CRITICAL ITEMS LIST (CIL)

SYSTEM:	ASI	FUNCTIONAL CRIT:	1
SUBSYSTEM:	Electrical Cable Trays	PHASE(S):	b
REV & DATE:	J, 12-19-97	HAZARD REF:	S.11
DCN & DATE:			
ANALYSTS:	J. Hicks/E. Howell		

FAILURE MODE: Structural Failure

FAILURE EFFECT: b) Loss of mission and vehicle/crew due to ET structural failure or debris source to Orbiter from fairing.

TIME TO EFFECT: Immediate

FAILURE CAUSE(S): A: Improper Manufacture
B: Failure of Attaching Hardware

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Fairing to protect cables routed between crossbeam and LH vertical strut.

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY
4.3.82.1	80911071822-009	Cable Tray Fairing	1	LWT-54 & Up

REMARKS:

SYSTEM:	ASI	REV & DATE:	J, 12-19-97
SUBSYSTEM:	Electrical Cable Trays	DCN & DATE:	
FMEA ITEM CODE(S):	4.3.82.1		

RATIONALE FOR RETENTION

DESIGN:

A, B: The cable tray fairing details are machined from aluminum alloy 2219-T87, 2219-T62 plate; 2219-T87, 2219-T62 sheet; and 6061-T6511 extrusion . Materials selected for this part number are in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. Surface integrity is assured by penetrant inspection per STP2501.

A: The fairing is designed to the required yield (1.1) and ultimate (1.4) safety factors (ET Stress Report 826-2188).

B: The attaching hardware is selected from the Approved Standard Parts List (ASPL 826-3500). The hardware is installed per STP2014 and torqued using values specified on Engineering drawings. Tensile installation loads are sufficient to provide screening for major flaws in individual fasteners.

TEST:

The Cable Tray Fairing is certified. Reference HCS MMC-ET-TM08-L-S048 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S517 (LWT-89 & Up).

Vendor:

B: Attaching fasteners are procured and tested to standard drawings 26L3, 33L1 and 33L3.

INSPECTION:

Vendor Inspection-Lockheed Martin Surveillance:

A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911071822 and standard drawings 26L3, 33L1 and 33L3).

A: Inspect dimensional conformance (drawing 80911071822).

A: Penetrant inspect part (drawing 80911071822 and STP2501 Type 1, Method A).

MAF Quality Inspection:

B: Inspect that attaching hardware is free from damage (drawing 80911071809 and STP2014).

A, B: Verify installation and witness torque (drawing 80911071809 and STP2014).

FAILURE HISTORY:

Current data on test failures, unexplained anomalies and other failures experienced during ground processing activity can be found in the PRACA data base.