

CRITICAL ITEMS LIST (CIL)

SYSTEM:	Electrical	FUNCTIONAL CRIT:	1
SUBSYSTEM:	LQ2 Aft Feedthru Receptacle	PHASE(S):	b
REV & DATE:	J, 12-19-97	HAZARD REF:	S.07
DCN & DATE:	001, 6-15-98		
ANALYSTS:	J. Bowski/A. Oser		

FAILURE MODE: Leakage

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

TIME TO EFFECT: Minutes

FAILURE CAUSE(S):
 A: Improper Seating of Seal
 B: Damaged Seal/Sealing Surface

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: This seal is installed between the connector flange and feedthru interface to minimize leakage.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
3.11.4.1	55L5-16R	K-Seal	1	LVT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: Electrical
SUBSYSTEM: LO2 Aft Feedthru Receptacle
FMEA ITEM CODE(S): 3.11.4.1

REV & DATE: J, 12-19-97
DCN & DATE: 004, 6-30-99

RATIONALE FOR RETENTION

DESIGN:

The material used for the seal is A-286 corrosion resistant steel per AMS 5737. It is teflon coated for oxygen service in temperatures of -320^o to +450^oF and is designed to withstand a pressure of 600 psia.

The K-Seal 55L5 has been used on various space vehicles where cryogenic propellant sealing is required. Design features that aid in sealing are dual sealing surfaces, a heel seal to provide mechanical stop and carry hoop tension, soft coating on the seals to seal surface finish imperfections, and flexible tapered lips to maintain stress levels.

A, B: The seal is designed with a soft coating, has hoop tension and flexible taper lips to assure sealing.

TEST:

The K-Seal is certified. Reference HCS MMC-ET-TM08-L-P008.

MAE:

A, B: Perform Leak Test (TM04k).

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

B: Inspect dimensions and finish of sealing surface (Standard Drawing 55L5).

B: Verify material selection (MMC-ET-SE16 and Standard Drawing 55L5).

MAE Quality Inspection:

B: Inspect the seal, flange, and boss for cleanliness, nicks, scratches and other damage (STP2012).

A: Witness torque application (Drawing 80932003719).

A: Inspect safety wire installation of the 81L2-2 connector (Drawing 80932003719 and STP2013).

A, B: Witness Leak Check Test (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.