

SRB CRITICAL ITEMS LIST

SUBSYSTEM: ELECTRICAL AND INSTRUMENTATION

ITEM NAME: SRB OF Nonwatertight Reusable Cables 131W413R P6 (231W413R P6), and 131W414R P5 (231W414R P5) (RSS IRD A and IRD B Power)

PART NO.: 10400-0108 (10400-0119)  
10400-0109 (10400-0120)

FM CODE: A18

ITEM CODE: 50-04-X31

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-743

ANALYST: R. Smith/A. Craft

SHEET 1 OF 2

APPROVED: P. Kalis

FAILURE MODE AND CAUSES: Loss of Range Safety IRD A and IRD B power in both 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: failure of locking mechanism, connector not fully mated, mechanical overstress.

FAILURE EFFECT SUMMARY: Loss of power to both IRD A and IRD B results in loss of SRB destruct capability should it break away from the cluster leading to loss of life or injury to the public.

REDUNDANCY SCREENS AND MEASUREMENTS:

- 1) Pass - All cables are system tested during ground turnaround sequence.
- 2) Pass - Decoder On measurements B55X1871X and B55X1872X.
- 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. 1.2.2.15.2 (Arm/Fire Circuitry Verification). (Open, Short or Loss of connector)

Cables are tested at the launch pad per OMRSD File II, Vol. 1, requirement number B55FR0.012 (RSS Power-up Test).

Last time cables are tested is at final countdown per OMRSD File II, Vol. 1, requirement number S00FH0.031. (RSS activation/ verification for launch)

C. INSPECTION

1) VENDOR RELATED Per Appendix C Section # I (Crimped Connector)

2) KSC RELATED Per Appendix C Section # IIA 1,2,3,4 and 9

D. FAILURE HISTORY

Failure Histories may be obtained from the PRACA database.

E. OPERATIONAL USE

Not applicable to this failure mode.