

CRITICAL ITEMS LIST (CIL)

SYSTEM: Electrical
 SUBSYSTEM: GH2 Pressurization System
 REV & DATE: J, 12-19-97
 DCN & DATE:
 ANALYSTS: J. McCardle/T. McKeough/A. Oser

FUNCTIONAL CRIT: 1
 PHASE(S): a, b
 HAZARD REF: S.06, S.09

FAILURE MODE: Leakage
 FAILURE EFFECT: a,b) Loss of mission and vehicle/crew due to fire/explosion from GH2 leakage.
 b) Loss of mission and vehicle/crew due to fire/explosion when relief valve opens.
 TIME TO EFFECT: Minutes
 FAILURE CAUSE(S): Defective Hose
 REDUNDANCY SCREENS: Not Applicable
 FUNCTIONAL DESCRIPTION: Connects the inlet port of the pressure transducer to the tank outlet port.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
3.4.8.1	32L8-1	Flexible Hoses	2	LWT-54 & Up
3.4.9.1	32L8-2	Flexible Hoses	2	LWT-54 & Up

REMARKS: These items are grouped since the failure mode and Rationale for Retention are the same.

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RATIONALE FOR RETENTION

DESIGN:

The flexible hose is designed and fabricated to Lockheed Martin Standard Drawing 32L8. These hoses provide a connection between the tank pressure ports and transducers.

The flex hoses are fabricated using helically convoluted TFE62 Teflon Tubing which is reinforced with a Nomex aramid fiber per MIL-C-572 Type PAA or MIL-I-24204. The tubing is then wrapped with Nomex aramid fiber. These hose assemblies are designed to operate in temperatures ranging from -65° to +500°F.

TEST:

The Flexible Hoses are qualified. Reference HCS MMC-ET-TM08-E007.

The 32L8 hoses are qualified by analysis and similarity to the 32L3 hoses which were tested during the higher level ullage pressure transducer qualification test.

Vendor:

Perform Proof Pressure Test (Lockheed Martin Standard 32L8).

Perform Leakage Test (Lockheed Martin Standard 32L8).

Perform Destructive Sample Testing on one hose from each Lot (Lockheed Martin Standard 32L8).

MAF:

Perform Leak Test (TM04k).

Launch Site:

Perform Leak Test (OMRSD FILE IV).

Perform Transducer Operation Tests (OMRSD FILE II).

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RATIONALE FOR RETENTION

INSPECTION:

Lockheed Martin Procurement Quality Representative:

Witness Proof Pressure Test (Lockheed Martin Standard 32L8).

Witness Leakage Test (Lockheed Martin Standard 32L8).

Inspect TFE Liner for freedom of stress cracks after performance of Destructive Sample Test (Lockheed Martin Standard 32L8).

Inspect X-ray film (Lockheed Martin Standard Drawing 32L8).

MAF Quality Inspection:

Witness Leak Test (TM04k).

Inspect hoses for freedom of damage prior to Intertank door installation (MPP 80901000SCL for LWT-54 thru 73; MPP80901010000 for LWT-74 & Up).

Launch Site:

Witness Leak Test (OMRSD FILE IV).

Inspect hoses for freedom of damage prior to final Intertank door closeout (OMRSD FILE IV).

Witness Transducer Operation Test (OMRSD FILE II).

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.