/Controls) discussed the operation of the CEBAF heaters both locally and at the high level app level.
  + JLAB network engineers emailed their SLAC counterparts. A teleconference is the next step.
  + New SSA network switch is working fine in support of the recent SSA tests.
* Resonance/Stepper Motor Board:
  + Stepper board is will be tested at the end of the week.
  + Chassis power distribution power board has been tested. An issue with the 48 volt supply (only effects interlock chassis) is being remedied.
  + FMC breakout board: It is out for manufacture. We have asked for fast turnaround.
  + Resonance chassis: Front and rear panels will be in tomorrow. We hope to have chassis together by the end of next week.
  + BMB7: Waiting on Rama to test. He plans to start it on Friday.
* Interlock Board/Chassis:
  + FEM: The issue with the current draw has been resolved. Spice model and board now are in agreement. We plan to add extra heat sink on the pcb.
  + Temp board is ready to test.
  + ARC/IR boards: Designer (small change to connector) will get it Friday.
  + Interlock chassis front panels are out for review. Some changes to connectors are being made.
* Common Power Supply/Chassis:
  + Dave has ordered the long lead items (front and rear panels).

**Upcoming Activities:**

* JLAB:
  + Continue prototype tests and assembly (resonance, interlocks, power supply)
  + CMTF: Continue working on documentation, installation and instrumentation.
  + June 20 Rack assembly, test and shake down (JLAB).