Weekly Reporting

WBS 1.01.07 JLAB Management

Week of February 22-28, 2018

**Issues:**

**Accomplishments this week:**

Managing impacts from the late closing of the January period.

Preparing a bundled BCR for the CP that includes MCC mods, Oil Processing mod and the Cryogenic valve award.

Preparing for FAC review.

Received bids for Interface Box.

Delivered last 2 CP1 oil removal vessels to SLAC.

Held the FDR for the He Purifier.

Managing the implementation of CM rework action plan and developing a recovery schedule.

Held pre-warm up review with SLAC for CM07.

Successfully conducted GDR runs on 8 cavities at 10 MV/m and on 4 cavities at 16 MV/m runs

**Upcoming Activities:**

6-7 March – FAC Review

20-22 March – Director’s Review @ SLAC

1-3 May – LCLS-II HE ICR

7 May – Collaboration Meeting @ SLAC

8-10 May – OPA Review @ SLAC

15-17 May – LCLS-II HE Director’s CD-1 Review

19-21 June – LCLS-HE CD-1 Review

Weekly Reporting

WBS 1.04.06 JLAB Cryomodules

Week of February 22-28, 2018

**Issues**:

**Accomplishments this week:**

Awaiting submission of CM management LOE BCR.

Finalized FAC presentations.

LERF transfer line awarded on 2/27. LERF cryo can bids are expected back on 3/9.

Cavity award package is in procurement and is expected to go to DOE next week. Award will follow shortly thereafter.

Continuing evaluation of BPM assemblies on first five CMs to verify hermeticity and developing plans for bolting hardware change-out on other BPM assemblies as part of BPM working group. Results from torque testing on grade 2 bolts is consistent with our expectations. Conducting thermal cycling test and hardware replacement procedures.

J1.3-01 - Moved to WS5. In rework, removing warm couplers, main coupler line and instrumentation flanges.

J1.3-02, J1.3-03, J1.3-04, J1.3-05 – Idle.

J1.3-07 – Currently in CMTF. Held pre-warm up review with SLAC. Successfully conducted 8 cavity 10 MV/ and 4 cavity GDR 16 MV/m runs. PSS group repaired fault in logic chain that interrupted testing for one day. Tested SC magnet.

J1.3-08 – Currently at WS4. On hold pending resolution of BPM issue.

J1.3-09 – Currently at WS3. Instrumentation, RF cables, HOM tuning, 50K shields

J1.3-10 – Currently at WS3. Magnet leads, Alignment, Tuner installation on-going.

J1.3-11 – Leak-tight. On hold pending resolution of BPM issue.

J1.3-12 – Seven cavities have been qualified for the string.

Cavity Testing Results

252 (TD) first test, D7, 26 Feb, 2018, Q0(16) = 2.6e10, Quench 19.5 MV/m, FE free, QextFP= 5.4e10, Replace FP then retest.

CMTF warm-up later this week

L2-254 (TD) first test in D8 on Tuesday, 27 Feb.

L2-304 (NX-A, re-rinse) test in D7 Thu, 1 Mar.

L2-253 (TD, re-rinse), L2-319 (TD,1st test), L2-305 (NX-A re-rinse) test in D5 on Friday, 2 Mar.

**QUALITY**:

Developed and submitted for review a scope for a possible QA process audit of Cryomodules. This is driven by SLAC's receipt of a venting Cryomodule.

Working with SLAC and JLab subject matter experts on removal of SSA Suspect eye-hooks. As received from SLAC, the equipment had suspect lifting eyes.   Lab placed non-conformance tags on all of the equipment in the Test Lab and LERF, including a unit awaiting return to SLAC. JLab will replace the lifting eyes if a unit requires their use.

**Upcoming Travel/Meetings:**

FAC Mar 6-7 (K. Jordan, K. Wilson)

EZ Vendor Visit Mar TBD (K. Macha)

EZ Vendor Visit Apr TBD (Gonella)

Weekly Reporting

WBS 1.04.06 Cryomodules - LERF Conversion

Week of February 22-28, 2018

**Issues:**  None

**LERF accomplishments this week:**

IP address listing for all devices can be found at; <https://wiki.jlab.org/lerf/index.php/Network>

Ready to put control power on CM # 1 SSAs & load in IP addresses.

