

CRITICAL ITEMS LIST (CIL)

SYSTEM: Propulsion/Mechanical FUNCTIONAL CRIT: 1
 SUBSYSTEM: Ground Umbilical Carrier Assembly PHASE(S): a
 REV & DATE: J, 12-19-97 HAZARD REF: P.04
 DCN & DATE:
 ANALYSTS: J. Attar/H. Claybrook

FAILURE MODE: Blockage
 FAILURE EFFECT: a) Loss of mission and vehicle/crew due to fire/explosion.
 TIME TO EFFECT: Seconds
 FAILURE CAUSE(S): Foreign Obstruction
 REDUNDANCY SCREENS: Not Applicable
 FUNCTIONAL DESCRIPTION: Regulates the passage of GHe to purge the GUCA cavity.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
2.14.6.1	57L1-8-048	Helium Purge Orifice	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

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RATIONALE FOR RETENTION

DESIGN:

The orifice is installed on the ground umbilical carrier plate and provides controlled helium flow from the launch site ground facility pneumatic system to the intercavity. The orifice is fabricated from 304 CRES. Selection for usage was based on design and operational experience and its capability to meet ET requirements for Class 3 Threads. The orifice is designed to meet the required ultimate (2.0) and yield (1.5) safety factor for pressure (ET Stress Report 826-2188). Material selected in accordance with MMC-ET-SE16 and controlled per MMMA approved product assurance plan assures conformance of composition, material compatibility and properties. The orifice is selected from the Approved Standard Parts List (ASPL 826-3500). Procurement of the orifice is governed by material, fabrication, processing, and inspection specification per MMC Standard 57L1. A facility filter is provided immediately upstream of the orifice.

TEST:

The orifice is qualified as a subassembly of the ground umbilical carrier assembly. Reference C00 MMC-ET-TM06-038.

INSPECTION:

Launch Site:

Inspect visually for freedom of damage and contamination during refurbish (OMI T6148).

Verify installation (drawings 82629021000, 82629021109 and OMIs T1147 and T6148).

Inspect (visually) for no blockage during GUCP purge connection (OMI T1147).

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.