

CRITICAL ITEMS LIST (CIL)

SYSTEM: Venting
 SUBSYSTEM: Aft Cable Trays
 REV & DATE: J, 12-19-97
 DCN & DATE:
 ANALYSTS: P. Ghanchi/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 Orifice
 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>
7.4.29.1	80911031846-002	Orifice, Vent (LH2 Umbilical)	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

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RATIONALE FOR RETENTION

DESIGN:

The LH2 umbilical fairing is purged with helium gas per ICD-2-0A002 to avoid build-up of hazardous gases. The helium purge gas is controlled by a 0.03 sq. 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 to the atmosphere through the LH2 cable tray compartment via a vent hole (.750 inch dia.).

B: Engineering requirements (drawing 80911031846) assure that the LH2 umbilical orifice will be fabricated to the required dimensions.

TEST:

The Orifice, Vent (LH2 Umbilical) is certified. Reference MCS MMC-ET-TM08-L-5161 (LWT-54 thru 88) and MCS MMC-ET-TM08-L-5517 (LWT-89 & Up).

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

B: Verify dimensions (drawing 80911031846).

MAF Quality Inspection:

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

A: Inspect (visually) for freedom of 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.