

**CRITICAL ITEMS LIST**

PROJECT: SRMS (-3 OR -5 MCIU INSTALLED)  
 ASS'Y NOMENCLATURE: JOINT POWER CONDITIONER

SYSTEM: ELECTRICAL SUBSYSTEM  
 ASS'Y P/N: 51740F1176

SHEET: 1

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HOWR / FUNC. 1/1 CRITICALITY RATIONALE FOR ACCEPTANCE SCREENS: N/A
3190	2	JOINT POWER CONDITIONER QTY-2 SCHEMATIC DIAGRAM 2563711	<p>MODE: DEGRADED OUTPUT ON ONE OR MORE OUTPUT LINES.</p> <p>CAUSE(S):                      (1) OPEN CAPACITOR IN OUTPUT LINE.                      (2) OPEN CAPACITOR IN OUTPUT FILTER.</p>	<p>HIGH RIPPLE IN OUTPUT MAY CAUSE ERRATIC OPERATIONS OF IC'S RESULTING IN ERRATIC ARM RESPONSE. IF DEGRADATION IS BAD ENOUGH D.V. OR D.C. MAY TURN OFF JPC. EFFECT AS IN 3170 (3175 FOR -5 MCIU).</p> <p>WORST CASE                      -----                      UNEXPECTED MOTION SLAGGISH JOINT.                      UNANNUNCIATED CREW ACTION REQUIRED.</p> <p>REDUNDANT PATHS REMAINING                      -----                      N/A</p>	<p>DESIGN FEATURES                      -----</p> <p>ALL RESISTORS AND CAPACITORS USED IN THE DESIGN ARE SELECTED FROM ESTABLISHED RELIABILITY (ER) TYPES. LIFE EXPECTANCY IS INCREASED BY ENSURING THAT ALL ALLOWABLE STRESS LEVELS ARE DERATED IN ACCORDANCE WITH SPAR-RMS-PA.003. ALL CERAMIC AND ELECTROLYTIC CAPACITORS ARE ROUTINELY SUBJECTED TO RADIOGRAPHIC INSPECTION.</p> <p>TRANSFORMERS AND INDUCTORS ARE DESIGNED SPECIFICALLY FOR THE APPLICATION. THESE ARE TOROID - WOUND AND UTILIZE A FERRITE CORE MATERIAL. CHOICE OF WIRE SIZE AND OF INSULATION MATERIALS ENSURE THAT THE DERATING REQUIREMENTS OF SPAR-RMS-PA.003 ARE MET.</p> <p>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.</p>

RMS/ELEC - 891

PREPARED BY:

