

SRB CRITICAL ITEMS LIST

SUBSYSTEM: ELECTRICAL AND INSTRUMENTATION

ITEM NAME: SRB OF Nonwatertight Reusable Cables X31W15R J2/P1, 131W16R J2/P1 (231W16R J2/P1) and X31W17R J2/P1 (SRM Chamber Pressure Sensors input power)

PART NO.: 10400-0068
10400-0104 (10400-0115)
10400-0069

FM CODE: A09

ITEM CODE: 50-04-X31

REVISION: Basic

CRITICALITY CATEGORY: IR

REACTION TIME: Seconds

NO. REQUIRED: 1 each

DATE: March 1, 1995

CRITICAL PHASES: Boost

SUPERCEDES: March 1, 1994

FMEA PAGE NO.: D-725

ANALYST: R. Smith/ A. Craft

SHEET 1 OF 2

APPROVED: P. Kalia

FAILURE MODE AND CAUSES: Loss of input 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 input power to two of three SRM Chamber Pressure Sensors resulting 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 - SRM Chamber Pressure measurements B47P1300C through B47P1302C.
- 3) Pass - No credible causes.

RATIONALE FOR RETENTION:

- A. DESIGN Per Appendix A Section # V

- B. TESTING
 - 1) VENDOR RELATED Per Appendix B Section # IA

 - 2) KSC RELATED Per Appendix B Section # IIA

 - 3) SYSTEM/ UNIQUE FUNCTIONAL

Cables are tested during ACO per 10REQ-0021, para. 1.2.2.19.2 (Chamber Pressure Circuit Verification). (Open, Short or Loss of connector)

Cables are tested per OMRSD File II, Vol. 1, requirement number S00000.450 (SRM Chamber Pressure Measurement). (Open, Short, or Loss of connector)

The last time the cables are tested is at 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 # IIA

D. FAILURE HISTORY

Failure Histories may be obtained from the PRACA database.

E. OPERATIONAL USE

Not applicable to this failure mode.