Weekly Reporting

WBS 1.01.07 JLAB Management

Week of January 15-21, 2016

**Issues:**

Need Niobium to be delivered to the cavity vendors.

**Accomplishments this week:**

Started the review of the funding proposal received from the project.

Preparing BCR and EAC files, details in the L3 reports.

**Upcoming Activities:**

Trip to DESY to develop BPM and HOM absorber procurements – Jan 17-22.

Trip to Vendors for Cavity Frequency Tuner actuator components – Feb 7-12.

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of January 15-21, 2016

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

**Accomplishments this week:**

The following list of BCRs have been discussed with the SM and are in preparation: Cavity Parts in Circulation Cost (CCB 1/28), Cavity Tuning Machine (CTM) Cost, Production Tuner Schedule and Offsite Storage Cost (CCB 1/28).

Cavity string assembly - completed assembly of BPM, quad spool and downstream gate valve subsection and verified leak tight. String awaits copper plated bellows. Need two long and one short plated bellows. Practice assembly is on-going in advance of bellows receipt.

Progress on testing end cap fabrication continues. The first of two units has been cold shocked, leak checked and is undergoing pressure testing. The second unit has all piping welded and is being prepared for testing.

Material has been released for RI. NbTi materials, tubes and Ti materials are at RI. NbTi materials are being shipped from DESY to RI. Nb sheet has are being shipped from DESY. Materials needed for first articles are expected at vendor site before the end of January at the latest.

Material has been released for Zanon. Nb tubes and Ti materials are being shipped from FNAL to Zanon. NbTi materials are being shipped from JLab to Zanon. Nb sheet is being shipped from DESY to Zanon. Materials needed for first articles are expected at vendor site before the end January.

Vendor Qualification Cavity Status:

**Zanon -** passed Phase I qualification.

**RI -** AES023 – In customs receipt; arrival expected at JLab TBD. Testing planned after RI023.

RI023 – Arrived at JLab (20JAN); Testing planned for next week.

Manufacturing drawings from RI and Zanon are under review (expected complete by 29-Jan) by JLab and FNAL SOTRs. Significant progress on helium vessel proposed weld joint design from Zanon under review with FNAL design leads.

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

JLab certified weld inspector will travel during last week of January to PHPK for on-site inspection of vessel.

SC quad magnet was expected from FNAL on 20-Jan, but was shipped from FNAL on 20-Jan.

Daly, Peshehonoff and Park at DESY (17-22 Jan) along with FNAL and SLAC colleagues to discuss production BPM and beamline absorber procurements. Aspects of cavity fabrication will be discussed including CTM and cavity parts in circulation.

Planning is underway for a trip with FNAL colleague to visit production tuner component vendors, Phytron for stepper motors and PI for piezos, during second week of February.

R&K expert visited 14-15 January for SSA installation & check-out. SSAs have passed on-site inspection.

Recovery plan for copper-plated bellows is being implemented. A. Burrill deemed components acceptable for cavity string assembly. FNAL has received bellows for string assembly. Two long bellows and one short bellows are needed for the JLab cavity string. One short bellows expected from Epner (1/21). SLAC has three short bellows but awaits chemical delivery in order to start plating. Balance of short bellows, three, completed incoming inspection. Four long bellows are undergoing incoming inspection. SLAC colleagues are conducting material investigations of stainless steel used in bellows fabrication but no formal plan has been communicated to JLab.

CMTF coax waveguide parts are being prepared for installation. Components for installation have been received. Sections are being cut to length.

**QUALITY**

Andrew Burrill visited JLab on Jan 14 & 15 to examine the Cu plated bellows and spools. Inspection “calibration” was good between Andrew and the JLab inspectors. What Andrew saw in terms of plating characteristics matches to those observed by JLab, and the judgement about the plating quality is the same between the two sides.

The outcome of the Andrew visit was that JLab ended up shipping some from the balance of acceptable bellows and spool to Fermilab that are needed to complete their cavity string. For the JLab string, new additional bellows are being sent out for plating and qualification, to make up for the deficit of parts for the JLab string.

Additional progress was made with the ACS forms. We received quick feedback from Fermilab on the draft ACSs for the bellows and gate valves. We should be able to get these two sets of documents signed off momentarily.

**Upcoming Activities:** Vendor Visit to Germany Feb 7-12, 2016

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of January 15-21, 2016

**Issues:** None

**Accomplishments this week:**

A review of the HDR consultant power distribution voltage drop study preliminary results were looked at. There was 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. SLAC SM has released the 2500hp warm helium compressor equipment for procurement. Schedule variance caused by the equipment procurement hold should be recoverable January/February 2016.

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 9 March 2016. A plan to witness a performance test of the turbine brake system is also being schedule in February 2016.

SLAC management has authorized using the 2 core heat exchanger design for the 4.5K cold box. The vendor has been notified.

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

CP1 warm helium compressor vendor has been placing orders for motors, compressor bodies, and heat exchangers and has been authorized to procure the 2500hp equipment.

JLab completed the 2K cold compressor specification changes per SLAC comment request. The specification was released for signature but has been returned with new SLAC comments for revision.

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

**Upcoming Activities:**

4.5K Cold Box Turbine Brake Operations Demonstration, February 2016

Antonio de Lira joining the JLab design team, 15 Feb 2016

Warm Helium Compressor CDR, 17 Feb 2016

4.5K Cold Box PDR, 9 March 2016

Weekly Reporting

WBS 1.02.03.05.12 LLRF

Week of January 15-21, 2016

**Issues:** None

**Accomplishments this week:**

**JLAB**

* LLRF Coordination/Documentation:
  + Reviewing ESD and PDR agenda.
  + Dave and Andre connected. Discussed the chassis.
* Stepper Motor Board: On hold until after CEBAF start up.
* Interlock Board: Onish Kumar is putting together the FEM prototype. He is taking over the chassis and other interlocks.
* Common Power Supply: Picked out supervisory chip.
* CMTF
  + SSAs were successfully tested with R&K and Dian Yermian (SLAC) present. SSA server is going forward.
  + Waveguide and Coax: Workers have ODH2 training so installation should pick up next week.
  + Cable Tray drawings are being updated.
  + Documentation: System block diagram is being passed around for review.
  + LLRF: Digital boards an assembly issue. One of the parts was put on backwards. Plan is to send them back for repair.

**Upcoming Activities:**

* JLAB:
  + Continue prototype tests and assembly (resonance, interlocks, power supply)
  + Work on PDR (agenda and presentations)
  + CMTF: Continue working on documentation, installation and instrumentation.