

CRITICAL ITEMS LIST (CIL)

SYSTEM: Venting
 SUBSYSTEM: Aft Cable Trays
 REV & DATE: J, 12-19-97
 DCN & DATE:
 ANALYSTS: P. Gandhi/E. Howell

FUNCTIONAL CRIT: 1
 PHASE(S): a
 HAZARD REF: P.04

FAILURE MODE: Blockage
 FAILURE EFFECT: a) Loss of mission and vehicle/crew due to hazardous gas condition causing fire/explosion.
 TIME TO EFFECT: Seconds
 FAILURE CAUSE(S): A: Foreign Obstruction
 B: Undersize Drifice
 REDUNDANCY SCREENS: Not Applicable
 FUNCTIONAL DESCRIPTION: Provides a controlled vent area to enable Orbiter purge gases to escape.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
7.4.3C.1	80911031846-002	Orifice, Vent (LD2 Umbilical)	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: Venting
SUBSYSTEM: Aft Cable Trays
FMEA ITEM CODE(S): 7.4.30.1

REV & DATE: J, 12-19-97
DCM & DATE:

RATIONALE FOR RETENTION

DESIGN:

The LO2 umbilical fairing is purged with nitrogen gas per ICD-2-0A002 to avoid build-up of hazardous gases. The nitrogen purge gas is controlled by a 0.03 square inch orifice per ICD-2-12001, inserted in a seal (rubber dam) placed just below the umbilical in the cable tray. The purge gas then vents out of the LO2 cable tray compartment via a vent hole (.750 inch diameter).

B: Engineering drawing 80911031846 specifies fabrication requirements for the LO2 umbilical cable tray orifice vent.

TEST:

The Orifice, Vent (LO2 Umbilical) is certified. Reference HCS MMC-ET-TM08-L-S161 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S517 (LWT-89 & up).

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

B: Verify dimensions (drawing 80911031846).

MAF Quality Inspection:

A: Inspect (visually) cleanliness during installation (drawing 80911031849).

A: Inspect (visually) vent areas for no obstruction (MMC-ET-TM04k and drawing 80900000008).

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.