

SRB CRITICAL ITEMS LIST

SUBSYSTEM: ELECTRICAL AND INSTRUMENTATION

ITEM NAME: SRB ESS/ET Sensor Cables, X32W401 P1/P2, X32W402 P1/P2

PART NO: 10400-0089/0090

FM CODE: A02

ITEM CODE: 50-04-X32

REVISION: BASIC

CRITICALITY CATEGORY: 1R

REACTION TIME: Seconds

NO. REQUIRED: 1 each

DATE: August 31, 1998

CRITICAL PHASES: Boost

SUPERCEDES: N/A

FMEA PAGE NO.: D-763

ANALYST: W. Chitwood/W. McBas

SHEET 1 OF 2

APPROVED: P. Kalia

FAILURE MODE AND CAUSES: Loss of Arm and Fire commands electrical path from or to the other SRB in both cables.

- o One pin or wire open caused by: open crimp or solder, open wire, broken/bent pin, unsecured 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 P1 caused by: failure of locking mechanism, connector not fully mated, improperly safety wired, mechanical overstress.
- o Loss of connector P2 caused by: connector not fully mated.

FAILURE EFFECT SUMMARY: Loss of two of four command paths for SRB when clustered for functions 1-4 leading to the loss of capability to destruct the vehicle.

REUNDANCY SCREENS AND MEASUREMENTS:

- 1) Pass - All cables are system tested during ground turnaround sequence.
- 2) Fail - Not verified.
- 3) Pass - No credible causes.

FM Code: 50-04-X32 -A02

Date: August 28, 1998

RATIONALE FOR RETENTION:

A. DESIGN Per Appendix A Section # III, IV

B. TESTING

1) VENDOR RELATED Per Appendix B Section # IA2) KSC RELATED Per Appendix B Section # IIA3) SYSTEM/ UNIQUE FUNCTIONAL

Cables are tested during ACO per 10REQ-0021, para. 1.2.2.15.2 (RSS Arm and Fire Circuitry Verification and Cross-strapped Arm/Fire circuitry verification). (Open, Short or Loss of Connector)

After transfer to SPC, cables are tested per OMRSD File II, Vol. 1, requirement S00000.200, 210, 220, and 230 (Open, Short, Loss of Connector).

Cables are again tested during Final Ordnance Installation and connection per OMRSD File II, Vol. 1, requirement number S00000.380 and 390 (Open, Short or Loss of Connector).

The last time the cables are checked is during Final Countdown per OMRSD File II, Vol. 1, requirement number S00FA0.031 (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.