MFVG

SUPERCEDING DATE: 11 SEP 86

APPROVED BY: \_\_\_\_\_

DATE: 24 JUL 91

CIL REV: 1

**CRITICAL ITEMS LIST**

PROJECT: SRMS (-3 OR -5 MCIU INSTALLED)  
 ASS'Y NOMENCLATURE: JOINT POWER CONDITIONER

SYSTEM: ELECTRICAL SUBSYSTEM  
 ASS'Y P/N: 51140F1176

SHEET: 2

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HWR / FUNC. 1/1 CRITICALITY RATIONALE FOR ACCEPTANCE SCREENS: N/A
3190	2	JOINT POWER CONDITIONER QTY-2 SCHEMATIC DIAGRAM 2563711	<p>MODE: DEGRADED OUTPUT ON ONE OR MORE OUTPUT LINES.</p> <p>CAUSE(S):                      (1) OPEN CAPACITOR IN OUTPUT LINE.                      (2) OPEN CAPACITOR IN OUTPUT FILTER.</p>	<p>HIGH RIPPLE IN OUTPUT MAY CAUSE ERRATIC OPERATIONS OF IC'S RESULTING IN ERRATIC ARM RESPONSE IF DEGRADATION IS BAD ENOUGH O.V. OR O.C. MAY TURN OFF JPC. EFFECT AS IN 3170 (3175 FOR -5 MCIU).</p> <p>WORST CASE                      -----                      UNEXPECTED MOTION SLUGGISH JOINT.                      UNANNUNCIATED CREW ACTION REQUIRED.</p> <p>REDUANT PATHS REMAINING                      -----                      N/A</p>	<p>ACCEPTANCE TESTS                      -----                      THE JPC IS SUBJECTED TO THE FOLLOWING ACCEPTANCE ENVIRONMENTAL TESTING AS AN SRU.</p> <p>O VIBRATION: LEVEL AND DURATION - REFERENCE TABLE 5</p> <p>O THERMAL: +70 DEGREES C TO -25 DEGREES C (1 1/2 CYCLES)</p> <p>THE JPC IS FURTHER EXPOSED TO THE JOINTS ACCEPTANCE TESTS VIBRATION THERMAL VACUUM.</p> <p>THE JPC INTEGRATED IN THE JOINT UNDERGOES AMBIENT RMS SYSTEM TESTING (1P 518 RMS STRONGBACK AND 1P552 FLAT FLOOR TEST) WHICH VERIFIES THE ABSENCE OF THE FAILURE MODE.</p> <p>QUALIFICATION TESTS                      -----                      THE JPC IS SUBJECTED TO THE FOLLOWING SRU QUALIFICATION TEST ENVIRONMENTS:</p> <p>O VIBRATION: LEVEL AND DURATION - REFERENCE TABLE 5</p> <p>O SHOCK: 20G/11 MS - 3 AXES (6 DIRECTIONS)</p> <p>O THERMAL: +81 DEGREES C TO -36 DEGREES C (6 CYCLES) 1 X 10<sup>-6</sup> TORR.</p> <p>O HUMIDITY: TESTED ON THE SHOULDER JOINT HUMIDITY TEST.</p> <p>O EMC: MIL-STD-461 AS MODIFIED BY SL-E-0002 (TEST CE01, CE03, CS01, CS02, CS06, RE01, RE02 (N/A, RS01)).</p> <p>FLIGHT CHECKOUT                      -----                      PDOS OPS CHECKLIST (ALL VEHICLES) JSC 16987</p>

RMS/ELEC - 892

PREPARED BY: MFWD SUPERSEDING DATE: 11 SEP 86

DATE: 24 JUL 91 CIL REV: 1

**CRITICAL ITEMS LIST**

PROJECT: SRMS (-3 OR -5 MCIU INSTALLED)  
 ASS'Y NOMENCLATURE: JOINT POWER CONDITIONER

SYSTEM: ELECTRICAL SUBSYSTEM  
 ASS'Y P/N: 517401176

SHEET: 3

FMEA REF.	FMEA REV.	NAME, QTY. & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HWDR / FUNC. 1/1 CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: N/A
3190	2	JOINT POWER CONDITIONER QTY-2 SCHEMATIC DIAGRAM 2563711	<p>MODE: DEGRADED OUTPUT ON ONE OR MORE OUTPUT LINES.</p> <p>CAUSE(S): (1) OPEN CAPACITOR IN OUTPUT LINE. (2) OPEN CAPACITOR IN OUTPUT FILTER.</p>	<p>HIGH RIPPLE IN OUTPUT MAY CAUSE ERRATIC OPERATIONS OF IC'S RESULTING IN ERRATIC ARM RESPONSE, IF DEGRADATION IS BAD ENOUGH O.V. OR O.C. MAY TURN OFF JPC. EFFECT AS IN 3170 (3175 FOR -5 MCIU).</p> <p>WORST CASE ----- UNEXPECTED MOTION SLAGGISH JOINT. UNANNUNCIATED CREW ACTION REQUIRED.</p> <p>REDUNDANT PATHS REMAINING ----- N/A</p>	<p>QA/INSPECTIONS -----</p> <p>UNITS ARE MANUFACTURED UNDER DOCUMENTED QUALITY CONTROLS. THESE CONTROLS ARE EXERCISED THROUGHOUT DESIGN PROCUREMENT, PLANNING, RECEIVING, PROCESSING, FABRICATION, ASSEMBLY, TESTING AND SHIPPING OF THE UNITS. MANDATORY INSPECTION POINTS ARE EMPLOYED AT VARIOUS STAGES OF FABRICATION ASSEMBLY AND TEST. GOVERNMENT SOURCE INSPECTION IS INVOKED AT VARIOUS CONTROL LEVELS.</p> <p>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. DPA 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.</p> <p>WIRE IS PROCURED TO SPECIFICATION MIL-W-22759 OR MIL-W-81301 AND INSPECTED AND TESTED TO NASA JSC8000 STANDARD NUMBER 95A.</p> <p>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.</p> <p>PARTS ARE INSPECTED THROUGHOUT MANUFACTURE AND ASSEMBLY AS APPROPRIATE TO THE MANUFACTURING STAGE COMPLETED. THESE INSPECTIONS INCLUDE,</p> <p>PRINTED CIRCUIT BOARD INSPECTION FOR TRACK SEPARATION, DAMAGE AND ADEQUACY OF PLATED THROUGH HOLES,</p> <p>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 08000A.</p> <p>CONFORMAL COATING INSPECTION FOR ADEQUATE PROCESSING IS PERFORMED USING ULTRAVIOLET LIGHT TECHNIQUES.</p> <p>POST P.C. BD. INSTALLATION INSPECTION, CLEANLINESS AND WORKMANSHIP (SPAR/GOVERNMENT REP. MANDATORY INSPECTION POINT)</p> <p>P.C. BD. INSTALLATION INSPECTION, CHECK FOR CORRECT BOARD INSTALLATION, ALIGNMENT OF BOARDS, PROPER CONNECTOR CONTACT MATING, WIRE ROUTING, STRAPPING OF WIRES ETC.,</p> <p>PRE-CLOSURE INSPECTION, WORKMANSHIP AND CLEANLINESS (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT)</p> <p>PRE-ACCEPTANCE TEST INSPECTION, WHICH INCLUDES AN AUDIT OF LOWER TIER INSPECTION COMPLETION, AS BUILT CONFIGURATION VERIFICATION TO AS DESIGN ETC., (MANDATORY INSPECTION POINT).</p>	

