PROJECT: SRMS (-5 MCIU INSTALLED)
ASS'Y NOMENCLATURE: D&C PANEL
SYSTEM: D&C SUBSYSTEM
ASS'Y P/N: 51140E391   SHEET: 1

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1045	0	MCIU-D&C DATA INTERFACE QTY-1 SCHEMATIC ED 87305	MODE: CORRUPT DATA SENT TO D&C. CAUSE(S): (1) INPUT SHIFT REGISTER OR LATCH MALFUNCTION FOR DATA ONLY.	LOSS OF COMMUNICATION WITH D&C INTERFACE WILL INITIATE D&C COMMUNICATION FAILURE DETECTION. AUTOBRAKES. ARM COMES TO REST. GPC GOES INTO IDLE MODE. LOSS OF COMPUTER SUPPORTED MODES. ABE COMMUNICATION PATH REMAINS OPERABLE. LOSS OF LIMPING DURING END EFFECTOR CAPTURE. WORST CASE ---------- UNABLE TO RELEASE BRAKES. LOSS OF ARM DRIVE CAPABILITY. REDUNDANT PATHS REMAINING ---------------- TO CONTINUE OPERATIONS: 1) DIRECT DRIVE 2) BACK-UP DRIVE 3) JETTISON (TO SECURE ORBITER)		DESIGN FEATURES ---------------- PROCESSING OF THE CLOCK AND OF THE STROBE SIGNAL, IS PERFORMED BY THREE ACTIVE EEE PARTS. EACH SIGNAL IS BUFFERED BY A COMPLEMENTARY TRANSISTOR PAIR (2N2222A AND 2N2907A) AND SHAPED BY A CMOS SCHMIDT TRIGGER GATE (4093). CMOS DEVICES OPERATE AT LOW POWER AND HENCE DO NOT EXPERIENCE SIGNIFICANT OPERATING STRESSES. THE TECHNOLOGY IS MATURE, AND DEVICE RELIABILITY HISTORY IS WELL DOCUMENTED. ALL STRESSES ARE ADDITIONALLY REDUCED BY DERATING THE APPROPRIATE PARAMETERS IN ACCORDANCE WITH SPAR-RMS-PA.003. SPECIAL HANDLING PRECAUTIONS ARE USED AT ALL STAGES OF MANUFACTURE TO PRECLUDE DAMAGE/STRESS DUE TO ELECTROSTATIC DISCHARGE. DISCRETE SEMICONDUCTOR DEVICES SPECIFIED TO AT LEAST THE 1X LEVEL OF MIL-S-19500. ALL DEVICES ARE SUBJECTED TO RE-SCREENING BY AN INDEPENDANT TEST HOUSE. SAMPLES OF ALL PROCURED LOTS/DATE CODES ARE SUBJECTED TO DESTRUCTIVE PHYSICAL ANALYSIS (DPA) TO VERIFY THE INTEGRITY OF THE MANUFACTURING PROCESSES. DEVICE STRESS LEVELS ARE, DERATED IN ACCORDANCE WITH SPAR-RMS-PA.003 AND VERIFIED BY DESIGN REVIEW. EEE PARTS HAVE BEEN SELECTED AND CONTROLLED IN ACCORDANCE WITH SPAR-RMS-PA.003. THIS DOCUMENT DEFINES THE PROGRAM REQUIREMENTS FOR MONITORING AND CONTROLLING EEE PARTS. THE REQUIREMENTS INCLUDE PARTS SELECTION TO AT LEAST "ESTABLISHED RELIABILITY" LEVELS, AND ADEQUATE DERATING OF PART STRESS LEVELS. PROCEDURES AND ACTIVITIES ARE SPECIFIED TO ENSURE AT LEAST EQUIVALENT QUALITY FOR NONSTANDARD AND IRREGULAR PARTS. RELIABILITY ANALYSIS HAS CONFIRMED NO PARTS WITH GENERICALLY HIGH FAILURE RATES. AEROSPACE DESIGN STANDARDS FOR DETAILING ELECTRONIC PARTS PACKAGING, MOUNTING AND STRUCTURAL/MECHANICAL/INTEGRITY OF ASSEMBLIES ARE APPLIED. SUCH DESIGN HAS BEEN REVIEWED AND FOUND SATISFACTORY THROUGH THE DESIGN AUDIT PROCESS, INCLUDING THE USE OF RELIABILITY, MAINTAINABILITY AND SAFETY CHECKLISTS. MATERIAL SELECTION AND USAGE CONFORMS TO SPAR-SG.368 WHICH IS EQUIVALENT TO THE NASA MATERIALS USAGE REQUIREMENTS. WORST CASE ANALYSIS HAS BEEN CONDUCTED TO ENSURE THAT PERFORMANCE CAN BE MET UNDER WORST CASE TEMPERATURE AND AGING EFFECTS. EEE PARTS STRESS ANALYSIS HAS BEEN COMPLETED AND CONFIRMS THAT THE PARTS MEET THE DERATING REQUIREMENTS. PRINTED CIRCUIT BOARD DESIGNS HAVE BEEN REVIEWED TO ENSURE ADEQUATE CIRCUIT PATH WIDTH AND SEPARATION AND TO CONFIRM APPROPRIATE DIMENSIONS OF CIRCUIT SOLDER PADS AND OF COMPONENT HOLE PROVISIONS. PARTS MOUNTING METHODS ARE CONTROLLED IN ACCORDANCE WITH MSFC-STD-136 AND CAE PD93489. THESE DOCUMENTS REQUIRE APPROVED-MOUNTING METHODS, STRESS RELIEF, AND COMPONENT SECURITY. WHERE APPLICABLE, DESIGN DRAWINGS AND DOCUMENTATION GIVE CLEAR IDENTIFICATION OF HANDLING PRECAUTIONS FOR ESD SENSITIVE PARTS.

