

SRB CRITICAL ITEMS LIST

SUBSYSTEM: ELECTRICAL AND INSTRUMENTATION

ITEM NAME: SRB OF Nonwateright Reusable Cables 131W14R P1/P3 and X31W17R P1/P3 [Rate Gyro 1 (LSRB), and 3 (LSRB), Input Power]

PART NO: 10400-0949
10400-0069

FM CODE: A05A

ITEM CODE: 50-04-X31

REVISION: Basic

CRITICALITY CATEGORY: IR

REACTION TIME: Immediate

NO. REQUIRED: 1 each 131W14R
1 each X31W17R

DATE: March 1, 1995

CRITICAL PHASES: Boost, Separation

SUPERCEDES: March 1, 1994

FMEA PAGE NO: D-718A

ANALYST: R. Smith/A. Craft

SHEET 1 OF 2

APPROVED: P. Kalia

FAILURE MODE AND CAUSES: Loss of Orbiter Bus B and Bus C (left SRB) power at RGAs in both cables due to:

- o One pin or wire short to ground caused by: bent pin, contamination in connector, insulation breakdown, frayed shielding, abraded or cut insulation.

FAILURE EFFECT SUMMARY: Loss of OI Bus B and C power results in loss of 2 of 3 chamber pressure sensors resulting in premature separation. Loss of mission, vehicle and crew.

REDUNDANCY SCREENS AND MEASUREMENTS:

- 1) Pass - All cables are system tested during ground turnaround sequence.
- 2) Pass - Voltage measurements B47P1301C, B47P1302C, and B76V1601C.
- 3) Pass - No credible causes.

RATIONALE FOR RETENTION:

A. DESIGN Per Appendix A Section # Y

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. 1.2.2.19.1 (Rate Gyro Assembly Power on and SMRD Test). (All) (short)

Cables are tested per OMRSD File II, Vol. 1, requirement numbers S00000.640 and S00000.643 (SRB Rate Gyro Power ON/SMRD/Null Test and RGA Torque Test). (Short)

Cables are again tested during final countdown per OMRSD File II, Vol. 1, requirement numbers S00FF0.230 (RGA Torque Test). (Short)

C. INSPECTION

- 1) VENDOR RELATED Per Appendix C Section # 1A.2 (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.