KSC Safety Involvement with ELV Payloads Processed at Kennedy Space Center

NASA ELV PAYLOAD SAFETY & MISSION SUCCESS CONFERENCE

ISS/Payload Processing
Safety Assurance Branch
Pam Hales

November 16-18, 2004

Santa Barbara, California
Agenda

- KSC PAYLOAD PROCESSING FACILITIES
- PAYLOAD OPERATIONAL PROCEDURE REQUIREMENTS
- PAYLOAD PROCESSING OPERATIONS INFORMATION
KSC PAYLOAD PROCESSING FACILITIES

- PAYLOAD HAZARDOUS SERVICING FACILITY (PHSF)
  - Ordnance installation
  - Hypergol system loading
  - Hoisting loaded spacecraft
  - Mate to solid propellant upper stage
  - Safety Systems in place

- MULTI-PAYLOAD PROCESSING FACILITY (MPPF)
  - Solely a payload processing facility
KSC PAYLOAD PROCESSING FACILITIES
PHSF
PAYLOAD OPERATIONAL PROCEDURE REQUIREMENTS

- REVIEWED TO KNPR 8715.3
  - Identifies which operations are considered hazardous
  - Specifies required procedural controls
  - Requires on-the-shelf time for hazardous procedures
  - Requires documentation of real time changes
  - ALSO REVIEWED TO VERIFY PROCEDURAL HAZARD CONTROLS IDENTIFIED IN MSPSP ARE PRESENT
PAYLOAD PROCESSING OPERATIONS INFORMATION

- KSC Safety attends daily test team meetings
- KSC Safety participates in hazardous operations
  - 24 hours advanced notice
  - Verify operational hazard controls identified in MSPSP are in place
  - Give final concurrence to proceed with hazardous operations
- Interface with support entities during operation and in case of emergency
- Review and approve changes to planned operations
- Give concurrence to open control area when hazardous operations are complete
PAYLOAD PROCESSING
OPERATIONS INFORMATION

• PAST ISSUES
  – Working under suspended load
  – Traceability of sling components after proofload
  – Control of plastics, foams, and adhesives
  – Control area discipline
  – Electrical equipment left powered up and unattended overnight in highbay
MER FLIGHT HARDWARE
ARRIVAL

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MER FLIGHT HARDWARE
OFFLOAD
FLIGHT HARDWARE INSPECTION AFTER ARRIVAL
MER ROVER AND CRUISE STAGE IN PHSF
MER ROVER CHECKOUT IN PHSF
MER ROVER MOBILITY & MANEUVERABILITY TESTING
MER PREPARING FOR FLIGHT
STOW

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HOISTING ENTRY VEHICLE TO SPIN TABLE
MER MATE TO DELTAL II
THIRD STAGE
MER ENCAPSULATION
MER ENCAPSULATION COMPLETE
MER INSIDE TRANSport
Canister Transfer to PAD
MER HOIST AT PAD 17
MER MATE TO DELTA II SECOND STAGE AT PAD
FAIRING INSTALLATION AT PAD 17
MER MISSION READY FOR LAUNCH
MER/DELTA II LIFTOFF