PREPARED BY: MFWG   SUPERCEDING DATE: NONE   DATE: 11 JUL 91   CIL REV: 0

RMS/D&C - 174

PROJECT: SRMS (-5 MCIU INSTALLED)
ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM
ASS'Y P/N: 51140E391   SHEET: __2__

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1045	0	MCIU-D&C DATA INTERFACE QTY-1 SCHEMATIC ED B7305	MODE: CORRUPT DATA SENT TO D&C. CAUSE(S): (1) INPUT SHIFT REGISTER OR LATCH MALFUNCTION FOR DATA ONLY.	LOSS OF COMMUNICATION WITH D&C INTERFACE WILL INITIATE D&C COMMUNICATION FAILURE DETECTION. AUTOBRAKES. ARM COMES TO REST. GPC GOES INTO IDLE MODE. LOSS OF COMPUTER SUPPORTED MODES. ABE COMMUNICATION PATH REMAINS OPERABLE. LOSS OF LIMPING DURING END EFFECTOR CAPTURE. WORST CASE ---------- UNABLE TO RELEASE BRAKES. LOSS OF ARM DRIVE CAPABILITY. REDUNDANT PATHS REMAINING --------------- TO CONTINUE OPERATIONS: 1) DIRECT DRIVE 2) BACK-UP DRIVE 3) JETTISON (TO SECURE ORBITER)		BOARD ASSEMBLY DRAWINGS INCLUDE THE REQUIREMENT FOR SOLDERING STANDARDS IN ACCORDANCE WITH NHB 5300.4(3A) AND JSC 08800A. THE CIRCUIT IS PACKAGED ON A PAIR OF BOARDS MECHANICALLY JOINED BY MACHINED SPACERS ALONG TWO EDGES TO FORM A MODULE. THE MODULE IS SUPPORTED IN MACHINED GUIDEWAYS IN THE ELECTRONICS PACKAGE. LATERAL RESTRAINT IS PROVIDED BY TWO PAIRS OF BOW SPRINGS ENGAGING THE GUIDEWAYS. THE LOWER EDGE OF EACH BOARD INTERFACES VIA A PRINTED CIRCUIT BOARD CONNECTOR, AND THE MODULE IS RESTRAINED BY THE ELECTRONICS PACKAGE COVER WHICH BEARS ON A PAIR OF COMPRESSIBLE WEDGES ON THE UPPER EDGE OF THE MODULE. THE CONNECTORS WERE SUBJECTED TO CONSTRUCTION ANALYSIS TO ENSURE THAT MATERIALS AND DESIGN ARE SUPPORTIVE OF RELIABLE PERFORMANCE. INTERCONNECTIONS BETWEEN THE D&C INTERFACE CONNECTORS AND ALL MODULE PRINTED BOARD CONNECTORS IS ACHIEVED BY MEANS OF FILM-WIRING. THIS IS SIMILAR TO A FLEXIBLE PRINTED CIRCUIT AND HAS KAPTON INSULATION. THE FILM WIRING PACKAGE IS MANUFACTURED BY HUGHES AIRCRAFT. THE LOWER HALF OF THE ELECTRONICS PACKAGE, THE ELECTRONICS TRAY, AND ALL PCB SOCKET CONNECTORS ARE SUPPLIED AS A KIT. THE FILM WIRING IS INTEGRATED TO THE KIT BY HUGHES. AN ASSEMBLY WAS SUBJECTED TO QUALIFICATION LEVEL VIBRATION AND THERMAL CYCLING TESTS. ALL DELIVERED ASSEMBLIES ARE SUBJECTED TO ACCEPTANCE TESTING WHICH INCLUDES: AVT AND ATT WITH CONTINUOUS AUTOMATIC CONTINUITY. SCAN OF ALL CONTACTS, INSULATION RESISTANCE, AND DIELECTRIC STRENGTH. INTERCONNECTIONS BETWEEN THE ELECTRONICS PACKAGE AND THE PANEL MOUNTED PARTS AND COMPONENTS IS ACHIEVED BY A PRE-FORMED WIRING HARNESS. PRIOR TO INSTALLATION, THIS HARNESS IS SUBJECTED TO TESTING FOR DIELECTRIC STRENGTH (1250 VAC), INSULATION RESISTANCE (500 VDC), AND CONTINUITY. THE TEST PROGRAM FOR THE D&C INCLUDES FUNCTIONAL TESTING OF THE FULLY ASSEMBLED ELECTRONICS PACKAGE AND ACCEPTANCE TESTING OF THE D&C PANEL ASSEMBLY.

