

CRITICAL ITEMS LIST (CIL)

SYSTEM: Propulsion/Mechanical
 SUBSYSTEM: Helium Inject
 REV & DATE: J, 12-19-97
 DCN & DATE:
 ANALYSTS: J. Attar/H. Claybrook

FUNCTIONAL CRIT: 1
 PHASE(S): a, b
 HAZARD REF: P.02

FAILURE MODE: Leakage

FAILURE EFFECT: a) Loss of mission and vehicle/crew due to fire/explosion.
 b) Loss of mission and vehicle/crew due to fire/explosion.

TIME TO EFFECT: Seconds

FAILURE CAUSE(S): A: Structural Failure
 B: Disengagement of Adapter

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: Connects thermal insulated tube assy to the LO2 feedline elbow cover plate.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
2.4.29.1	57L6-4J	Adapter	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

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RATIONALE FOR RETENTION

DESIGN:

The adapter is installed in the boss provided for helium injection on the L02 feedline elbow cover plate.

- A: The adapter is fabricated from 304 CRES and meets the required ultimate (4.0) and yield (1.25) safety factors for pressure (ET Stress Report 826-2188). Material selected in accordance with MMC-ET-SE16 and controlled per MMA Approved Vendor Product Assurance Plan assures conformance of composition, material compatibility and properties. Procurement is governed by material, fabrication, processing, and inspection specification per MMC standard 57L6. The adapter was selected based on operational experience and its capability to meet ET requirements for Class 3 threads and leakage performance. Installation loads are sufficient to provide screening for major flaws.
- B: The adapter is installed and torqued as specified on the engineering installation drawing and is lockwired to preclude disengagement.

TEST:

The Adapter is certified. Reference HCS MMC-ET-TM08-L-P015.

Acceptance:

MAF - (Vehicle Assembly):

- A, B: Perform leakage test (MMC-ET-TM04k).

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A: Verify materials selection and verification controls (MMC-ET-SE16 and Standard drawing 57L6).

MAF Quality Inspection:

- B: Verify installation and witness torque (drawing 80921011930).
- A, B: Witness leakage test (MMC-ET-TM04k).

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.