RMS/ELEC - 893

PREPARED BY:

HWG

SUPERSEDING DATE: 11 SEP 86

APPROVED BY:

DATE: 24 JUL 91

CIL REV: 1

**CRITICAL ITEMS LIST**

PROJECT: SRMS (3 OR 5 MLIH INSTALLED)  
 ASS'Y NOMENCLATURE: JOINT POWER CONDITIONER

SYSTEM: ELECTRICAL SUBSYSTEM  
 ASS'Y P/N: 51120F1178 SHEET: 4

FMEA REF.	FMEA REV.	NAME, QTY & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HOWR / FUNC. 1/1 CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: N/A
3190	2	JOINT POWER CONDITIONER QTY-2 SCHEMATIC DIAGRAM 2563711	<p>MODE: DEGRADED OUTPUT ON ONE OR MORE OUTPUT LINES.</p> <p>CAUSE(S):                      (1) OPEN CAPACITOR IN OUTPUT LINE.                      (2) OPEN CAPACITOR IN OUTPUT FILTER.</p>	<p>HIGH RIPPLE IN OUTPUT MAY CAUSE ERRATIC OPERATIONS OF IC'S RESULTING IN ERRATIC ARM RESPONSE, IF DEGRADATION IS BAD ENOUGH O.V. OR O.C. MAY TURN OFF JPC. EFFECT AS IN 3170 (3175 FOR -5 MCIU).</p> <p>WORST CASE                      -----                      UNEXPECTED MOTION SLUGGISH JOINT.                      UNANNUNCIATED CREW ACTION REQUIRED.</p> <p>REDUNDANT PATHS REMAINING                      -----                      N/A</p>	<p>1/1</p>	<p>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).</p> <p>ACCEPTANCE TESTING (ATP) INCLUDES AMBIENT PERFORMANCE, THERMAL AND VIBRATION TESTING, (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT).</p> <p>INTEGRATION OF UNIT TO JOINT SRU - INSPECTIONS INCLUDE GROUNDING CHECKS, CONNECTORS FOR BENT OR PUSHBACK CONTACTS, VISUAL, CLEANLINESS, INTERCONNECT WIRING AND POWER UP TEST TO THE APPROPRIATE JOINT INSPECTION TEST PROCEDURE (ITP) ETC.</p> <p>JOINT LEVEL PRE-ACCEPTANCE TEST INSPECTION, INCLUDES AN AUDIT OF LOWER TIER INSPECTION COMPLETION, AS BUILT CONFIGURATION VERIFICATION TO AS DESIGN ETC.</p> <p>JOINT LEVEL ACCEPTANCE TESTING (ATP) INCLUDES AMBIENT, VIBRATION AND THERMAL-VAC TESTING. (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT).</p> <p>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.</p> <p>SRMS SYSTEMS TESTING - STRONGBACK AND FLAT FLOOR AMBIENT PERFORMANCE TEST. (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT)</p>