PREPARED BY: ___MFWG___

SUPERCEDING DATE: __NONE__

DATE: 11 JUL 91   CIL REV: 0

PROJECT: SRMS (-5 MCIU INSTALLED)
ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM
ASS'Y P/N: 51140E391

SHEET: 3

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1045	0	MCIU-D&C DATA INTERFACE QTY-1 SCHEMATIC ED 87305	MODE: CORRUPT DATA SENT TO D&C. CAUSE(S): (1) INPUT SHIFT REGISTER OR LATCH MALFUNCTION FOR DATA ONLY.	LOSS OF COMMUNICATION WITH D&C INTERFACE WILL INITIATE D&C COMMUNICATION FAILURE DETECTION. AUTOBRAKES. ARM COMES TO REST. GPC GOES INTO IDLE MODE. LOSS OF COMPUTER SUPPORTED MODES. ABE COMMUNICATION PATH REMAINS OPERABLE. LOSS OF LIMPING DURING END EFFECTOR CAPTURE. WORST CASE ---------- UNABLE TO RELEASE BRAKES. LOSS OF ARM DRIVE CAPABILITY. REDUNDANT PATHS REMAINING ------------- TO CONTINUE OPERATIONS: 1) DIRECT DRIVE 2) BACK-UP DRIVE 3) JETTISON (TO SECURE ORBITER)		ACCEPTANCE TESTS ---------------- THE HARDWARE ITEM IS SUBJECTED TO THE FOLLOWING ACCEPTANCE ENVIRONMENTAL TESTING AS PART OF THE D&C PANEL. O VIBRATION: LEVEL AND DURATION - REFERENCE TABLE 1 O THERMAL: +100 DEGREES F TO +10 DEGREES F 2 CYCLES (9.5 HRS PER CYCLE) THE D&C PANEL ASSEMBLY IS FURTHER TESTED AS PART OF THE RMS SYSTEM (TP518 RMS STRONGBACK TEST AND TP552 FLAT FLOOR TEST) WHICH VERIFIES THE ABSENCE OF THE FAILURE MODE. QUALIFICATION TESTS ------------------- THE D&C PANEL HAS BEEN SUBJECTED TO THE FOLLOWING QUALIFICATION TEST ENVIRONMENT: O VIBRATION: LEVEL AND DURATION - REFERENCE TABLE 1 O SHOCK: 20G/11MS - 3 AXES (6 DIRECTION) O THERMAL: 130 DEGREES F TO -23 DEGREES F (12 HRS PER CYCLE) (6 CYCLES) O HUMIDITY: 95% (120 DEGREES F TO 82 DEGREES F CYCLE IN 16 HRS) 10 CYCLES TOTAL O EMC: MIL-STD-461 AS MODIFIED BY SL-E-0002 (TEST CE01, CE CE03, CS01(DC/AC), CS02, CS06, RE02 (B/N), RS02, RS03, RS04) RE02 (B/N) RS02, 03, 04) FLIGHT CHECKOUT --------------- PDRS OPS CHECKLIST (ALL VEHICLES) JSC 16987

