

SRB CRITICAL ITEMS LIST

SUBSYSTEM: ELECTRICAL AND INSTRUMENTATION

ITEM NAME: SRB OF Watertight Reusable Cable X13W1R P1/P2 and X13W5R P1/P2 (Pneumatic Pressurization System)

PART NO.: 10400-0017  
10400-0021

FM CODE: A02A

ITEM CODE: 50-04-X13

REVISION: Basic

CRITICALITY CATEGORY: 1R

REACTION TIME: Immediate

NO. REQUIRED: 1 each

DATE: March 1, 1995

CRITICAL PHASES: Boost

SUPERCEDES: March 1, 1994

FMEA PAGE NO.: D-659A

ANALYST: R. Smith/ A. Craft

SHEET 1 OF 2

APPROVED: P. Kalia

FAILURE MODE AND CAUSES: Loss of input power to Pneumatic Pressurization System 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 ORE Bus A and Bus B Power results in loss of Thrust Vector Control and Separation capability, leading to loss of mission, vehicle and crew. 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 - Voltage measurements B76V1600C and B76V1601C.
- 3) Pass - No credible causes.

**RATIONALE FOR RETENTION:**

**A. DESIGN Per Appendix A Section # II**

**B. TESTING**

1) **VENDOR RELATED Per Appendix B Section # IA**

2) **KSC RELATED Per Appendix B Section # IIIB**

3) **SYSTEM/ UNIQUE FUNCTIONAL**

Cables are tested during ET/SRB strut electrical mate per OMRSD File V, Vol. I B75BUO.010 (Power Bus A & B isolation test) (Short)

Cables are again tested during SIT per OMRSD File II, Vol. I, S00000.470. (Power Bus A & B transfer verification) (Short).

Last time cables are checked is during Final countdown per File II, Vol. I S00FRO.070 (APU startup) (Short).

**C. INSPECTION**

1) **VENDOR RELATED Per Appendix C Section # I**

2) **KSC RELATED Per Appendix C Section # IIIB**

**D. FAILURE HISTORY**

Failure Histories may be obtained from the PRACA database.

**E. OPERATIONAL USE**

Not applicable to this failure mode.