RMS/ELEC - 894

**CRITICAL ITEMS LIST**

PROJECT: SRMS (-3 OR -5 MCIU INSTALLED)  
 ASS'Y NOMENCLATURE: JOINT POWER CONDITIONER

SYSTEM: ELECTRICAL SUBSYSTEM  
 ASS'Y P/N: 51140FT176

SHEET: 5

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	MDWR / FUNC. I/I CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: N/A
3190	2	JOINT POWER CONDITIONER QTY-2 SCHEMATIC DIAGRAM 2563711	<p>MODE: DEGRADED OUTPUT ON ONE OR MORE OUTPUT LINES.</p> <p>CAUSE(S):                      (1) OPEN CAPACITOR IN OUTPUT LINE.                      (2) OPEN CAPACITOR IN OUTPUT FILTER.</p>	<p>HIGH RIPPLE IN OUTPUT MAY CAUSE ERRATIC OPERATIONS OF IC'S RESULTING IN ERRATIC ARM RESPONSE, IF DEGRADATION IS BAD ENOUGH O.V. OR O.C. MAY TURN OFF JPC. EFFECT AS IN 3170 (3175 FOR -5 MCIU).</p> <p>WORST CASE                      -----                      UNEXPECTED MOTION SLUGGISH JOINT.                      UNANNUNCIATED CREW ACTION REQUIRED.</p> <p>REDUNDANT PATHS REMAINING                      -----                      N/A</p>	<p>FAILURE HISTORY                      -----</p> <p>THE FOLLOWING FAILURE ANALYSIS REPORT(S) ARE RELEVANT:</p> <p>FAR 3006:                      S/N N/A SEP 78</p> <p>DESCRIPTION                      -----                      POWER CONDITIONER S/N 201, OUT-PUT FLUCTUATING DUE TO DESIGN ERROR</p> <p>CORRECTIVE ACTION                      -----                      ECN 3501-D/2-3304 ADDS ADD'L CAPACITOR</p> <p>FAR 3030:                      S/N 203 FEB 79</p> <p>DESCRIPTION                      -----                      -15 VDC RAIL FLUCTUATED TO -15.432 DUE TO FAULTY TRANSFORMER</p> <p>CORRECTIVE ACTION                      -----                      QUARANTINE JPC 203</p> <p>FAR 3315:                      S/N 304 JAN 82</p> <p>DESCRIPTION                      -----                      FAR-RMS-3312. SPIKES ON ALL POWER RAILS, IMPROPER GROUND ON FILTER-COM</p> <p>CORRECTIVE ACTION                      -----                      FAR-RMS-3312.                      ECN 6510T-394,406                      IMPROVED GROUNDING</p> <p>FAR 3319:                      S/N 306 OCT 82</p> <p>DESCRIPTION                      -----                      NOISE SPIKES ON +15V RAIL. REFER TO FAR 3315.</p> <p>CORRECTIVE ACTION                      -----                      ECN                      6510T/1-492,493,494,495 INCORPORATE DOG TOOTH WASHERS.</p> <p>FAR 3324:                      S/N 305 FEB 83</p>	

