Weekly Reporting

WBS 1.01.07 JLAB Management

Week of January 4-7, 2016

**Issues:**

Need Niobium to be delivered to the cavity vendors.

Need final evaluation of the use of 2500 HP motors for the CPs at SLAC.

**Accomplishments this week:**

Status December progress and review with System Manager et al.

Preparing BCR information for CM off site storage, CM End level tuner, CM Cavity fabrication mods, CP 4.5K Cold Box Hx-1 Design mod.

**Upcoming Activities:**

Trip to DESY to develop BPM and HOM absorber procurements.

Trip to Vendors for Cavity Frequency Tuner actuator components.

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of January 4-7, 2016

**Issues:** JLab pCM schedule is driven by the availability of parts including bellows, magnetic shielding, tuners and GHRP assembly. Need to ship cavity materials to vendors. Need defined process for resolution of NCRs.

**Accomplishments this week:**

Progress on testing end cap fabrication continues. We have received and are inspecting the bayonet box vacuum vessels.

Material has been released for RI. NbTi materials, tubes and Ti materials are at RI. Nb sheet has not been shipped.

No information on release of materials to Zanon has been received. NbTi materials on hold at JLab awaiting info (corrected from previous report). Request in to DESY import contact for clarification.

Vendor Qualification Cavity Status:

**EZanon**

Zanon has passed Phase I qualification.

AES025 – Qualified in early December

AES014 – Tested 22-DEC; Qo = 3.1 x 10^10 @ 18 MV/m; Quench @ 23.7 MV/m; For reference during baseline testing - FE limited at 17.5 with Qo of 1.7 x 10^10

**RI**

AES023 – Shipped to JLab; in customs receipt; arrival expected next week

RI023 – EP complete; arrival expected first week Jan 2016

Manufacturing drawings from RI and Zanon are under review. Helium vessel proposed design from Zanon under review with FNAL design leads.

GHRP parts received from FNAL. Awaiting detailed list of modifications from FNAL. No progress on resolution of major NCRs. Assembling Upper Cold Mass subassembly and working with FNAL on welding procedure for Invar rod.

SOTR and Lead technician traveled to FNAL for training on soldering leads for SC magnet week of January 4, 2016.

Received 3 R&K SSAs at JLab on 4-January. Plans for R&K expert to visit 14-15 January for installation check-out are underway. SSAs are sited and utilities are being attached.

Recovery plan for copper-plated bellows is being implemented. Four long bellows were shipped to FNAL. Three long bellows processed and ready for installation at JLab, Six more are in receipt inspection. Two long spools are ready for use. Two short bellows shipped from vendor are now in process. Two short spools shipped from vendor are now in process. All parts expected complete by 12-January. A. Burrill coming to JLab to provide guidance on acceptance for bellows. Request submitted to FNAL to send rejected long bellows to JLab for further evaluation.

CMTF coax waveguide parts are being prepared for installation. Task hazard analysis has been completed.

**QUALITY**

Continue to support QA/QC activities relating to the cavity string bellows and spools. In addition to the standard inspection and qualification tests, various bellows are also being visually examined for surface quality on the outside surfaces of the convolutions.

Project level discussions have prompted a question regarding the level of SLAC input to major NCRs that are generated at the partner labs. Fermilab and JLab each have an existing internal procedure for handling NCRs. At the moment, there is no procedure that defines the process of communication, review and approval by SLAC (if deemed a project requirement). Jamie Blowers at Fermilab has been assigned the point person for this topic.

**Upcoming Activities:**

Andrew Burrill will be visiting JLab the middle of next week to review status of the bellows. One of the objectives for this trip is for Andrew to provide inputs to the plating conditions of the various bellows that are being planned for the pCM.

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of January 4-7, 2016

**Issues:**

Warm helium compressor vendor ready to order 1st set of CP1 warm helium compressor motors, SLAC is unsure they can start the larger 2500HP motor without causing large voltage dip. SLAC has requested postponing ordering of 2500HP warm helium compressor motors at least until SLAC analysis is received in December.

Question of single or dual heat exchanger core design for the HX-1 upper heat exchanger of the 4.5K cold has shown only the dual heat exchanger core design has demonstrated substantial reduction in LN2 use although engineering calculations indicate that both designs (to date) should have worked. Vendor is requesting additional funding to implement the dual core design which was not part of their proposal plus funding for delay of decision to proceed.

**Accomplishments this week:**

A review of the HDR consultant power distribution voltage drop study preliminary results were looked at. There is substantial difference in the results between the study and the previous internal SLAC engineering study which indicates far less concern of the magnitude of the voltage drop.

The seismic study for the warm helium gas management system was conducted.

The weekly design coordination meeting was held with the 4.5K cold box vendor (Air Liquide). All action items are being properly addressed in preparation of a preliminary design review for Mid February 2016. A plan to witness a performance test of the turbine brake system is also being schedule in February 2016.

Antonio C. de Lira (SLAC controls engineer) will be visiting JLab Jan 11-15th as part of a plan for his relocation to JLab to work on the LCLSII cryoplant controls beginning in February 2016.

CP1 warm helium compressor vendor has been placing orders for motors, compressor bodies, and heat exchangers. SLAC has requested holding up on order for 2500HP motors until power study is completed in January 2016.

JLab is working to complete the 2K cold compressor specification changes per SLAC request for release to procurement.

Design work continued for the compressor room warm helium gas piping installation design. Design completion remains set for January 2016.

**Upcoming Activities:**

4.5K Cold Box Turbine Brake Operations Demonstration, February 2016

Antonio de Lira Visit Jan 11-15th

4.5K Cold Box PDR, Mid-February 2016

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of January 4-7, 2016

**Issues:** None

**Accomplishments this week:**

**JLAB**

* LLRF Coordination/Documentation:
  + Reviewing ESD.
  + Confirmed reviewers for LLRF PDR
* Stepper Motor Board: Undergoing tests
* Interlock Board: ARC/IR boards are being tested. Onish Kumar is buying parts for the FEM prototype board design.
* Common Power Supply: Distribution board is in test.
* CMTF
  + SSAs have arrived (3). Temporary power is being installed for the tests next week.
  + Documentation: Dave is working on system print. First cut will be ready by January 15.
  + LLRF: Digital boards are ready for test

**Upcoming Activities:**

* JLAB:
  + Test SSAs
  + Continue prototype tests (resonance, interlocks power supply)
  + Work on PDR (agenda and presentations)
  + CMTF: Test 1.3 GHz RF boards
* PDR Planned for March 3/4 at SLAC