Weekly Reporting

WBS 1.01.07 JLAB Management

Week of June 21-27, 2018

**Issues:**

Need to finalize shipping plans and hardware so we can ship CMs.

**Accomplishments this week:**

Preparing June CM BCR for several May awards and other actions. This will require an EAC for the CM procurement WBS.

Evaluating potential scope reductions and cost-cutting measures.

First use of the new heat exchanger in the CMTF went well. Fast cooldown rate and improvement of Q0 achieved, details in CM report.

**Upcoming Activities:**

July – LCLS-II HE ICR Review

Weekly Reporting

WBS 1.04.06 JLAB Cryomodules

Week of June 21-27, 2018

**Issues**:

Risk of lack of high-performing cavities to finish CM assembly. Possible delay of first shipment from JLab due to availability of modified shipping caps.

**Accomplishments this week:**

Preparing bundled cavity BCR that will include give-back for cancelling 32 new cavities and instead reworking 27 cavities at RI.

Preparing procedures for shipping of CMs together with FNAL. Developing instrumentation plan together with FNAL.

Received deliveries of 6 cavities from RI at JLab.

J1.3-01, J1.3-03 and J1.3-04 - @ Storage; Idle; Waiting to move to WS4 for VV removal

J1.3-02 – @ Stored; no further work planned.

J1.3-05 - @ LERF; Used for fit up of waveguide.

J1.3-07 - @ WS6; Prep for rework.

J1.3-08 - @ CMTF; Performed multiple fast cooldown cycles. Achieved 20K/min on HV bottom temperature sensors in most recent attempt. Q0’s are significantly higher due to fast cooldown ranging from 2.5e10 to 3.4e10. Some cavities limited by heavy field emission. After completing Q0’s, plan for eight cavity running, piezo-LLRF development work, and magnet test. Plan to investigate end group quenches and complete 1-hour runs. Overall performance indicates that hardware change-out was done successfully. Testing extended until end of next week.

J1.3-09 @ WS5 – Leak from insulating vacuum space to helium circuit localized near the front of cavity 3. Removed warm couplers and plan to move to WS4 to remove VV and lower thermal shield. Delay in move of J09 to LERF.

J1.3-10 @ WS5 – Faraday cup installed. Warm couplers in progress.

J1.3-11 @ WS3 – Magnet leads soldering and torquing complete. Alignment in progress.

J1.3-12 @ WS3 – Moved to WS3. Cold gate valve support complete. Lollipops back to clean room.

J1.3-13 @ WS2 – Rolled out of clean room 6/21. RF measurements complete. Berry bolts installation in progress.

J1.3-14 – All cavities qualified. String prep begins 2 July. String build begins 8 July. String rollout by 20 July.

J1.3-15 - 6 of 8 cavities qualified for the string.

Cavity Test Results

Cavity 025 (TD) 1st test D8, Tue. 19 June, Q0(16)~4.1e10, FE free, Quench 24.0 MV/m, Qualified for string.

Cavity 056 (TD) retest (from string 6) D7, Wed. 20 June, Q0(16)~3.1e10, FE free, Quench 23.3 MV/m, Qext FP 2e12 – need guidance from project on acceptance for string. Tentatively qualified.

Planned tests - L2-059, L2-053, L2-060 (from string 6) retest in D5 Thu., 28 June

L2-094 (from string 6) retest in D8 Fri., 29 June.

**QUALITY**:

No update.

**Upcoming Travel/Meetings:**

TTC 26-29 June (K. Wilson, A. Palczewski)

EZ Vendor Visit July 9-13 (H. Park)

LINAC 2018 Sep 14-19 (A. Solopova)

Weekly Reporting

WBS 1.04.06 Cryomodules - LERF Conversion

Week of June 21-27, 2018

**Issues:** None

**Accomplishments this week:**

Updates & photos can be seen on the WIKI wiki.jlab.org

First set of 8 SSAs have been run into shorts and controlled through EPICS interface, all LLRF racks are now powered up.

RF cable installation continues as well as terminations, the stepper RTD & tuner cables were installed last weekend.