RMS/ELEC - 895

**CRITICAL ITEMS LI**

PROJECT: SRM: ( 3 OR -5 MCIU INSTALLED)  
 ASS'Y NOMENCLATURE: JOINT POWER CONDITIONER

SYSTEM: ELECTRICAL SUBSYSTEM  
 ASS'Y P/R: 5114071176

SHEET: 6

FMEA REF.	FMEA REV.	NAME QTY. & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RDMR / FUNC. CRITICALITY RATIONALE FOR ACCEPTANCE SCREENS: N/A
3190	2	JOINT POWER CONDITIONER QTY-2 SCHEMATIC DIAGRAM 2563711	MODE: DEGRADED OUTPUT ON ONE OR MORE OUTPUT LINES.  CAUSE(S): (1) OPEN CAPACITOR IN OUTPUT LINE. (2) OPEN CAPACITOR IN OUTPUT FILTER.	HIGH RIPPLE IN OUTPUT MAY CAUSE ERRATIC OPERATIONS OF IC'S RESULTING IN ERRATIC ARM RESPONSE. IF DEGRADATION IS BAD ENOUGH O.V. OR O.C. MAY TURN OFF JPC. EFFECT AS IN 3170 (3175 FOR -5 MCIU).  WORST CASE ----- UNEXPECTED MOTION SLAGGISH JOINT. UNANNUNCIATED CREW ACTION REQUIRED.  REDUNDANT PATHS REMAINING ----- N/A	DESCRIPTION ----- "0" VOLT LEVEL TOO HIGH. FOUND DIODE MOUNTED BACKWARDS, POOR WORKMANSHIP.  CORRECTIVE ACTION ----- REPLACED DIODE

RMS/ELEC - 896

PREPARED BY: MFUG

SUPERSEDING DATE: 11 SEP 86

DATE: 26 JUL 91

CTL REV: 1

**CRITICAL ITEMS LIST**

PROJECT: SRMS (-3 OR -5 MCIU INSTALLED)  
 ASS'Y NOMENCLATURE: JOINT POWER CONDITIONER

SYSTEM: ELECTRICAL SUBSYSTEM  
 ASS'Y P/N: 51140FT176

SHEET: 7

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HWR / FUNC. I/I CRITICALITY RATIONALE FOR ACCEPTANCE SCREENS: N/A
3190	2	JOINT POWER CONDITIONER QTY-2 SCHEMATIC DIAGRAM 2563711	<p>MODE: DEGRADED OUTPUT ON ONE OR MORE OUTPUT LINES.</p> <p>CAUSE(S):                      (1) OPEN CAPACITOR IN OUTPUT LINE.                      (2) OPEN CAPACITOR IN OUTPUT FILTER.</p>	<p>HIGH RIPPLE IN OUTPUT MAY CAUSE ERRATIC OPERATIONS OF IC'S RESULTING IN ERRATIC ARM RESPONSE. IF DEGRADATION IS BAD ENOUGH O.V. OR O.C. MAY TURN OFF JPC. EFFECT AS IN 3170 (3175 FOR -5 MCIU).</p> <p>WORST CASE                      -----                      UNEXPECTED MOTION SLUGGISH JOINT. UNANNUNCIATED CREW ACTION REQUIRED.</p> <p>REDUNDANT PATHS REMAINING                      -----                      N/A</p>	<p>OPERATIONAL EFFECTS                      -----</p> <p>ARM DOES NOT RESPOND PROPERLY TO HAND CONTROLLER COMMANDS OR AUTO SEQUENCES. CREW INHERENTLY COMPENSATES FOR ANY UNDESIRED ARM TRAJECTORY IN MANUAL AUGMENTED MODES.</p> <p>CREW ACTION                      -----</p> <p>APPLY BRAKES. SELECT BACKUP.</p> <p>CREW TRAINING                      -----</p> <p>THE CREW WILL BE TRAINED TO OBSERVE WHETHER THE ARM IS RESPONDING PROPERLY TO COMMANDS. IF IT ISN'T, APPLY BRAKES.</p> <p>MISSION CONSTRAINT                      -----</p> <p>OPERATE UNDER VERNIER RATES WITHIN 10 FT OF STRUCTURE. THE OPERATOR MUST BE ABLE TO DETECT THAT THE ARM IS RESPONDING PROPERLY TO COMMANDS VIA WINDOW AND/OR CCTV VIEWS DURING ALL ARM OPERATIONS. AUTO TRAJECTORIES MUST BE DESIGNED TO COME NO CLOSER THAN 5 FT FROM STRUCTURE.</p> <p>OMRSD OFFLINE                      -----</p> <p>VERIFY ABE DATA FOR JPC FAIL FLAGS AND FOR DATA WRAPAROUND</p> <p>OMRSD ONLINE INSTALLATION                      -----</p> <p>NONE</p> <p>OMRSD ONLINE TURNAROUND                      -----</p> <p>VERIFY THAT ABE WARNING IS NOT PRESENT                      DRIVE EACH JOINT IN SINGLE. VERIFY TACHO SIGNATURE.</p>

RMS/ELEC - 897

PREPARED BY:

MFUG

SUPERSEDING DATE: 11 SEP 86

APPROVED BY:

DATE: 24 JUL 91

CIL REV: 1