

CRITICAL ITEMS LIST (CIL)

SYSTEM: ASI
 SUBSYSTEM: Intertank
 REV & DATE: J, 12-19-97
 DCN & DATE:
 ANALYSTS: H. Keefe/E. Howell

FUNCTIONAL CRIT: 1
 PHASE(S): b
 HAZARD REF: S.11

FAILURE MODE: Structural failure
 FAILURE EFFECT: b) Loss of mission and vehicle/crew due to structural failure of LH2 tank or debris source to orbiter.
 TIME TO EFFECT: Immediate
 FAILURE CAUSE(S): A: Improper Manufacture
 B: Failure of Attaching Hardware
 REDUNDANCY SCREENS: Not Applicable
 FUNCTIONAL DESCRIPTION: Provides aerodynamic protection to forward GH2 pressurization line elbow.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
4.2.10.1	80911001317-009	Fairing Assy GH2 Pressline	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: ASI
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RATIONALE FOR RETENTION

DESIGN:

- A, B: The fairing is an integrally formed fairing and bracket structure fabricated of laminated graphite/epoxy composite. Materials are selected in accordance with MMC-ET-SE16 which assures repetitive conformance of composition and properties. The GH2 pressurization line fairing and attaching hardware are designed to the required ultimate safety factor of 1.4 (ET Stress Report 826-2188).
- B: Attaching hardware is selected from the Approved Standard Parts List (ASPL 826-3500), installed per STP2014 and torqued using values specified on Engineering drawings. Combined tensile and torsional installation loads provide a flaw screening test for individual fastener assemblies.

TEST:

The Fairing Assy GH2 pressline is certified. Reference HCS MMC-ET-TM08-L-S183 (LWT-54 thru 88) and HCS MMC-ET-TM08-L-S512 (LWT-89 & Up).

Vendor:

- B: Attaching fasteners are procured and tested to Standard drawings 26L3.

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

- A, B: Verify materials selection and verification controls (MMC-ET-SE16, drawing 80911001317 and Standard drawing 26L3).

Lockheed Martin Procurement Quality:

- A: Verify cured laminate physical properties (STM-H-693).
- A: Verify the following cured dry laminate mechanical properties; short beam shear, flexural strength and flexural modulus (STM-H-693).
- A: Inspect for delamination, debond, cracks, scratches or cuts, porosity, wrinkles (STP7501).
- A: Verify fiber volume, short beam shear, flexural strength, flexural modulus and microscopic examination (STP7501).
- A: Verify dimensional conformance (drawing 80911001317).

MAF Quality Inspection:

- A, B: Verify installation and witness torque (drawing 80911001319).
- B: Verify attaching hardware is free from damage (drawing 80911001319 and STP2014).
- B: Verify locking feature (drawing 80911001319 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.