

SRB CRITICAL ITEMS LIST

SUBSYSTEM: ELECTRICAL AND INSTRUMENTATION

ITEM NAME: SRB OF Coax Cables X31W403R P1/P2 and X31W404R P1/P2 or X31A32W6R P1/P2 (RSS A and B RF Signals from RSS Antennas A and B to Hybrid Coupler)

PART NO.: 10400-0070, 10400-0071
10400-0085

FM CODE: A16

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-739

ANALYST: R. Smith/A. Craft

SHEET 1 OF 2

APPROVED: P. Kalia

FAILURE MODE AND CAUSES: Loss of RF signals from Range Safety A and B Antennas to Hybrid Coupler 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 antenna coverage for one SRB 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) Fail - Not verified.
- 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 X31A32W6R, X31W403R and X31W404R are tested during ACO open loop test per 10REQ-0021, para. 1.2.2.13.2 and 1.2.2.13.3. (Open, Short or Loss of Connector.)

All cables are tested per OMRSD File II, Vol. 1, requirement number S00FH0.031, S00000.380. (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 S00FH0.031 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.