



AMS-02 Weekly Activity Report, July 15, 2005

Upcoming Events:

- AMS Thermal Working Group (TWG) – July 20-22, 2005 – Geneva (CERN)
- AMS General Technical Interchange Meeting (TIM) with Phase II Safety Review Dry Run – July 25-29, 2005 – Geneva (CERN)
- Cryocooler Splinter Meetings (Tentative) – July 25-26 – Geneva (CERN)
- Cryocooler Electronics Meetings (Tentative) – July 28-29 – Zurich (ETH)
- Uninterruptible Power Supply (UPS) Critical Design Review (CDR) – August 8, 2005 – Taiwan
- USS-02 Extruded Beams Delivery – August 13, 2005
- STA Vacuum Case Delivery (on dock at STADCO) – September 29, 2005 (subject to weld inspection and review)
- AMS-02 Phase II Safety Review – Date TBD (Schedule under review) – JSC
- AMS-02 Technical Electronics Meeting (TEM) @ CSIST – September 26-30 – Taiwan

Upcoming Tests:

- High Rate Data Link (HRDL) Tests @ ISS Systems Integration Laboratory – July 2005 – JSC, Houston
- Interface Plate Static Test – Date TBD – Location TBD
- Lower Joint Static Test – Date TBD – Location TBD
- STA Sine Sweep Test – January 2006 – INFN, Terni, Italy
- STA Acoustic Test – April 2006 – ESTEC, Noordwijk, Netherlands
- Full Assembly Modal & Static Tests – May 2006 – IABG, Munich, Germany

General:

- Work is continuing on preparations for the Phase II Safety Review. Authors continue to update the component descriptions for inclusion in the Phase II Safety Data Package (SDP). A draft of the SDP, including the Hazard Reports, is being prepared for uploading to the JSC AMS website for review by members of the AMS Collaboration.

USS-02 and GSE Manufacturing:

- ESCG personnel are continuing to monitor progress on the extruded beams for the USS-02 at Alcoa. The dies for the extrusions were received at Alcoa on July 13 and manufacturing of the beams was scheduled to begin the following day. According to the Alcoa representative, the current on-dock delivery date is August 13. The schedule allows ample time for manufacturing and inspection by Alcoa Quality Assurance (QA) personnel. Although delivery is one month later than originally promised, there is enough margin in the schedule that this delay will not delay the start of USS-02 testing.



- Drawings for the Unique Support Structure – 02 (USS-02) Alignment Template were released from the Engineering Drawing Control Center (EDCC). Copies of the drawing were provided to the manufacturing planner in Bldg. 10.
- Inspection of the Payload Attach System/Ring Imaging Cherenkov Counter (PAS/RICH) Bracket was completed by QA and the bracket was sent for metal finish.
- The Center Body Box Tubes were buffed to remove the extrusion marks; however some small scratches and dings are still evident. Bldg. 10 shop personnel were directed to smooth them out.
- The Primary Support Structure (PSS) Diagonal Braces are currently in Bldg 10 QA for inspection.
- An interim disposition was prepared for a Discrepancy Report (DR) written against a Diagonal Brace Assembly for the Primary Support Stand (PSS). The machined piece (a plate) had a 0.5 inch gouge in the surface, the result of a machining error. The disposition calls for the plate to be removed and replaced, then continue with the machining process.

Vacuum Case:

- The Flight Vacuum Case (VC) was removed from the Shipping Fixture in Bldg 9 in preparation for work on the thermal blankets and protective inserts for the ribs on the Outer Cylinder. Prior to removal, a problem was discovered with the identification tags on the legacy Multi-Purpose Lift Fixture (MPLF) which delayed the work several hours. The lifting slings on the MPLF were not the correct part number for use with the VC. A Discrepancy Report (DR) was written slings, which was dispositioned by replacing the slings on the MPLF with the correct part number and proof loading the reconfigured MPLF assembly.
- Decals for the VC Shipping Fixtures and Inner Cylinder crates were received from the JSC Decal Lab. The decals will be applied to the shipping hardware pending a decision on the final locations for the identification labels.
- Welding of the Second Article (Conical Flange and Inner Cylinder) was successfully completed at STADCO. Processing of the X-rays is in work. ESCG personnel identified new locations for removing tensile test coupons and provided the data to STADCO.
- ESCG oversight of activity on the Structural Test Article (STA) VC at STADCO is continuing. Work on the STA VC is on schedule for a late September delivery.

GSE & STE:



- The Vacuum Case Test Fixture (VCTF) drawings were updated to incorporate redlines generated during manufacturing.
- Two DRs written against the eccentric bushings and wet installation of inserts were dispositioned and the DRs were closed.

Testing:

- The presentation for the Modal and Static Test of the AMS-02 Payload was updated and sent out for review on July 8. Comments are being incorporated as they are received from the reviewers.
- Work on the cable routing for the cryogenic accelerometers is on hold until a final decision is made on the cryosystem for the STA.
- The Sine Sweep Test layout drawings are being checked to verify the piece parts for the test setup.

Avionics:

- ESCG personnel in conjunction with AMS Collaboration personnel performed testing of the front-end data interface electronics for the AMS experiment in the ISS Systems Integration Laboratory (ISIL) located in Building 920A. The purpose of the week-long test was to attempt to re-create some issues with the High-Rate Comm Outage Recorder (HCOR) and the Automated Payload Switch (APS) that were encountered during the Functional Integration Test (FIT) performed at KSC in January. The problem involved loss of sync and drop-out of data; and was unexplained due to lack of insight into the Front-End Processor (FEP) used for the testing. The problem was not recreated until the test was run overnight, and at some point the fiber cable was reconfigured by a technician, resulting in a "dark fiber" situation at the HCOR. This recreated the signature. It is believed that a similar incident may indeed have triggered the discrepancy at KSC.
- Preparations for the Uninterruptible Power Supply (UPS) Battery pre-delivery acceptance (PDA) review is continuing. The JSC Energy Systems Division (EP) battery expert has agreed that expanding the battery test temperature range over the cell test temperature range based on thermal analysis is acceptable. The PDA is being conducted at the Yardney-Lithion facility in Pawcatuck, Connecticut on July 18.