

SRB CRITICAL ITEMS LIST

SUBSYSTEM: ELECTRICAL AND INSTRUMENTATION

ITEM NAME: SRB OF Coax Cables X31A32W3R P1/P2 and X31A32W4R P1/P2 (RF Command Signals From the Hybrid Coupler to IRD A and IRD B)

PART NO.: 10400-0083,
10400-0084

FM CODE: A25

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-755

ANALYST: R. Smith/A. Craft

SHEET 1 OF 2

APPROVED: P. Kalia

FAILURE MODE AND CAUSES: Loss of RF command signals from the Hybrid Coupler to IRD A and IRD B in both cables due to:

- o One pin or wire open caused by: open crimp, open wire, broken/bent pin, 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 RF command signal path from Hybrid Coupler to 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. 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 - Receiver strength B55E1100C and B55E1101C.
- 3) Pass - No credible causes.

RATIONALE FOR RETENTION:

A. DESIGN Per Appendix A Section # VI

B. TESTING

1) VENDOR RELATED Per Appendix B Section # IC

2) KSC RELATED Per Appendix B Section # IIA

3) SYSTEM/ UNIQUE FUNCTIONAL

Cables are tested for Insertion loss after installation per 10REQ-0021, paras. 1.2.1.1.3. (Open, Short or Loss of Connector)

Cables are tested per 10REQ-0021, para. 1.2.2.13.3 (Range Safety System Verification) during ACO RSS loop test. (Open, Short or Loss of Connector.)

Cables are tested by SPC during Ordnance Installation/Connection per OMRSD File II, Vol. 1, requirement number S00000.380 (RSS Open Loop Test). (Open, Short or Loss of Connector)

The last time cables are checked is at Final Countdown at T-50 minutes, per OMRSD File II, Vol. 1, requirement number S00FHO.031 when Eastern Test Range brings up RSS Carrier for launch. (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.