ALL waveguide pieces have been delivered; we are ~ 50% done in the tunnel.

Field wiring terminal blocks finished for Cryo-Cons, "fake" RTDs have been installed in the blocks and controllers have been setup for 100 ohm RTDs. These are connected to the network, and are ready to be implemented into EPICS. These will monitor temperatures in the cryo-can & transfer line.

Coriolis flow meters have arrived for measuring mass flow on the return side of the cryo can.

The order is placed for the transfer line it is due late May – this and cryo-can are on my critical path.

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of February 22-28, 2018

**Issues:**

**Accomplishments this week:**

**2K Cold Box**

1. Implementation of engineering change request (ECR) from SLAC complete.
   * Bypass flow performance requirement changed from 36 g/s to 80g/s.
   * Cold valve subcontract modified to accommodate this change.
2. Top plate awarded – Vendor approved for fabrication.
3. Engineering analysis of vacuum vessel & piping complete.
   * Reports will be distributed this week.
4. Holding FDR date of 28-March despite change in performance requirements.
   * Charge for FDR in finalized.
5. PRR scheduled for this Friday 02-Mar-2018.

**4.5K Cold Box Status**

1. PHPK is continuing to work to reduce the helium background.
   1. JLab vacuum SME is onsite at PHPK for consult.
   2. Shell opened to access internal structure; vent holes added into trapped volumes within structural supports.
   3. O-rings replaced and vessel pumped back down quickly.
   4. No signs of internal piping leak.
2. final leak check of internal piping for lower cold box for CP1 is in progress.
3. Shipment for delivery schedule moved out to 12-April-2018.
4. Cryo-duct for CP1 complete.

**Interface Boxes**

1. Request for proposals received 23-Feb-2018.
2. Vendor proposals are competitive and under evaluation.

**Oil Removal Vessels**

1. Last two vessels (coalescers) for CP1 delivered to SLAC this week.
2. First three vessels (coalescers) for CP2 delivery to SLAC this week.

**Cryoplant Engineering Status**



Engineering continued to focus on completion of the 2K cold box & Interface box assembly design.

**QUALITY**:

Planning to attend final leak test of CP#1 Upper Cold Box late February.

**Upcoming Travel/Reviews:**

* 4.5K cold box final leak check ~Week of Mar 5th
* 4.5K cold box re-assembly meeting @SLAC March 8th
* MCC Vendor Site visit (acceptance testing) 8-9-March-2018
* FAC Review Mar 6-7th
* Director Review Mar 20-22nd
* 2K Cold box FDR 28-Mar-2018
* DOE OPA Review May 8-10th

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of February 22-28, 2018

**Issues:** None

**Accomplishments this week at JLab:**

* Resonance/Interlock Chassis:
  + Ongoing: Dave is coordinating the purchasing of parts and boards for the LERF. The FMC boards are complete and tested. The Stepper, Temperature, and Digital VAC/IO boards are assembled and in house. The PS distribution board should be completed and shipped back at the end of this week. That will be the last board needed to start assembly of the 5 chassis. The chassis are drilled and ready to be loaded with boards. The cabling will start next week.
  + Andre said the Piezo boards are completed and will ship later this week. We still need 5 BMB-7 boards.
  + Test board for stepper is ready and reviewed. Will get back to it once we finalize the production files for all the other boards. (Early next week).
* Interlock Board/Chassis:
  + Work at this time is on hold until needed for 3.9 GHz.
  + Contacted Andrew Burrill to set up a discussion for 3.9 GHz interlock needs.
* Common Power Supply/Chassis/Boards:
  + Switching out 7 A fuses for 10 A fuses on the 6-volt supply. Dave has obtaining stickers so the boards will say 10 A fuses instead of 7 A.
* LERF
  + LERF LLRF instrumentation cables: Kevin has ordered new cables.
  + LLRF Front end requirements: Received comments back from Brian, Matt and Sonya. Editing the document now.
* CMTF
  + Rama is adding features to the LLRF system to make the steppers and piezo tuners easier to operate.
    - Adding the second DAC for increased tuning range.
    - Automate the tuner switching, stepper to piezo and re-center of piezo with stepper.

**Upcoming Activities:**

* LERF RF cable installation ~ April when the LLRF Racks arrive.