

## SRB CRITICAL ITEMS LIST

SUBSYSTEM: ELECTRICAL AND INSTRUMENTATION

ITEM NAME: SRB OF Watertight Reusable Cable X21W3R P1/P2, X21W4R P1/P2 and X21W5R P1/P2  
(SRB Chamber Pressure Sensor Input Power)

PART NO.: 10400-0048 FM CODE: A02  
10400-0049  
10400-0050

ITEM CODE: 50-04-X21 REVISION: Basic

CRITICALITY CATEGORY: 1R REACTION TIME: Seconds

NO. REQUIRED: 1 each DATE: March 1, 1995

CRITICAL PHASES: Boost SUPERCEDES: March 1, 1994

FMEA PAGE NO.: D-699 ANALYST: R. Smith/A. Craft

SHEET 1 OF 2 APPROVED: P. Kalia

**FAILURE MODE AND CAUSES:** Loss of power to two of three SRM Chamber Pressure Sensors in two out of three cables due to:

- o One pin or wire open caused by: open crimp, open wire, broken/bent pin, unseated pin, broken pin locking mechanism, corroded pin.
- o One pin or wire short to ground caused by: bent pin, contamination in connector, insulation breakdown, frayed shielding, abraded or cut insulation.
- o Loss of connector caused by: connector not fully mated, improperly safety wired, improperly torqued, defective threads, mechanical overstress.

**FAILURE EFFECT SUMMARY:** Loss of two of three SRM Chamber Pressure Sensors results in premature separation cue leading to loss of mission, vehicle and crew. One success path remains after the first failure. Operation is not affected until both paths are lost.

### REDUNDANCY SCREENS AND MEASUREMENTS:

- 1) Pass - All cables are system tested during ground turnaround sequence.
- 2) Pass - SRB Chamber Pressure A, B and C measurements B47P1300C through B47P1302C.
- 3) Pass - No credible causes.

RATIONALE FOR RETENTION:

- A. DESIGN Per Appendix A Section # II
  
- B. TESTING
  - 1) VENDOR RELATED Per Appendix B Section # IA
  
  - 2) KSC RELATED Per Appendix B Section # IIB
  
  - 3) SYSTEM/ UNIQUE FUNCTIONAL

Cables are tested during SIT per OMRSD File II, Vol. 1, requirement number S00000.450 (SRM Chamber Pressure Sensor Test). (Open, Short or Loss of Connector)

The last time cables are tested is during final countdown per OMRSD File II, Vol. 1, requirement number S00FF0.180 (SRM Chamber Pressure Bias and Calibration Check). (Open, Short or Loss of Connector)

C. INSPECTION

- 1) VENDOR RELATED Per Appendix C Section # I (Crimped Connector)
  
- 2) KSC RELATED Per Appendix C Section # IIB

D. FAILURE HISTORY

Failure Histories may be obtained from the PRACA database.

E. OPERATIONAL USE

Not applicable to this failure mode.