

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - HYDRAULICS FMEA NO 05-6G -2088 -1 REV:02/19/88

ASSEMBLY : PANEL R2	ABORT,	CRIT. FUNC:	1R
F/N RI : ME452-0102-7463	RTLS	CRIT. HDW:	2
F/N VENDOR:	VEHICLE	102	103 104
QUANTITY : 3	EFFECTIVITY:	X	X X
: THREE	PHASE(S):	PL	LO X OO DO X LS
:			

PREPARED BY:	J HERMAN	DES	T KIMURA	REL	J COURSEN	QE	
		DES	<i>R. V. Burns</i>	REL	<i>[Signature]</i>	QE	
		REL	<i>[Signature]</i>	REL	<i>[Signature]</i>	QE	
		QE	<i>[Signature]</i>	QE	<i>[Signature]</i>	QE	

REDUNDANCY SCREEN: A-PASS B-PASS C-PASS

APPROVED BY: APPROVED BY (NASA):

SSM *[Signature]*

REL *[Signature]* 3/12/88

QE *[Signature]* 3/14/88

EPD&C Per *[Signature]* 3/13/88

EPD&C SSM WS *[Signature]* 3-4-88

ITEM:

SWITCH, TOGGLE, 4 POLE 2 POSITION, "HYD MAIN PUMP PRESS", "NORM/LOW"

FUNCTION:

PROVIDES CONTROL OF REDUNDANT POWER TO EACH OF THREE HYDRAULIC MAIN PUMP DEPRESS SOLENOIDS FOR HYDRAULIC MAIN PUMP PRESS 1, 2, AND 3. 32V73A2S26, S27, S28

FAILURE MODE:

FAILS IN "LOW" POSITION, ALL CONTACTS FAIL CLOSED, INADVERTENT OPERATION

CAUSE(S):

PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, MECHANICAL SHOCK, VIBRATION

EFFECT(S) ON:

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

(A) INADVERTENT ACTIVATION OF DEPRESS SOLENOID VALVE (CONTINUOUS POWER TO AFFECTED HYDRAULIC SYSTEM MAIN PUMP DEPRESS SOLENOID)

(B) INABILITY TO PRESSURIZE AFFECTED HYDRAULIC SYSTEM. NOSEWHEEL STEERING SYSTEM WOULD BE LOST IF HYDRAULIC SYSTEM 1 IS DEPRESSURIZED. LOSS OF VALVE CONTROL FOR ONE ENGINE AND LOSS OF ONE OF TWO HYDRAULIC SYSTEMS TO THE TVC ACTUATORS ON TWO ENGINES. ALSO, LOSS OF ONE OF THREE ET UMBILICAL RETRACT ACTUATORS FOR EACH UMBILICAL PLATE.

(C) ABORT DECISION REQUIRED

(D) FIRST FAILURE - NO EFFECT

(E) POSSIBLE LOSS OF CREW/VEHICLE WITH TWO FAILURES: FAILURE OF THIS SWITCH, LOSS OF SECOND HYDRAULIC SYSTEM. CRITICALITY 1 FOR SSME INDUCED RTLS

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SUBSYSTEM : EPD&C - HYDRAULICS FMEA NO 05-6G -2088 -1 REV:03/19/88

DISPOSITION & RATIONALE:

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

(A-D) DISPOSITION AND RATIONALE

REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

(B) GROUND TURNAROUND TEST

V58AJ0.010, "MAIN PUMP EDV ELECTRICAL CHECK" (PERFORMED PRIOR TO EACH FLIGHT). VERIFY SOLENOID RESPONDS TO SWITCH COMMANDS.

(E) OPERATIONAL USE

NONE