Weekly Reporting

WBS 1.01.07 JLAB Management

Week of June 22-28, 2017

**Issues:**

**Accomplishments this week:**

STL conducted two trips to the 4.5K CB vendor to discuss schedule

Participated in the Monthly Project EV Status Review

Conducted Progress Meetings for Cryomodule WBS and Cryoplant WBS

Continued testing pCM in the CMTF

4.5K lower, horizontal, cold box structure received BIO approval

**Upcoming Activities:**

CP Installation Final Design Review July 13-14, 2017

SRF 2017 in China July 17-21, 2017

FAC at SLAC July 25-27, 2017 (Tentative)

CP Controls Review August 2017

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of June 22-28, 2017

**Issues:**

**Accomplishments this week:**

Prepared EAC for close-out of 1.4.06.05 Engineering and Design control account. Plan to close control account at the end of July.

BCR for additional PICs to support cavity deliveries was approved.

Developing schedule and cost for four additional cryomodules.

Working with FNAL to implement microphonics mitigations including procurements to support production lines at both labs for tuners.

LERF CM testing proposal – received input from Lab management and revising estimate to address their concerns.

Cavity Status

Zanon – The first two rework cavities (234 (NX-B), 238 (NX-C) and did not show signs of Q roll-off implying that the recovery method is successful. Two more cavities (229, 244) will be tested as well. Zanon shipped four cavities to JLab.

RI is making good progress and is continuing to ship cavities. RI shipped four cavities (all NX, three with 950 deg C heat treat) to JLab.

pCM Status

pCM testing focused on repeating Qo measurements with some procedural improvements to pressure-rise method. Warmed up pCM, degaussed the entire CM in situ in the test cave, then re-cooled. Remeasured Qo’s on all cavities. Average Qo ~ 1.7 x 10E10 using improved method with max of 2.1 x 10E10 and min of 1.4 x 10E10. Continuing measurements with LL-change method. Warm up planned for Thursday evening.

CTF new cold box (#3) experienced a pressure relief valve failure that has brought it off-line. pCM testing lost two shifts. Operation continues with old cold box (2) until replacement relief valves arrive.

Production Status

CM-02 (currently at WS5):

Confirming insulating vacuum integrity. Complete and ready for installation into CMTF.

CM-03 (currently at WS5):

Support post covers in place.

CM-04 (currently at WS3):

Cavities degaussed. Leak check of He pipes complete. Tuner split ring installation in progress. Magnet lead soldering in progress.

CM-05 (currently at WS2)

Two-phase welding complete; leak check in progress. Berry bolts installation complete. Instrumentation installation in progress. UCM survey complete.

CM-06

String assembly started on 26-June. Six cavities are on the rail. Roll-out scheduled for 7-July.

CM-07

Cavity qualification testing in progress.

It was another notable week as a total of six cavity tests were conducted including three in dewar 5.

Cavity 109 (NX) failed to qualify due to low Q(16)= 2.4 e10. Admin limited at 24 MV/m. Cavity will be set aside.

Cavity 265 (TD) failed to qualify due to quench at 15 MV/m. Q(15)= 4.0 e10. Path forward - internal optical inspection.

Three cavities were cooled down in dewar 5 but test was aborted due to high magnetic field setting on dewar compensation coils that caused low Qo values. Some indication of FE on two cavities (209, 211). Magnetic fields will be re-set and dewar re-cooled.

**QUALITY**

On-site at cavity vendors conducting QA audit (RI June 29 & 30 and Zanon July 3 & 4).

**Upcoming Travel:**

QA audit of cavity vendor RI June 29 – June 30 (J. Leung)

QA audit of cavity vendor Zanon July 3 – July 4 (J. Leung)

E. Zanon Vendor Oversight July 17-21 (K. Wilson)

SRF 2017 Lanzhou, China July 17-22 (A. Palczewski, C. Reece, N. Huque, L. Zhao, V. Bookwalter, G. Cheng)

WXCX Vendor Visit July 24-28 (Cheng, Fischer)

E. Zanon Vendor Oversight August 2017 (H. Park)

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of June 22-28, 2017

**Issues:**

**Accomplishments this week:**

4.5K lower, horizontal, cold box structure received BIO approval.

Work continued to complete the drawings to be delivered to Smith Group for completion of the cryoplant mechanical piping installation.

Received updated calculations for the oil removal vessels.

**QUALITY**

Conducting progress checks on QA/QC documentation & Inspection Test Plans for 4.5K Cold Box subcontract.

**Upcoming Travel/Reviews:**

PHPK and SLAC June 27-30

CP Installation Package FDR July 13-14

Vendor Visit to Air Liquide Sassenage, France July 17-21 (D. Arenius & T. Peshehonoff) to witness cold compressor housing pressure testing and 4.5K cold box turbine run tests.

CP Controls Specification Review August 30 2017

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of June 22-28, 2017

**Issues:** None

**Accomplishments this week at JLab:**

* LLRF Coordination/Documentation:
  + Heater: Matting connectors are on order. Components on heater board are being tested with new firmware.
  + LLRF Production Estimate: Reviewing RF Station and PRC production costs with SLAC. Dave sent Andre/Matt a list of material purchases and activities so that we can compare costs (our estimates are over 3 months old).
  + BCS: No report Trent has been the CEBAF program deputy for the last two weeks.
* Resonance/Stepper Motor Board/Chassis:
  + CMTF Resonance Tests: Tested EPICS piezo interface using cavity four of the pCM. Cavity reached 11 MV/m.
  + Install the remaining piezo cables Wednesday for eight cavity GDR run.
  + Limit switch to limit switch test is planned for the stepper motor to measure energy needed for the UPS.
  + Working on chassis test procedure and test bench with RF technician.
* Interlock Board/Chassis:
  + No activity.
* Common Power Supply/Chassis/Boards:
  + Putting together the documents for the Power Supply Freeze meeting scheduled for 6/28.
  + Building a 2nd new Power Supply Chassis. Both units will be sent out later this week depending on the outcome of the freeze meeting.
  + Gun/Buncher PS Chassis: This chassis is on hold until the design freeze meeting is completed.
* CMTF
  + PRC/RFS: The two computers and monitors for LLRF tests in the CMTF have arrived. Plan is to install between the CM tests in the next two weeks. Rack has been ordered but no word on delivery date.
  + Coupler plan for integrating the power meters (8-way switch), JLAB LLRF and LCLSII LLRF so that they can share the same RF signals (Cavity, Forward and Reflected) has been finalized. Couplers are on order.

Upcoming Travel/Reviews:

* LLRF FDR July 27
* LLRF Production Costs: Draft due to JLA leadership by the end of July.