

PRELIMINARY

STS-114 Delta L-2 Prelaunch Mission Management Team Meeting Minutes

The STS-114 Delta L-2 Prelaunch Mission Management Team (PMMT) Meeting was held at 2:00 p.m. on July 24, 2005, in the Kennedy Space Center Mission Briefing Room and via video teleconference with NASA Headquarters, Johnson Space Center, Marshall Space Flight Center, Langley Research Center, Glenn Research Center, Ames Flight Research Center, and Hamilton Sundstrand. Boeing - Huntington Beach, Patrick Air Force Base, Cape Canaveral Air Force Station, and Crew Quarters were connected via audio teleconference. N. Wayne Hale, Deputy Manager, Space Shuttle Program, chaired the meeting.

Several Elements and Projects gave verbal status only. The presenters were:

Systems Engineering and Integration – J. Muratore (NASA/JSC/MS),
S. Bauder (NASA/JSC/MS3),
C. Scott (NASA/KSC/MK-SIO)
Space Station – W. Gerstenmaier (NASA/JSC/OA)
Orbiter - D. White (USA/Houston/USH-601M)
Government Furnished Equipment – S. Poulos (NASA/JSC/MV)
Shuttle Processing – M. Leinbach (NASA/KSC/PH-A1),
J. Cipolletti (USA/KSC/USK-321)
Eastern Range - M. Gawel (45RANS/PAFB/DOS)
Launch Weather - K. Winters (45WS/CCAFS/DOR)
Landing Weather - D. Bellue (NASA/JSC/ZS8)
Safety Reliability & Quality Assurance – T. Wilcutt (NASA/JSC/MX),
D. Toton (NASA/JSC/MX)

Systems Engineering & Integration

Resolution of the liquid hydrogen engine cut off (ECO) sensor anomaly was presented. The end-to-end system troubleshooting, wiring assessment, point sensor box analysis, signal conditioner card circuit analysis, significant findings, remaining fault tree indeterminate blocks, connector pin swap, countdown ECO anomaly re-occurrence plan, launch or scrub decision process, and 3-of-4 sensor rationale for flight were reviewed and approved. Flight rationale for the ice ball that had formed on the External Tank (ET) liquid hydrogen feedline-to-tank interface, including analysis results, trajectories, and NSTS-08303 Ice/Debris Inspection Criteria update, was presented. Flight rationale was also reviewed for ice formations on the Ground Umbilical Carrier Plate (GUCP), presence of liquid nitrogen dripping from the GUCP purge shroud, and impact of two hazard reports (ET Vent Arm System Umbilical Malfunction and Ascent Debris Impact to the Space Shuttle Vehicle).

A dry run of the Day of Launch I-Load Update (DOLILU) showed a violation of the S9 Thermal Rule, which was created to protect the bipod area from excessive heating. The violation was caused by the greater than expected density changes in the 30-50,000 foot altitude region. A more recent violation also occurred at an altitude of 83,000 feet. Consequently, the extended density check will now envelope altitudes as high as 100,000 feet and exist in the contingency procedure should another DOLILU violation occur. Forty micron-sized dust particles in the atmosphere from a sandstorm in the African Sahara Desert have been assessed and pose no threat to STS-114 launch.

Space Station

Move of the Soyuz to another docking port was successfully completed. Engineering assessment of Contingency Shuttle Crew Support (CSCS) remained at 56 days.

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Orbiter

ECO system point sensor box, serial number 110, has completed acceptance testing and is ready for use on OV-104. Three Power, Reactant, Supply, and Distribution (PRSD) cryogenic storage tank annulus vacuum measurements indicated zero raising a concern for vacuum-ion pump failures. Analysis showed that even with a pump converter failure, vacuum is maintained in the annulus for at least 90 days. There is no Launch Commit Criteria violation and the non-conformance will be deferred for post flight troubleshooting.

Shuttle Processing

Launch countdown summary, ground camera locations, scrub turnaround options, and landing site operations status were reviewed. Status was given on open Interim Problem Reports; all will be closed prior to tanking. Launch On Need (LON) OV-104 was mated to the External Tank on July 22, 2005, and is undergoing the planned change out of Space Shuttle Main Engine #1. New LON date is now August 23, 2005.

Eastern Range

Range safety equipment that experienced component failures have been repaired, reverified, and returned to service with the exception of the Abort Advisory Switch, which is still partially mission-capable. A work-around plan has been developed. There were no constraints to launch.

Weather

Weather forecasts for launch and contingency landing sites were presented.

Safety and Mission Assurance (S&MA)

Two notes in the anonymous suggestion box concerning the ECO sensor rationale for flight and the iceball on the External Tank liquid hydrogen feedline were discussed and dispositioned. Hazard reports, critical items lists, and certification of hardware requirements have been reviewed and closed. There were no constraints to launch.

Exceptions

All exceptions had been closed prior to the meeting.

Actions

No new actions were assigned.

Mr. Hale polled the principal managers and organizations; all responded ready to support the STS-114 mission.

N. Wayne Hale, Jr.
Deputy Manager, Space Shuttle Program

Enclosure:

1. Agenda