

CRITICAL ITEMS LIST (CIL)

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

FAILURE MODE: Loss of SLA Material

FAILURE EFFECT: b) Loss of mission due to structural failure of cable trays thereby severing the cables resulting in loss of SRB and ET control functions. Loss of vehicle/crew due to resulting fire/explosion/improper SRB separation.  
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 protects the ET's external cabling system and cable tray assemblies from aerodynamic heating.

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY
5.B.7.1	80971028419	Cover Assy, Ablator Appl	2	LMT-54 & Up
	80971028419	Gap Cover Assy, TPS Appl	2	LMT-54 & Up
	80971078477	Gap Cover Assy, TPS Appl	4	LMT-54 & Up
	80971028412	Cover Assy, TPS Appl	6	LMT-54 & Up
	80971078445	Cable Tray Assy, TPS Appl	2	LMT-54 & Up
	80971048415	Cover Assy, TPS Appl	3	LMT-54 & Up
	80971028446	Cover Assy, TPS Appl	4	LMT-54 & Up
	80971078412	Splice Plate Assy - TPS Appl	1	LMT-54 & Up
	80971028415	Cover Assy, TPS Appl	5	LMT-54 & Up
	80971078412	Cover Assy, Ablator Appl	1	LMT-54 & Up
	80971028445	Gap Cover, SRB-SLA Appl	2	LMT-54 & Up
	80971028445	Cable Tray Cover, SLA Appl	2	LMT-54 & Up
	80971028445	Cable Tray Assy, SLA Appl	2	LMT-54 & Up
	80971078442	Support Assy, SLA Appl	1	LMT-54 & Up

REMARKS: The cable tray related SLA applications are grouped as the failure mode, causes and effects are the same.

CRITICAL ITEMS LIST (CIL)  
CONTINUATION SHEET

SYSTEM: Thermal Protection System  
SUBSYSTEM: Components  
FMEA ITEM CODE(S): 5.8.7.1

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

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY
5.8.7.1	80971078442	Cable Tray Assy, SLA Appl	3	LWT-54 & Up
	80971028448	Fairing Assy, TPS Appl	1	LWT-54 & Up
	80971028421	Gap Cover Assy, TPS Appl	1	LWT-54 & Up
	80971028421	Cover Assy, TPS Appl	3	LWT-54 & Up
	80971028450	Fairing Support, TPS Appl	1	LWT-54 & Up
	80971028450	Cable Tray Support, TPS Appl	1	LWT-54 & Up
	80971028450	Fairing Assy, RH TPS Appl	1	LWT-54 & Up
	80971028450	Fairing Assy, LH TPS Appl	1	LWT-54 & Up
	80971028449	Fairing Assy, SLA Appl	2	LWT-54 & Up
	80971028475	Cover Assy, TPS Appl	3	LWT-54 & Up
	80971078475	Fairing, LH2 Umb, TPS Appl	1	LWT-54 & Up
	80971078475	Fairing, LH2 Vert Struc/X-Beam	1	LWT-54 & Up
	80971008454	TPS Closeout FA +Y,-Y Intfc Hdw	1	LWT-54 & Up
	80971068422	TPS C/O, SLA & Foam, Bldg 420 (Views J & X)	1	LWT-54 thru 88
	80971068422	TPS C/O, SLA & Foam, Bldg 420 (Views S-S & X-X)	1	LWT-89 & Up
	80971078412	Cover Assy, TPS Appl	1	LWT-54 & Up
	80971068433	TPS C/O, He Inj Box-Bldg 420	1	LWT-54 & Up

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RATIONALE FOR RETENTION

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STP1506, 1509, 1510, 1520, 1521, 1530, 1531, 3001, 3003 and 5013 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:

No additional Rationale for Retention is applicable.

TEST:

The Cable Tray related SLA Applications are certified. Reference MCS's MMC-ET-IM08-L-T001, T010, T503 and T505. Refer to the MCS(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.