Weekly Reporting

WBS 1.01.07 JLAB Management

Week of June 1-7, 2017

**Issues:**

**Accomplishments this week:**

Conducted Cryoplant Installation Design Review.

Conducted progress meetings for the cryoplant and cryomodules.

Conducted status meetings for the cryoplant and cryomodules.

Awarded 18 Cavities to RI.

The fifth of six warm helium compressors for CP1 arrived at SLAC.

Preparing for DOE review

**Upcoming Activities:**

Collaboration Meeting 12 June 2017

DOE Status Review at SLAC 13-15 June 2017

SRF 2017 in China July 17-21, 2017

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

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of June 1-7, 2017

**Issues:** Impact on cryomodule assembly schedule due to design changes and parts availability associated with microphonics.

**Accomplishments this week:**

BCR to fabricate 18 cavities at RI from material that EZ had on hand was implemented fully into baseline.

BCR for HOM BLA including updated schedule and cost was implemented fully into the baseline.

Reviewed revised estimate for using LERF for CM testing in advance of DOE review. Discussed proposal at Lab planning and coordination meeting. Lab management will provide input on cost estimates in about one week.

Cavity Status

Continuing with vendor on-site support at Zanon. Hold point 1 for CAV256 – CAV284, Hold point 2 for CAV256 – 271, and Hold point 3 for CAV256 – 265. In addition, CAV260, 261 had a loss of field flatness during pressure test that was fixed.

JLab received cavities 262 thru 265 from Zanon.

RI is making good progress and is continuing to ship cavities. Hold Point 1 thru CAV0126, Hold Point 2 thru CAV0117 with several exceptions and Hold Point 3 thru CAV0111 with several exceptions.

Jlab received cavities 84, 92, 94 and 104 from RI.

Cavity 067 was reprocessed and prepared for shipment to FNAL for additional testing.

Four cavities (084, 092, 262 and 263) are being transferred from JLab to FNAL in order to support their production schedule for June/July.

pCM Status

Planning to begin cooldown on 8-June in order to focus on Qo procedure development and 8-channel RF operations. Testing duration between two to three weeks. Tested for leak in JT valves warm. Results - 2e-3 mbar-ltr/sec leak across JT with either stem compared with specification of 2e-4 mbar-ltr/sec. Removed magnetic material and shut off all electrical in CMTF and re-measured magnetometers. Removed pumps and ion pump magnet from coupler manifold . Shut off temp sensors, disconnected tuners and heaters in CM. Evaluated residual magnetic fields – average less than 2 mG, one location showed 7 mG peak.

Production Status

CM-02 (currently at WS5):

Complete and ready for installation into CMTF at completion of pCM testing. Conducting degauss of the bayonet box gate valve to ensure good magnetic hygiene.

CM-03 (currently at WS3):

Inner MLI installation is complete. Degaussed welds on two-phase pipes. Welded 50K shields. Plan to move to WS4 on 9-June.

CM-04 (currently at WS3):

Moved to WS3 on 01-Jun. Needle bearings are installed. Invar rods and clamps are installed. Helium lines welding in progress

CM-05

Cavity string was completed on 31-May and rolled out from cleanroom on Thursday 01-June.

CM-06 Cavity Testing

Four cavities qualified at DESY are planned for string 06. These four are in receiving inspection at JLab. String assembly scheduled to start on 19-June.

Cavity 063 was retested in 2 mG field, previously low Qo of 2.1 x 10^10 in 5-8 mGauss field at 16 MV/m, with Qo = 3.2 x 10E10 at 6 MV/m and quenched at 21 Mv/m. Cavity confirms lack of flux expulsion in NX-A material.

CM-07 Cavity Testing

Final test cycle (four cavities) was completed during May at DESY. All four cavities have low Q0 – PCCM is discussing further testing options.

**QUALITY**

Submit the monthly SNCR Dashboard to SLAC. Two new ones were added for low Qo in cavity VTRF.

**Upcoming Travel:**

E. Zanon Vendor Oversight May 30-Jun 10 (A. Palczewski)

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)

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of June 1-7, 2017

**Issues:**

**Accomplishments this week:**

Work to address the recommendations of the Director’s Review inclusive of recommendation #32 (JLab Director’s Review of the Cryoplant Installation Design Completion.) The recommendation called for a review of the resources and schedule to complete the JLab portion of the cryoplant. The review committee, committee charge, and agenda was developed. The review was successfully held at JLab on June 1st.

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

One additional CP1 LP warm helium compressors is scheduled for delivery ~June 13th with the final CP1 MP warm helium compressor scheduled for ~ 1 week later.

4.5K Cold Box

* + CP1 Upper cold box heat exchangers HX-1 and HX-2 have been mounted on the cold box internal structure. HX-3 is in the process of being mounted using CP2 HX-3. Bruce Lenzer will witness the mounting at PHPK on June 7th.
  + The missing seismic analysis appendix was delivered to JLab. Work continues to close out the 4.5K Cold Box FDR action items.
  + 80% of the nozzle for the CP1 LCB has been completed.
  + AL/PHPK currently investigating manpower resources till end of delivery to avoid future schedule delays.

Warm Helium Gas Storage Vessels

* Coordination of storage vessel delivery in the later part of June and July has begun with SLAC. Documentation for seismic anchoring and vessel pressure design was received from the vendor for BIO review.

Two recovery compressor skids:

* Remaining on schedule for delivery in July 2017. Final electrical assembly is underway.

Ambient Air Vaporizers

* Shipment schedule to SLAC tentatively set for 2nd week of July.

**QUALITY**

Mike Skonicki visited JLab and we discussed the approval and review process for CryoPlant design drawings, in preparation and subsequent participation in the Director’s Progress Review that took place on June 1st.

Bruce Lenzer will be at PHPK on June 8th to witness the mounting and assembly of the heat exchangers to the 4.5K Cold Box.

**Upcoming Travel/Reviews:**

DOE Review, SLAC, June 13-15th 2017

CP Installation Package FDR July 17

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of June 1-7, 2017

**Issues:** None

**Accomplishments this week at JLab:**

* LLRF Coordination/Documentation:
* Heater: The FPGA board is in the process of being assembled, due June 12th. Front and back panels have shipped from the vendor.
* LLRF Production: Waiting on SLAC the vendor estimate.
* BCS: Trent is working on a conceptual design estimate. John Musson is compiling information to do a comparison between cavities and toroids for current monitoring.
* Uploaded DOE LLRF review presentation last week.
* Resonance/Stepper Motor Board/Chassis:
* CMTF Resonance Tests: Preparing for the pCM retest-retest.
* Software: Continue working on both firmware and software for the next CM tests in June.
* Interlock Board/Chassis:
* Nothing to report.
* Common Power Supply/Chassis/Boards:
* Gun Power Distribution Board: First one will be shipped to LBNL today. The 2nd one is being assembled.
* Gun/Buncher PS Chassis: Waiting on pc board.
* 1.3 GHz Power Supply Chassis: We are building 6 more chassis. This will include the recent production mods. SLAC will provide the wiring diagram, the chassis hole pattern and front/back panel modifications.
* CMTF
* PRC/RFS: Ordered a new rack to house the LCLSII LLRF chassis. In addition we have ordered two computers and monitors for the EPICS interface.
* Preparing for extended pCM tests.

**Upcoming Activities:**

* Prepare for DOE Review
* LLRF FDR moved to the end of July.