Weekly Reporting

WBS 1.01.07 JLAB Management

Week of September 11-17, 2015

**Issues:** Need money/budget authority to continue past Sept 30.

Cryogenic shield load appears to exceed capability of one cryoplant for planned first light operating conditions.

Awaiting approval to proceed with production component orders for gate valves, HOM & FP feedthroughs.

Awaiting guidance on phasing of cavity vendor awards.

**Accomplishments this week:**

4.5K CB vendor kick-off meeting tentatively scheduled for Oct 8. Warm compressor award at DOE for approval.

HTB testing using limited SSB power is being completed this week.

Closeout of Cryogenic Systems Report by consultant will occur today.

**Upcoming Activities:**

Cryogenics System FDR at SLAC, September 28-30, 2015

4.5K Cold Box Vendor Kick-off Meeting, tentatively 1st week of October – To be confirmed

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of September 11-17, 2015

**Issues:** pCM component schedules, JLab pCM schedule is driven by the availability of parts. Awating approval to proceed with production component orders for gate valves, HOM & FP feedthroughs.

**Accomplishments this week:**

The first VQ cavity (AES023) arrived at RI, along with one set of testing hardware.

The second VQ cavity (AES025) is in transit to Zanon, along with one set of testing hardware. Customs issues are still delaying delivery to Zanon. Issues with customs documents have been resolved.

The third and fourth VQ cavities (RI023, AES014) are being prepared for baseline testing. AES014 has been disassembled and re-rinsed. RI023 will be tested this coming week.

JLab has eight cavities on-site - AES029, 030, 031, 032, 033, 034, 035 and 036. Considering corrections for testing hardware, seven cavities are qualified for string assembly – AES 029, 030, 032, 033, 034, 035, 036. The final one (031) now is leak tight and will be re-tested on 9/18. This date slipped by two days due to helium supply issues with the cryogenic test facility (CTF). AES 030 has low Q0 and may be retested if time allows.

Cold couplers are being re-rinsed at JLab in order to reduce internal particulates.

Continuing with HTB testing of AES033. SSA is administratively limited to 2.4 kW compared with 3.9 kW advertised. Gradient of 12.5 MV/m has been achieved with Q\_loaded of 2 x 10^7. No field emission observed. Q0 measurements are in progress. Measurements with SSA admin limits removed will be done before warm up. Warm up is planned for 19-SEP.

Continuing with installation of cantilever fixture.

Completed receipt inspection on cu-plated bellows assemblies needed for cavity string assembly. Bellows have passed leak checks and blister tests. JLab is blister testing spool pieces needed for FNAL pCM.

Continuing assembly activities for CM Bayonet Box needed for CM testing. Received thermal shields sub-assemblies, top plates and bayonet parts. Completed welding female bayonet sub-assemblies, include leak checking.

JLab staff (13 people, some associated with LCLS-II) attended SRF2015.

**QUALITY** - Mike Skonicki (SLAC LCLS-II QA Manager) visit to JLab:

Mike Skonicki visited JLab on Sep 15th to follow up on items from the previous “Cross-walk” exercise. Mike explained the various recent changes to the administrative staff at SLAC for LCLSII, particularly those for QA and document control processes.

Afterwards, Mike conducted a drill down on the JLab ACS document for the Dressed Cavity, including a review of the associated technical spec. He would like to see additional information added to the cavity ACS form. Johnny will call meeting to explain the change requests.

Mike was delighted to see the JLab/Fermilab QA collaboration poster and paper contributions to the 2015 SRF Conference. The body of work behind these documents is in good alignment to the project QA, particularly the NCR Communication Plan & Flow Chart.

The planned QA assessment of JLab in October is to complete and validate the actions from the Cross-Walk exercise. At the moment, Mike just wants to see more of the ACSs being completed, which could satisfy all of the assessment needs, without having to have another follow-on visit.

Overall the meeting went very well. Mike is expecting a positive report back to SLAC. JLab is continuing on the right track. Mike sees no major concerns with our QA processes.

**Upcoming Activities:**

* 28-30 September 2015 – Cryosystems FDR at SLAC

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of September 11-17, 2015

**Issues:** Proposed (the cryomodule Rev 1 EN heat load document) cryomodule shield heat leak appears to exceed the refrigeration shield capacity of a single plant.

**Accomplishments this week:**

Preparations continued for the Integrated Cryogenic Systems review to be held at SLAC Sept 28-30th and the FAC Review for 13-15 Oct 2015

A draft version of the 2K cold compressors (JLab 79222-S001) and helium gas storage vessels (JLab 79729-S001) procurement specifications were released for comment. Comments were received and are in the process of being incorporated into the procurement specification.

A warm helium compressor procurement presentation was made SLAC and DOE. Documentation has been sent to DOE for approval. Awaiting approval ~Sept 23rd.

John Pucci and Viswanath Ravindranath (engineers from SLAC), have relocated to Virginia and have joined the JLab cryogenic group for the LCLS-II Project. John is actively engaged in operations of large JLab 2K refrigeration systems while Vishy is comparing modeling results against JLab 12GeV operational data for modeling validation.

Weekly meetings with SLAC Infrastructure continued for planning the new larger cryoplant building for the first and second cryogenic plant.

**QUALITY**

ACR development for the major cryoplant subsystems is planned to be completed.

**Upcoming Activities:**

Sept 28-30th, Cryogenics System Final Design Review hosted by SLAC

4.5K Cold Box vendor kick off meeting, tentatively 1st week of Oct, to be confirmed

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of September 11-17, 2015

**Issues:** None

**Accomplishments this week:**

* LLRF Coordination/Documentation:
  + Reviewing cryomodule cabling
  + Received edits from M. Ross concerning LLRF FRS
  + Pushing ESDs
* Stepper Motor Board: The stepper board is out for manufacture.
* Interlock Board: Work continues on interlocks schematic and pcb.
* Common Power Supply: Slow going because of CAD support.
* CMTF: First JLAB HTB test is going well. SSA is performing to 2.4 kW with no issues.

**Upcoming Activities:**

* + Continue with LLRF coordination.
  + Get stepper board back late next week.
  + Finalize the interlock schematic.
  + Order chassis for common power supply.
  + Team Meeting planned at FNAL on Oct 6-7.