

CRITICAL ITEMS LIST (CIL)

SYSTEM:	Thermal Protection System	FUNCTIONAL CRIT:	1
SUBSYSTEM:	LO2 Nose Cone	PHASE(S):	b
REV & DATE:	J, 12-19-97	HAZARD REF:	T.02
DCN & DATE:			
ANALYSTS:	B. Burkes/R. Lauto		

FAILURE MODE: Loss of SLA Material

FAILURE EFFECT: b) Loss of mission and vehicle/crew due to structural failure cause by overheating and damage to functional system components housed within the nose cone.  
Loss of mission and vehicle/crew due to debris impacting Orbiter in critical areas.

TIME TO EFFECT: Seconds

FAILURE CAUSE(S): A: Material Deficiency  
B: Process Deficiency

REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: This ablative material provides thermal protection from ascent environments in high aerodynamic heating areas. For the composite nose cone configuration, the SLA closeout minimizes the potential for ice/frost formation in the area of the bulkhead bracketry.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
5.7.1.1	80971068478	Frame Assembly, Left Hand TPS	1	LWT-54 thru 80, 82-84
	80971068479	Frame Assembly, Right Hand TPS	1	LWT-54 thru 80, 82-84
	80971068420	Nose Cone Fairing Assembly	1	LWT-54 thru 80, 82-84
	80971068420	fwd C/D Fairing, TPS Application	1	LWT-54 thru 80, 82-84
	80971068432	TPS C/D Nose Cone, Bldg. 420	1	LWT-54 thru 80, 82-84
	80971068428	TPS C/D Composite Nose Cone	1	LWT-81, 85 & Up

REMARKS: The Nose Cone SLA applications are grouped as the failure mode, causes and effects are the same.

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CONTINUATION SHEET

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RATIONALE FOR RETENTION

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STP1506, 1508, 1509, 1510, 1520, 1530, 3001, 3003, 3004, 5013 and 6005-11 are applicable to this FMEA Item Code. See Page 1 for Retention Rationale specified by these STP's. The following additional Retention Rationale is also applicable to this FMEA Item Code:

DESIGN:

S: Actar 22A is used as a seal release film to allow for ease of removal/installation of the Nose Cone without TPS or hardware damage.

TEST:

The Nose Cone SLA Applications are certified. Reference NCS MMC-ET-TN08-L-T007, T503 and T505. Refer to the NCS(s) for effectivity data applicable to specific part numbers and material type.

INSPECTION:

No additional Rationale for Retention is applicable.

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.