Weekly Reporting

WBS 1.01.07 JLAB Management

Week of Jan 20-26, 2017

**Issues:**

**Accomplishments this week:**

Host Smith Group and SLAC personnel for CP installation meeting.

Received first results on an EZ bare cavity processed with the new EP parameters, results were very good.

Helium Dewar RFP went out on the street.

Cavity testing arrangements finalized for qualifying cavities when the JLab CTF helium refrigerator is down for upgrade.

BCR and EACs developed and submitted/presented for CP and CM work.

**Upcoming Activities:**

FAC at SLAC 11-13 April 2017 - Tentative

Director’s Review at SLAC 3-5 May 2017

DOE Status Review at SLAC 13-15 June 2017

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of Jan 20-26, 2017

**Issues:** Cost and schedule impacts due to cavity recipe development effort at vendors. Planning and execution of CTF down activities.

**Accomplishments this week:**

CTF down is planned to start 17-FEB. The duration of the downtime has been revised to seven weeks based on accounting for previous work, coordinated activities and updated available resources.

After review with SM, we presented EACs at CCB for two control accounts – Engineering & Design and prototype CM.

Provided initial cost estimate for additional cavities and niobium materials. Planning trip to potential material supplier.

Production cavity coordination meeting – main topics are evaluating Zanon EP process, preparation for vendor visit and discussion of cavity routing to support string assemblies at both labs. Four bare cavities from Zanon arrived at FNAL for evaluation of EP process. Two NX lot C bare cavities from RI are planned to ship 1-Feb to FNAL for evaluation of 975 deg C bake intended to improve flux expulsion. Cavities 0017 and 0018 have been used for R&D purposes. Rework to make these useable for production is being considered.

pCM Status

Conducted testing on four of eight cavities in the last week.

Conducted maximum gradient tests on cavities 6 encountering vacuum activity and some coupler heating.

Ran endurance tests for five hours to investigate FPC heating effect on cavity 3 at 18.8 MV/m, cavity 4 at 18 MV/m, cavity 1 at 16 MV/m for five hours to investigate FPC heating effects. Running endurance test on cavity 5 next.

Testing on cavity 8 was limited due to influence of three stub tuner on cavity coupler – currently investigating to determine cause.

Obtained microphonics data last Friday evening on cavity 3 investigating impact of JT valve position. This data was processed and then presented at the Tuesday SRF weekly meeting. Obtained microphonics data on cavity 4 investigating impact of JT valve position at steady gradient of 18 MV/m. Obtained microphonics data on cavities 1 and 5.

Confirmed mechanical tuner range on all eight cavities. Conducted piezo range tests.

Reviewed list of remaining tests planned. Expect testing to wrap up by the end of January in advance of CTF down. Some combined cavity tests will be delayed until after the shipping test is completed.

Production Status

CM-03:

Cavity 0035 qualified for string. Results: admin limited at 20.3 MV/m; FE free (< 3e-2 mR/hr); Tested in 5-8 mGauss field; Q0(16MV) = 3.8e10.

Cavity 0021 qualified for string after re-rinse. Results: admin limited at 24 MV/m; FE free (< 3e-2 mR/hr); Tested in 5-8 mGauss field; Q0(16MV) ~ 4e10.

Cavity 0024 has been re-rinse and planned for retest on 27-Jan.

Started preparations of kit, tooling and hardware needed for string assembly.

CM-02:

Two phase piping construction in progress. Instrumentation in progress. Titanium sheet heater restraints have been installed.

Waiting on delivery of magnet 004 – currently shipping from FNAL this Friday.

Waiting on delivery of some parts for weld kit from FNAL that were shipped on 23-Jan.

Inspected batches of copper plated bellows, mechanical tuner frames and dressed cavities.

Visited CMTF HX manufacturer on 26-Jan to inspect piping prior to final assembly.

**QUALITY**

We had a QA Coordination meeting with Fermilab. Topics included CM Transportation test plan presented by N. Huque. We also discussed statuses of cavity and pCM testing, including on-going QA/QC work with key component vendors.

Continue to work on downloading and synching issue with the Microsoft One-Drive for the cavity vendor Hold-point data. JLab’s computer center is helping to resolve the issue.

**Upcoming Travel:**

E. Zanon Vendor Visit January 28 - Feb 10

Nb Material and Bellows Plating Vendor Visit January 30 - Feb 7

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of Jan 20-26, 2017

**Issues:**

**Accomplishments this week:**

A Smithgroup report meeting was held at Jefferson Lab on January 25th to review their analysis of the current installation design package and the recommendations to complete the cryoplant installation documentation package.

Plans continued for JLab to visit the 4.5K cold box vendor manufacturing facility on January 31-Feb 1st.

Preparation for a vendor kickoff meeting for the LN2 dewars at the vendor’s facility was conducted.

Warm helium gas storage vessel documentation was received with copies submitted to BIO for comment. Comments are due at end of day Jan 26th. Mounting saddle criteria was shared with SLAC infrastructure as additional verification of requirement coordination.

Preparation continued with development of presentations to support the Integrated Controls Workshop to be held at SLAC on February 8th.

Received vendor proposals for the Helium Purifier System. Technical evaluations continued this past week and are near completion

The second phase of the 2K cold compressor FDR was held on January 11th at the Air Liquide R&D center in France. Questions from the reviewers are in the process of being addressed by the vendor. There are no major concerns.

**QUALITY**

Working on the draft QA slide for the LHe Dewar PRR.

**Upcoming Travel/Reviews:**

4.5K Cold Box Manufacturing Kick Off Meeting, January 31-Feb 1

Controls Integration Workshop, SLAC, Feb 8

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of Jan 20-26, 2017

**Issues:** None

**Accomplishments this week at JLAB:**

* LLRF Coordination/Documentation:
  + Heater: Board is completed.
  + Buncher Interlocks: Reviewing the I/O document sent by Gang.
  + In the process of sending interlock, resonance and power supply chassis to SLAC.
* Resonance/Stepper Motor Board/Chassis:
  + George Lahti is back working on the software. Goal is to test the functionality of the chassis before we warm up the pCM next week.
* Interlock Board/Chassis:
  + 2nd Chassis is in the process of being checked out with the pCM interlocks.
* Common Power Supply/Chassis:
  + Five power supplies are complete.
  + Gun PS Chassis/Board: Still waiting on information from LBNL.
* CMTF
  + We are running the JLAB LLRF system in GDR in support of the microphonic measurements. Besides microphonic data we hope to get field control data and operate a stepper motor in the background.

Upcoming Activities:

* + Team Meeting next week at FNAL. C. Hovater is going.
  + Interlock meeting to discuss which ones we keep for production (A. Burill to convene).
  + Prepare for FDR in March