The transfer line has finally made progress. Final leak check scheduled for July 6 (see photos). Eden Cryogenics hopes to ship on July 9.

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Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of June 21-27, 2018

**Issues:**

* Delay in procurement of interface boxes due to SLAC request to add scope of platform design to resolve interferences created during the original design of the cold box room platforms and cable trays support systems (identified in 2017).
* Installation of the LN2 Dewar and helium ‘tank farm’ foundations. The warm helium tanks have been in storage for several months awaiting completion of these supports.
* Changing the LN2 cryoplant piping design from a build-to-print to an unidentified source and fabrication. Pressure systems documentation will need to be reworked.

**Accomplishments this week:**

**2K Cold Box**

1. Top plate materials received at Craft (new vendor) to expedite delivery to 2K CB vendors.
2. Delivery scheduled for February 2019.

**4.5K Cold Box Status**

1. UCB1
   1. Platform scheduled for July shipment to SLAC.
   2. ALATUS visit to SLAC with potential reassembly vendors.
2. LCB1
   1. Ongoing wiring and instrumentation checkout in progress.
3. UCB2
   1. Wiring complete; final inspection in progress.
   2. Lower shell installation in progress.
4. LCB2
   1. Preparing to shell for lower installation this week.

**Interface Boxes**

1. Interferences created by platform design needs to be mitigated.
2. Preliminary design review scheduled for 12-July 2018.

**Venturi & Control Valves**

1. Venturi awarded.
   1. Expediting venture for critical cold box systems.
2. Control valves award delayed on technical response.
   1. Award expected this week.
   2. Priority shall be coordinated with installation schedule.

**Deliveries & Installation**

* First phase of controls enclosures delivered and received @SLAC.
  + Second phase of enclosures scheduled for delivery next month.
* Last delivery of oil removal vessels scheduled for late July

**Procurement Status**



**Quality**: Site CWI provided technical support to AES for Orbital welder setup, to be used for LCLS-II work. He also conducted in process welding inspections and high pressure testing oversight for RT J1.3-10 and participated in weekly calls for AES LN2 Dewar work and Demaco transfer line work. Site CWI traveling to AES on Wednesday, June 27 for LN2 Dewar piping inspection per previously agreed hold point.

Reviewed Cryoplant QA coverage, specifically document reviews and weld inspections, for the 4.5K CBXs due for delivery in September and October. Best option was to send the JLab CWI to the vendor for document reviews that would coincide with inspection hold points. This would allow JLab to review the documentation in manageable portions instead of receiving it all at once upon delivery to SLAC.

QA Engineer and site CWI are reviewing 4.5K CBX documentation submission, recently received from ALATUS

**Upcoming Travel/Reviews:**

* Oil processing training for SLAC (PHPK) 25-30-June-2018
* SLAC I&C staff @ JLab (coordination meeting) 27-28-June-2018
* 4.5K cold box monthly scheduling meeting 27-June-2018
* ALATUS-vendor site visit to SLAC (Reassembly) Week of 9-July-2018
* 4.5K cold box re-assembly meeting @SLAC Late-July-2018
* FAT Controls Enclosures (Phase 2) 23-July-2018

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of June 21-27, 2018, 2018

**Issues:** None

**Accomplishments this week at JLab:** No update from last week.

* Resonance/Interlock Chassis:
  + Chassis are installed in LERF Racks.
  + Rama was able to test the firmware from the code repository. All of the steppers and piezos were tested. Next is to move this to 1.5 which I believe Larry will do. This is good progress!
* LERF
  + LERF LLRF instrumentation cables: RF cables are being installed slowly due to competing priorities.
  + HOM Measurement: No change from last week.
  + Reference system and LO: CM1 is now on the LO distribution and working with the RFS and PRC chassis.
  + SSAs: In CM1 tested the last four SSAs to 4 kWs using the RFS chassis. Everything went smooth.
* CMTF
  + The next CM is cold we are waiting for a chance to complete the resonance control firmware.
* Interlock Board/Chassis:
  + Work at this time is on hold until needed for 3.9 GHz.
* Common Power Supply/Chassis/Boards:
  + Work Done.

**Upcoming Activities:**