

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EW&I/AFT-RCS

FMEA NO 05-7KA-2000 -1 REV:06/02/89

LOCATION :SEE TABLE 05-7KA-2000-1

CRIT.FUNC: 1

P/N RI QUANTITY

CRIT. HDW: 1

1. NB6GE16-26XXXX	2				
2. NB6GE20-41XXXX	2	VEHICLE	102	103	104 105
3. NB6GE24-61XXXX	12	EFFECTIVITY	X	X	X X

PHASE(S): PL LO OO X DO LS

REDUNDANCY SCREEN: A- N/A B- N/A C- N/A

APPROVED BY (NASA):

EW&I SSM [Signature]
 EW&I REL [Signature] 7/10/89
 SSM [Signature]
 REL [Signature]
 QE [Signature]

PREPARED BY:

APPROVED BY:

DES D SOVEREIGN DES [Signature]
 REL T KIMURA TK REL [Signature]
 QE J COURSEN DWM QE [Signature]

ITEM:

CONNECTOR, PLUG, [(1.) 26 #20 CONTACTS, (2.) 41 #20 CONTACTS, (3.) 61 #20 CONTACTS] - LEFT AND RIGHT AFT RCS FUEL AND OXIDIZER VALVE COMMAND CIRCUITS.

FUNCTION:

PROVIDES MATE/DEMATE CAPABILITY FOR WIRING WHICH CONTAIN CIRCUITS FOR ENERGIZING THE LEFT AND RIGHT AFT RCS FUEL AND OXIDIZER VALVE COMMAND FROM THE LEFT AND RIGHT AFT REACTION JET DRIVERS (RJD) NO. 1 AND NO. 2 FOR PLUG AND SHORTED PIN-TO-PIN PIN/SOCKET REFERENCE DESIGNATORS, SEE TABLE 05-7KA-2000-1.

FAILURE MODE:

PIN-TO-PIN SHORT (HOT)

CAUSE(S):

PIECE PART FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK PROCESSING ANOMALY, THERMAL STRESS

EFFECT(S) ON:

(A)SUBSYSTEM (B)INTERFACES (C)MISSION (D)CREW/VEHICLE (E)FUNCTIONAL CRITICALITY EFFECT:

(A) INADVERTENT ENERGIZING OF THE FUEL AND OXIDIZER VALVE SOLENOIDS OF ANOTHER THRUSTER WHEN THE SELECTED THRUSTER IS COMMANDED TO FIRE.

(B) UNCONTROLLED SIMULTANEOUS FIRING OF A NONSELECTED THRUSTER WHEN CHOSEN THRUSTER IS FIRED.

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EW&I/AFT-RCS

FMEA NO 05-7KA-2000 -1 REV:06/02/89

(C,D) INADVERTENT FIRING OF ANY RCS JET COULD LEAD TO A LOSS OF VEHICLE DUE TO DAMAGE CAUSED BY IMPACT WITH THE TARGET (PAYLOAD, SATELLITE, etc). POSSIBLE LOSS OF EVA CREWMAN IF STRUCK BY ORBITER, TARGET OR JET PLUME.

REFERENCE CIL 05-1-FC6342-02

DISPOSITION & RATIONALE:

(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE:

(A, B, C, D) DISPOSITION AND RATIONALE

REFER TO APPENDIX K, ITEM NO. 1 - TYPE NB CONNECTOR, CIRCULAR, MINIATURE

(B) GROUND TURNAROUND TEST

CIRCUITS ARE CHECKED OUT EVERY FLIGHT DURING GROUND TURNAROUND VIA THE GUIDANCE, NAVIGATION, AND CONTROL (GN&C) ORBITER MAINTENANCE REQUIREMENTS AND SPECIFICATIONS DOCUMENT (OMRSD) REQUIREMENTS FOR CHECKING THE PRIMARY AND VERNIER REACTION JET DRIVER POWER. THE TESTING CONSISTS OF CYCLING THRUSTER REACTION JET DRIVER LOGIC AND DRIVER SWITCHES WHILE MONITORING VEHICLE INSTRUMENTATION TO DETERMINE IF THE CIRCUITS FUNCTION PROPERLY.

(E) OPERATIONAL USE

IF TIME PERMITS, JET DRIVERS WOULD BE TURNED OFF.

TABLE 05-7KA-2000-1

PART NUMBER	PLUG REFERENCE DESIGNATOR	CONNECTOR LOCATION	AFT RJD NO.	PIN/SOCKET DESIG.
1. NB6GE16-26XXXX	50V77W48P367	AFT FUS/BAY 6	2	X-H K-J X-J Y-J Y-K X-K Y-L
	50V77W129P382	AFT FUS/BAY 6	2	A-R A-S A-T B-T P-S S-R

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EW&I/AFT-RCS

FMEA NO 05-7KA-2000 -1 REV:06/02/89

TABLE 05-7KA-2000-1, CONT'D

PART NUMBER	PLUG REFERENCE DESIGNATOR	CONNECTOR LOCATION	AFT RJD NO.	PIN/ SOCKET DESIG.
2. NB6GE20-41XXXX	54V77W1P126	AFT RJDA NO. 1	1	b-H
	56V77W1P136	AFT RJDA NO. 2	2	H-b
3. NB6GE24-61XXXX	50V77W15P469	LEFT OMS POD I/F	1	C-B E-D
	50V77W15P471	LEFT OMS POD I/F	1	C-B E-D
	50V77W15P473	LEFT OMS POD I/F	2	C-B E-D G-F
	50V77W15P475	LEFT OMS PAD I/F	2	C-B E-D G-F
	50V77W16P468	RIGHT OMS POD I/F	1	B-C D-E
	50V77W16P470	RIGHT OMS POD I/F	1	B-C D-E
	50V77W16P472	RIGHT OMS POD I/F	2	B-C D-E F-G
	50V77W16P474	RIGHT OMS POD I/F	2	B-C D-E F-G

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EW&I/AFT-RCS

FMEA NO 05-7KA-2000 -1 REV:06/02/89

TABLE 05-7KA-2000-1, CONT'D

PART NUMBER	PLUG REFERENCE DESIGNATOR	CONNECTOR LOCATION	AFT RJD NO.	PIN/SOCKET DESIG.
3. NB6GE24-61XXXX (CONT'D)	50V77W24P358	AFT FUS/BAY 6	2	B-A C-A C-B C-B D-C d-C E-D e-D F-E b-c W-c B-d C-D -e-d w-d x-d f-e X-e F-f x-f
	50V77W88P111	AFT FUS/BAY 4	1	b-A C-A C-B C-B a-b W-X t-X Z-Y u-Y u-Z u-a b-a Y-t s-t

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EW&I/AFT-RCS

FMEA NO 05-7KA-2000 -1 REV:05/02/89

TABLE 05-7KA-2000-1. CONT'D

PART NUMBER	PLUG REFERENCE DESIGNATOR	CONNECTOR LOCATION	AFT RJD NO.	PIN/ SOCKET DESIG.
3. NB6GE24-61XXXX (CONT'D)	50V77W92P165	AFT FUS/BAY 4	1	j-L N-M k-M P-N L-j m-k m-n P-m N-P m-P n-P S-R r-R R-S p-S U-T q-T q-U r-U r-V q-P U-r V-r
	50V77W128P383	AFT FUS/BAY 6	2	B-C A-b A-c B-c d-c B-d