Weekly Reporting

WBS 1.01.07 JLAB Management

Week of Jan 27 – Feb 2, 2017

**Issues:**

**Accomplishments this week:**

NCR dashboard was updated

Set up working meetings with CAMs for ETC

**Upcoming Activities:**

Director’s Review at SLAC 3-5 May 2017

DOE Status Review at SLAC 13-15 June 2017

FAC at SLAC Late Summer 2017

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of Jan 27 – Feb 2, 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.

CCB approval of EACs for two control accounts – Engineering & Design and prototype CM.

Traveled to potential niobium material supplier to review and discuss specification. Plan to provide project management with updated schedule and cost shortly after the visit.

Developing strategy to restart Zanon. Four bare cavities were tested at FNAL and meet specification at 16 MV/m with no field emission. This indicates that EP process is basically under control. Three cavities exhibit Q-slope and show depressed Qo (~2 x 10^10) at 19 MV/m. This may indicate some other problems such as inclusions or impurities introduced during cavity fabrication. Experts currently at Zanon are evaluating forming, machining and welding processes in advance of restart of production.

Meeting was held with DESY experts and plans have been finalized for qualification testing of RI cavities at DESY. First batch is scheduled to ship by RI company truck on 06-FEB. Second batch will follow within one week or so.

pCM Status

Conducted testing on all eight cavities in the last week as well as on the superconducting magnet. Total voltage for pCM is currently > 133 MV meeting specification of > 128 MV. Average for seven operable cavities

Locked cavity 4 in generator driven mode (GDR) at 16 MV/m. Needed to utilize external valve in bayonet box to control liquid level. Internal JT valve was left manually fully open – cryogenics were not stable when this valve was operating.

Locked cavity 1 and 4 in GDR using external control valve to demonstrate phased resonance control of multiple cavities. Internal JT valve was locked in full open position.

Obtained microphonics data on cavity 5.

Performed Qo measurements on cavity 1 and 4 in steady state flow. Currently processing data.

Performed hammer test on pCM to investigate influence of external sources on cavity detuning. Currently processing data and plan to present at upcoming joint meeting.

After tilting CM by 0.5%, we successfully ran cavities 1 and 4 in GDR at ~16 MV/m for ~30 minutes with very stable helium bath pressure. Took microphonics data. Observed a 30 Hz line that is under further investigation.

Conducting performance tests on superconducting magnet.

Reviewed list of remaining tests planned. Testing will wrap up and pCM will begin warm-up on 2-FEB in advance of CTF down. Some combined cavity tests have been delayed until after the shipping test is completed.

Developing plans for re-work of FPC adjusting rods after pCM warm up.

Continuing with plans for shipping test. We have installed the counterweights and shims on the shipping frame, and the accelerometers are being tested. Pre-assembly and cleaning has started on the beamline components. Received vacuum gauges from FNAL – need to re-clean prior to installation on beamline vacuum.

Production Status

CM-03:

Cavity 024 tested Friday, 1/27, and failed for a second time due to early FE onset and will undergo optical inspection.

Cavity 033 is scheduled to test Thursday 2/2.

Cavity 022 is scheduled to test Friday 2/3.

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

CM-02:

Two-phase piping construction is continuing but will shortly be on hold awaiting for a decision on JT line modifications.

Instrumentation is in progress; however we need some modified procedures from FNAL.

Magnet has arrived, performing incoming QC.

Upper cold mass UCM006 - Incoming QC is in progress.

Vacuum vessel VV006 - Incoming QC scheduled for Feb 7th

Continuing inspections on beamline bellows and spools prior to shipment to plating vendor.

**QUALITY**

Submitted the monthly Significant NCR Dashboard to SLAC LCLSII Project QA.

Worked with SOTR to develop QC check and to degauss the production UCM assemblies from WXCX.

SLAC Systems Integration requested a system-by-system breakdown of applicable cryomodule design codes. Discussions are to continue.

**Upcoming Travel:**

E. Zanon Vendor Visit January 28 - Feb 10

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

Vendor Visit to CPI, Thales, RI February 16-25

TTC at MSU/FRIB Feb 20-24

Vendor Visit to Wuxi March 20-24

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of Jan 27 – Feb 2, 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. Final report was received by SLAC on Friday, 27 January.

JLab and SLAC engineers attended 4.5K cold box ITP review held at PHPK on Jan 31-Feb 1. Topics included both internal vendor manufacturing verification/hold/approval manufacturing steps inclusive of those required by JLab procurement specification. A tour was held of the manufacturing facility indicating present material on hand and work progress. A schedule review indicates schedule is being held. The meeting was attended by Keith Brown, PHPK QA Manager and Terry Deerfoot , PHPK Manufacturing Manager.

Fabrication of the CP1 warm helium compressor skids at PHPK appear to be on schedule with indications of substantial progress in both the HP and LP compressor skid assemblies.

A meeting was held at PHPK, Columbus Ohio with JLab and SLAC engineering in attendance to close out FDR submittal requirements. At this time all FDR documentation was delivered to JLab with the completion of the cold box inlet filter submittal.

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

Upper 4.5K cold box shipping saddles are under construction at PHPK.

4.5K cold box cryogenic PHPK valve bodies are being currently fabricated at Midwest Ohio.

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

**QUALITY**

PHPK presented their internal QA/QC plan during the ITP review at PHPK on January 31.

Reviewing the Inspection & Test Plans (ITPs) for the 2K Cold Compressor submitted by Air Liquide.

SLAC Systems Integration requested a system-by-system breakdown of applicable CryoPlant design codes. Discussions are to continue.

**Upcoming Travel/Reviews:**

Controls Integration Workshop, SLAC, Feb 8

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of Jan 27 – Feb 2, 2017

**Issues:** None

**Accomplishments this week at JLAB:** On travel, no report.