CRITICAL ITEMS LIST (CIL)

SYSTEM:	ASI	FUNCTIONAL CRIT:	1
SUBSYSTEM:	Nose Cone Assembly	PHASE(S):	b
REV & DATE:	J, 12-19-97	HAZARD REF:	S.11
DCN & DATE:			
ANALYSTS:	L. Hansen/E. Howell		

FAILURE MODE: Structural Failure

FAILURE EFFECT: b) Loss of mission and vehicle/crew due to LO2 tank structural failure 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 shape for nose cone tip and lightning protection.

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY
4.1.1.1	80911041207-010	Spike Assembly	1	LWT-54 thru 80, 82-84
	-019		1	LWT-81, 85 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM:	ASI	REV & DATE:	J, 12-19-97
SUBSYSTEM:	Nose Cone Assembly	DCN & DATE:	
FMEA ITEM CODE(S):	4.1.1.1		

RATIONALE FOR RETENTION

DESIGN:

A, B: The 80911041207 spike is a double conic aluminum casting 14.01 inches long.

The spike is attached to the nose cone assembly by six mounting bolts through the base of the casting. Materials are selected in accordance with MMC-ET-SE16 which requires repetitive conformance of composition and properties. The spike and attachment 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. Tensile installation loads are sufficient to provide screening for major flaws in individual fasteners.

TEST:

The Spike Assembly is certified. Reference HCS MMC-ET-TM08-L-S001.

Vendor:

B: Attaching hardware is procured and tested to Standard drawings (26L3 and 34L1).

INSPECTION:

Vendor Inspection - Lockheed Martin Surveillance:

A, B: Verify materials selection and verification controls (MMC-ET-SE16 and Standard drawing 34L1; drawing 82611001800 and Standard drawings 26L3 for LWT 82 thru 84 and prior to LWT-81; drawings 82611001800 and NAS6704U for LWT-81, 85 & up).

A: Inspect dimensions (drawing 80911041207).

MAF Quality Inspection:

B: Inspect that attaching hardware is free from damage (STP2014; drawing 80911041201 for LWT-82 thru 84 and prior to LWT-81; drawing 80911041231 for LWT-81, 85 & up).

A, B: Verify installation and witness torque (drawing 80911041201 for LWT 82 thru 84 and prior to LWT-81; drawing 80911041231 for LWT-81, 85 & up).

B: Verify insert locking feature (STP2014; drawing 80911041201 for LWT 82 thru 84 and prior to LWT-81; drawing 80911041231 for LWT-81, 85 & up).

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.