PREPARED BY: MFWG

SUPERCEDING DATE: NONE

DATE: 11 JUL 91   CIL REV: 0

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. 2/1R CRITICALITY RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1045	0	MCIU-D&C DATA INTERFACE QTY-1 SCHEMATIC ED 87305	MODE: CORRUPT DATA SENT TO D&C. CAUSE(S): (1) INPUT SHIFT REGISTER OR LATCH MALFUNCTION FOR DATA ONLY.	LOSS OF COMMUNICATION WITH D&C INTERFACE WILL INITIATE D&C COMMUNICATION FAILURE DETECTION. AUTOBRAKES. ARM COMES TO REST. GPC GOES INTO IDLE MODE. LOSS OF COMPUTER SUPPORTED MODES. ABE COMMUNICATION PATH REMAINS OPERABLE. LOSS OF LIMPING DURING END EFFECTOR CAPTURE. WORST CASE ---------- UNABLE TO RELEASE BRAKES. LOSS OF ARM DRIVE CAPABILITY. REDUNDANT PATHS REMAINING --------------- TO CONTINUE OPERATIONS: 1) DIRECT DRIVE 2) BACK-UP DRIVE 3) JETTISON (TO SECURE ORBITER)	QA/INSPECTIONS .... EEE PARTS INSPECTION IS PERFORMED AS REQUIRED BY SPAR-RMS-PA.003. EACH EEE PART IS QUALIFIED AT THE PART LEVEL TO THE REQUIREMENTS OF THE APPLICABLE SPECIFICATION. ALL EEE PARTS ARE 100% SCREENED AND BURNED IN, AS A MINIMUM, AS REQUIRED BY SPAR-RMS-PA.003, BY THE SUPPLIER. ADDITIONALLY, EEE PARTS ARE 100% RE-SCREENED IN ACCORDANCE WITH REQUIREMENTS, BY AN INDEPENDENT SPAR APPROVED TESTING FACILITY. OPA IS PERFORMED AS REQUIRED BY PA.003 ON A RANDOMLY SELECTED 5% OF PARTS, MAXIMUM 5 PIECES, MINIMUM 3 PIECES FOR EACH LOT NUMBER/DATE CODE OF PARTS RECEIVED. WIRE IS PROCURED TO SPECIFICATION MIL-W-22759 OR MIL-W-81381 AND INSPECTED AND TESTED TO NASA JSCM8080 STANDARD NUMBER 95A. RECEIVING INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS IDENTIFIED IN THE PROCUREMENT DOCUMENTS, THAT NO PHYSICAL DAMAGE HAS OCCURRED TO PARTS DURING SHIPMENT, THAT THE RECEIVING DOCUMENTS PROVIDE ADEQUATE TRACEABILITY INFORMATION AND SCREENING DATA CLEARLY IDENTIFIES ACCEPTABLE PARTS. PARTS ARE INSPECTED THROUGHOUT MANUFACTURE AND ASSEMBLY AS APPROPRIATE TO THE MANUFACTURING STAGE COMPLETED. THESE INSPECTIONS INCLUDE, PRINTED CIRCUIT BOARD INSPECTION FOR TRACK SEPARATION, DAMAGE AND ADEQUACY OF PLATED THROUGH HOLES, COMPONENT MOUNTING INSPECTION FOR CORRECT SOLDERING, WIRE LOOPING, STRAPPING, ETC. OPERATORS AND INSPECTORS ARE TRAINED AND CERTIFIED TO NASA NHB 5300.4(3A) STANDARD, AS MODIFIED BY JSC 08800A. CONFORMAL COATING INSPECTION FOR ADEQUATE PROCESSING IS PERFORMED USING ULTRAVIOLET LIGHT TECHNIQUES. POST P.C. BD. INSTALLATION INSPECTION, CLEANLINESS AND WORKMANSHIP (SPAR/GOVERNMENT REP. MANDATORY INSPECTION POINT) P.C. BD. INSTALLATION INSPECTION, CHECK FOR CORRECT BOARD INSTALLATION, ALIGNMENT OF BOARDS, PROPER CONNECTOR CONTACT MATING, WIRE ROUTING, STRAPPING OF WIRES ETC., PRE-TEST INSPECTION OF D&C PANEL ASSY INCLUDES AN AUDIT OF LOWER TIER INSPECTION COMPLETION, AS BUILD CONFIGURATION VERIFICATION TO AS DESIGN ETC. (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT) A TEST READINESS REVIEW (TRR) WHICH INCLUDES VERIFICATION OF TEST PERSONNEL, TEST DOCUMENTS, TEST EQUIPMENT CALIBRATION/ VALIDATION STATUS AND HARDWARE CONFIGURATION IS CONVENED BY QUALITY ASSURANCE IN CONJUNCTION WITH ENGINEERING, RELIABILITY, CONFIGURATION CONTROL, SUPPLIER AS APPLICABLE, AND THE GOVERNMENT REPRESENTATIVE, PRIOR TO THE START OF ANY FORMAL TESTING (ACCEPTANCE OR QUALIFICATION). ACCEPTANCE TESTING (ATP) INCLUDES AMBIENT PERFORMANCE,

