Weekly Reporting SNS PPU

WBS P.02.03 Cryomodule Integration (JLab Scope)

November 18, 2022

**Issues:** No report next week. Happy Thanksgiving to all!

**Accomplishments this week:**

Management:

* PPU activities are continuing onsite with testing of production cavities, continuing with cryomodule assembly, and receipt inspection of components.
* Off-site work efforts continue, focused on completion of original procurement activities, continuing procurements for 8th CM and production activities.
* Prepared and presented status at JLab Director’s Review on 15-NOV. Transmitted report to PPU colleagues at ORNL.

Engineering & Design:

* Sustaining engineering activities are continuing in order to revise drawing packages based on feedback during the procurement phase.
* Plan for transmitting complete set of CM drawings in progress.

Procurement:

* JLAB visited the end can vendor on 11/16 and witnessed leak check of REC 5 circuits.
* On the cool down valve galling, vendor found one such valves galls. The valve has been partially cut apart, it appears that the cause may simply be the tight fit between the stem and the guide. Vendor is going to disassemble, check tolerances and reassemble.
* ORNL advises that REC3 vacuum shells weld is not fully penetrated. Vendor says that they perform a TIG Root pass, inspect, then finish the weld flux-core.
* Supply End Cans (SECs):

|  |  |  |
| --- | --- | --- |
| S/N | Status | Estimated Delivery Date |
| 01 | Installed on CM-03 | - |
| 02 | Installed on CM-04 | - |
| 03 | Installed on CM-01 | - |
| 04 | Welded onto CM-05 | - |
| 05 | Welded onto CM-06 | - |
| 06 | Delivered to JLab on 6/6. Uncrated, inspections started. Phase 1 dimensional inspection done. Bridge tube angle is off by ~5 degrees. JLAB will try installation of SEC 06 and exercise loosening the hardware at both ends of the elbow/bellows and see how well it corrects. | - |
| 07 | Installed on CM-02 | - |
| 08 | SEC 08 is at the vendor's place. Machine shop has completed all work for SEC-08, parts moving through inspection. Top-Plate fit up ongoing. | Late Jan/early Feb |

* Return End Cans (RECs):

|  |  |  |
| --- | --- | --- |
| S/N | Status | Estimated Delivery Date |
| 01 | Installed on CM-03 |  |
| 02 | Installed on CM-01 |  |
| 03 | Delivered to ORNL 9/30. ORNL found the leak in the REC3 located to the 1/4" line from the 2K return (not the surge tank) near the top plate. They expect to repair and send to JLab in mid-December. |  |
| 04 | Installed on CM-02 |  |
| 05 | Cryogenic circuit HLT complete, no leaks found. Next steps, after the rest of the thermal shield is brazed on work will begin to place the ins vac jacket on, followed by the 90 deg piping bends, transfer tube/bridging tube, etc. | 12/15 |
| 06 | Installed on CM-04. |  |
| 07 | Fit-up continues but not ready for HLT. | Mid-Jan |
| 08 | REC 08 is at the vendor. 99% of machining is done. New shell to be complete, to work on the spools next. | TBD |

Production:

* Cavity Status:
* PPU-30t was rf tested and qualified for next CM.
* HB-62 is rf tested and was limited by high FE at 10 MV/m.
* PPU-31t is in preparation for RF test next week.
* Cavity String Status: String #8 – 3 of 4 cavities qualified.
* Cryomodule Status:
* CM05: Punch list items I.P. awaiting REC.
* CM06: Punch list items I.P. awaiting REC.
* CM07: mag shield installation on-going; welding FPC bellows I.P.
* Helium Vessel Update – Gathering parts for added HV’s.
* FPCs: Total of 10 FPCs in the Annex inventory area. Two FPCs in the clean room cabinet.

Project Management:

* Provided Director’s Review Data
* Provided Project Team with EV Data
* Updated CAM Notebook
* Started BCR 23-001

Quality Assurance:

* Continue to monitor quality data for possible trends.
* Early work gathering data deliverables for CM05 begins.

Project Photos: None.