Weekly Reporting

WBS 1.01.07 JLAB Management

Week of January 22-28, 2016

**Issues:**

Need Niobium to be delivered to the cavity vendors.

**Accomplishments this week:**

Submitted accruals

Submitted variance reports

Started to collect January progress data

Completed the PAR for the Wet Chemistry Tool

Prepared BCR and EAC files

Preparations for LCLS II visitors

Prepared BCR presentations for Parts In Circulation and off site storage

Started the procurement process for the shipping frames

**Upcoming Activities:**

BESAC advisory meeting 10-11 February

Weekly Reporting

WBS 1.04.6 JLAB Cryomodules

Week of January 22-28, 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. Need to ship cavity materials to vendors to begin first article fabrication. Project schedule driven by production cavity delivery schedule – need to recover float.

**Accomplishments this week:**

Actively working cavity production schedule issues in order to recover schedule float by accelerating vendor delivery rates. Issues include material delivery from vendors, manufacturing drawing approval, parts in circulation and cavity tuning machine funding.

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 is undergoing final leak and will have MLI installed. The second unit is undergoing cold-shock, leak check and pressure 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 needed at vendor.

Material has been released for Zanon. Nb tubes and Ti materials are on hold from FNAL to Zanon due to customs questions. 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 – Reached 3 x 10^10 at 18 MV/m with no field emission. Further testing to determine quench limit and flux expulsion is planned.

RI023 – Field emission at 7.5 MV/m – test aborted. Indication of doping due to low field Q-rise. Plan to disassemble, re-rinse and re-test.

Manufacturing drawings from RI and Zanon are under review (expected complete by 29-Jan) by JLab and FNAL SOTRs. Helium vessel weld joints counter-proposed by FNAL agreed by Zanon. Still awaiting helium vessel drawings from RI.

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. Inspecting sealing surfaces on end of GHRP. Received modified 50K thermal shields from FNAL.

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

Received SC quad magnet and leads from FNAL.

Received one set of magnetic shields from FNAL that were supposed to be shipped in December.

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 vendor visit (SSA's) last week was a success. Each amp was driven to full rated power (3.8 kW).  Coolant flow and output power interlocks verified.  Full factory test data provided.

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. Two short bellows expected from Epner (1/27, 2/2). Two short bellows expected from SLAC (1/29). Two long bellows are expected from SLAC (2/5) with two more expected later in February. SLAC colleagues are conducting material investigations of stainless steel used in bellows fabrication – a preliminary 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. Installation in mezzanine has started.

**QUALITY**

Below are some of the key topics we discussed in the QA Coordination meeting with Fermilab last week.

* We discussed the traceability of the Nb materials from DESY that are being shipped to the vendors for cavity fabrication. In general terms, the cavity vendors will follow a similar process to the XFEL project in maintaining material traceability. Pressure bearing components will be serialized accordingly and we expect the vendors to transfer or to keep track of any cross reference numbers as necessary that have been assigned to the material, i.e. any unique i.d. codes or Router Numbers from Fermilab.
* More discussions need to take place among the partner labs in the prospect of SLAC ‘approving’ Major NCRs. At the moment, Fermilab intends to send an NCR package on the GHRP to SLAC for review and feedback.
* JLab is awaiting a template on NCR Dashboard from Mike Skonicki.
* Discussions are on-going in the transfer of vendor documents between JLab and Fermilab. We will have a better understanding of the documents involved out of the NCR package that Fermilab is putting together for the GHRP.

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

Weekly Reporting

WBS 1.04.08 JLAB Cryoplant System

Week of January 22-28, 2016

**Issues:** None

**Accomplishments this week:**

The major warm helium compressor equipment consisting of heat exchangers, compressor bodies, motors, and frames have been placed on order by the assembly vendor. Billing was submitted and approved thus eliminating a schedule variance associated with late ordering in January 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. Engineering topics this past week included a preliminary presentation by the vendor for the heat exchanger design calculations. A plan to witness a performance test of the turbine brake system is also being schedule in March, shortly after the PDR.

A BCR was presented and approved for 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.

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. A meeting was held this past week to go over the comments which were resolved and the document is currently being revised for re-release and sign off.

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, Post PDR, March 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 22-28, 2016

**Issues:** None

**Accomplishments this week:**

**JLAB –** No report.