PROJECT: SRMS (-5 MCIU INSTALLED)
ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM
ASS'Y P/N: 51140E391   SHEET: __5__

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1045	0	MCIU-D&C DATA INTERFACE QTY-1 SCHEMATIC ED 87305	MODE: CORRUPT DATA SENT TO D&C. CAUSE(S): (1) INPUT SHIFT REGISTER OR LATCH MALFUNCTION FOR DATA ONLY.	LOSS OF COMMUNICATION WITH D&C INTERFACE WILL INITIATE D&C COMMUNICATION FAILURE DETECTION. AUTOBRAKES. ARM COMES TO REST. GPC GOES INTO IDLE MODE. LOSS OF COMPUTER SUPPORTED MODES. ABE COMMUNICATION PATH REMAINS OPERABLE. LOSS OF LIMPING DURING END EFFECTOR CAPTURE. WORST CASE ---------- UNABLE TO RELEASE BRAKES. LOSS OF ARM DRIVE CAPABILITY. REDUNDANT PATHS REMAINING -------------- TO CONTINUE OPERATIONS: 1) DIRECT DRIVE 2) BACK-UP DRIVE 3) JETTISON (TO SECURE ORBITER)		THERMAL AND VIBRATION TESTING, (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT). INTEGRATION OF D&C PANEL, RHC, THC AND MCIU, INSPECTIONS ARE PERFORMED AT EACH STAGE OF INTEGRATION, WHICH INCLUDES GROUNDING CHECKS, INTER CONNECT CABLE VERIFICATION, CONNECTOR INSPECTION FOR BENT OR PUSHBACK CONTACTS ETC. SUB-SYSTEM PERFORMANCE TESTING (ATP), INCLUDES AN AMBIENT PERFORMANCE TEST. (MANDATORY INSPECTION POINT). SRMS SYSTEMS INTEGRATION, THE INTEGRATION OF MECHANICAL ARM, SUBASSEMBLIES AND THE FLIGHT CABIN EQUIPMENT TO FORM THE SRMS. INSPECTIONS ARE PERFORMED AT EACH PHASE OF INTEGRATION WHICH INCLUDES GROUNDING CHECKS, THRU WIRING CHECKS, WIRING ROUTING, INTERFACE CONNECTORS FOR BENT OR PUSH BACK CONTACTS ETC. SRMS SYSTEMS TESTING - STRONGBACK AND FLAT FLOOR AMBIENT PERFORMANCE TEST. (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT)

PROJECT: SRMS (-5 MCIU INSTALLED)   SYSTEM: D&C SUBSYSTEM
ASS'Y NOMENCLATURE: D&C PANEL   ASS'Y P/N: 51140E39T   SHEET: 6

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON - END ITEM	HDWR / FUNC. CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1045	0	MCIU-D&C DATA INTERFACE QTY-1 SCHEMATIC ED 87305	MODE: CORRUPT DATA SENT TO D&C. CAUSE(S): (1) INPUT SHIFT REGISTER OR LATCH MALFUNCTION FOR DATA ONLY.	LOSS OF COMMUNICATION WITH D&C INTERFACE WILL INITIATE D&C COMMUNICATION FAILURE DETECTION. AUTOBRAKES. ARM COMES TO REST. GPC GOES INTO IDLE MODE. LOSS OF COMPUTER SUPPORTED MODES. ABE COMMUNICATION PATH REMAINS OPERABLE. LOSS OF LIMPING DURING END EFFECTOR CAPTURE. WORST CASE ---------- UNABLE TO RELEASE BRAKES. LOSS OF ARM DRIVE CAPABILITY. REDUNDANT PATHS REMAINING -------------- TO CONTINUE OPERATIONS: 1) DIRECT DRIVE 2) BACK-UP DRIVE 3) JETTISON (TO SECURE ORBITER)	2/1R	FAILURE HISTORY -------------- THERE HAVE BEEN NO FAILURES ASSOCIATED WITH THIS FAILURE MODE ON THE SRMS PROGRAM.

PREPARED BY: MFWG   SUPERCEDING DATE: NONE   DATE: 11 JUL 91   CIL REV: 0

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1045	0	MCIU-D&C DATA INTERFACE QTY-1 SCHEMATIC ED 87305	MODE: CORRUPT DATA SENT TO D&C. CAUSE(S): (1) INPUT SHIFT REGISTER OR LATCH MALFUNCTION FOR DATA ONLY.	LOSS OF COMMUNICATION WITH D&C INTERFACE WILL INITIATE D&C COMMUNICATION FAILURE DETECTION. AUTOBRAKES. ARM COMES TO REST. GPC GOES INTO IDLE MODE. LOSS OF COMPUTER SUPPORTED MODES. ABE COMMUNICATION PATH REMAINS OPERABLE. LOSS OF LIMPING DURING END EFFECTOR CAPTURE. WORST CASE ---------- UNABLE TO RELEASE BRAKES. LOSS OF ARM DRIVE CAPABILITY. REDUNDANT PATHS REMAINING --------------- TO CONTINUE OPERATIONS: 1) DIRECT DRIVE 2) BACK-UP DRIVE 3) JETTISON (TO SECURE ORBITER)	2/1R	OPERATIONAL EFFECTS ------------------- COMPUTER SUPPORTED MODES CANNOT BE USED TO COMPLETE THE MISSION. DIRECT DRIVE AND BACKUP MODES REMAIN. IF PAYLOAD ATTACHED, THE ARM SHOULD BE MANEUVERED TO A SAFE POSITION FOR PAYLOAD RELEASE. LOSS OF NEXT REDUNDANT PATH RESULTS IN BEING ONE FAILURE AWAY FROM INABILITY TO CRADLE ARM. IF WITH SUBSEQUENT FAILURES ALL DRIVE MODES ARE LOST, THE ARM MAY BE JETTISONED. CREW ACTION ----------- USE DIRECT DRIVE CREW TRAINING ------------- NONE MISSION CONSTRAINT ------------------ NONE OMRSD OFFLINE ------------- VERIFY NO D&C/MCIU COMM FAILURES. OMRSD ONLINE INSTALLATION ------------------------- NONE OMRSD ONLINE TURNAROUND ----------------------- VERIFY NO D&C/MCIU COMM FAILURES.

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