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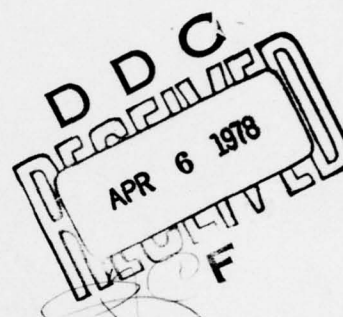


TECHNICAL NOTE

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CHECKLISTS FOR THE  
QUALITATIVE ASSESSMENT OF  
MAINTAINABILITY DESIGN FEATURES

30 November 1977



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Prepared for  
U.S. AIR FORCE TEST AND EVALUATION CENTER  
Kirtland Air Force Base  
New Mexico 87115

Under Contract F29601-77-C-0091

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MAINTAINABILITY DESIGN FEATURES,

9 Technical note,

11 30 November 1977

12 57 p.

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A Checklists for the Qualitative Assessment of  
Maintainability Design Features . . . . . A-1

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INTRODUCTION

Under contract F29601-77-C-0091 with the Air Force Test and Evaluation Center (AFTEC), Kirtland Air Force Base, New Mexico, ARINC Research Corporation performed a document search and developed a series of checklists for the qualitative assessment of maintainability design features. This report presents the results of the checklist development efforts. ↑

2  
DATA COLLECTION AND REVIEW

Initial efforts were the identification, collection and review of documents that were potentially applicable to the development of the checklists. A total of 43 documents were identified. From this total, 21 were selected as directly applicable to the projects, 20 additional documents were duplicative of more informative sources or were not applicable for other reasons, and two were unobtainable within the time frame allotted for the project. A complete list of these documents is provided in Table 1.

TABLE 1. LIST OF DOCUMENTS

Document Number	Title
<u>APPLICABLE</u>	
AMCP 706-134	Engineering Guide for Design Maintainability Guide for Design
NAVORD OD 39223	Maintainability Engineering Handbook
AD 441653	Maintainability Engineering Guide
AD 409761	Checklist of Human Engineering Design Considerations
AD A037446	Update to R&M Planning Guide for Army Aviation Systems and Components
ARINC Publication 530-01-0-762	Reliability and Maintainability for U. S. Weather Bureau
AFSC DH 1-X	Checklist for General Design Criteria
AD 477288	Human Engineering Checklist
MIL-STD-803	Human Factors Engineering
MIL-STD-1472B	Human Factors Engineering
AFSC DH 1-3	Human Factors Engineering Design Handbook
Cunningham & Cox, 1972	Applied Maintainability Engineering
AD 101729	Guide to Design of Electronic Equipment for Main- tainability
AD 269332	Guide to Design of Mechanical Equipment for Main- tainability
AD 271477	Guide to Integrated System Design for Maintain- ability
AMCP 706-132	Maintenance Engineering Techniques Handbook
AD 828506	Maintainability Design Criteria
AD 275889	Designer's Checklist for Improving Maintainability
DLSIE #33513A	A Qualitative Maintainability Study of Range Only Radar
DH 1-9	AFSC System Command Design Handbook 1-9 Maintain- ability, 3rd Ed. - June 1976
DH 1-2	AFSC Design Handbook General Design Factors DH 1-2
<u>NOT APPLICABLE OR DUPLICATIVE</u>	
AD 905566L	Maintainability of Air Force Ground Systems
DLSIE #36455A	A Low Level Look at Maintenance and Maintainability

TABLE 1. LIST OF DOCUMENTS (continued)

Document Number	Title
DLSIE #32447	Reliability and Maintainability Planning Guide for Army Aviation Systems and Components (Handbook)
DLSIE #30080	Maintainability Analysis of Major Helicopter Components
DLSIE #33142	Army Aircraft Subsystems and Component Installation Design Investigations
DLSIE #23932A	Maintainability Engineering Design Notebook, Rev. II, and Cost of Maintainability
DLSIE #29606H	Designed for Maintainability for Product Integrity
DLSIE #22843	Maintenance Evaluation: A Tool for Effective Maintenance Engineering
AD 910954L	Maintainability Demonstration Inspections
AD 462253L	HMSH Maintainability Plan for the Programmer Definition Phase
AD 023840	Maintainability Methodology and Procedures
AD 870846	Methods for the Accomplishment of Integrated Support
AD 471857	Maintainability Engineering Guide (Note: This document is a duplicate of AD 441653)
AD 460991	Maintainability Design Factors and Operations Analysis
AD 918945	Procedures and Methodology for Logistic Support
AD 460371	Maintainability and Weapon System Management
AD 891386	An Analysis of Reliability and Maintainability in Weapon Systems Design
AD 461728	C-141A System Maintainability Evaluation Plan
AD 35382G	Orbital Space Station Study Vol. II-3, Parameter System Definition, System Considerations
AD A023890	Maintainability Methodology: Procedures
<u>NOT RECEIVED/DELETED FROM PROJECT</u>	
AD 470377	The Design of Electronic Equipment for Ease of Maintenance
(Unattainable)	Boeing Co. Report #13 Maintainability Checklist, Selective Study

Prior to the actual development of checklists, categories of subjects applicable to the qualitative assessment of maintainability features were developed. Additionally, a method was developed for coding the subject categories and the source documents for each question presented in the checklists. A typical listing follows:

AC001      A3/DN2G3/P2.4.2,A      Are captive fasteners used whenever feasible?

This coding format was developed for use with 80 column automatic data processing (ADP) cards. In the following explanation of the coding, the column numbers refer to those on ADP cards:

- |                       |   |
|-----------------------|---|
| Columns 1 through 5   | - Item identifiers  |
| Columns 1 and 2       | - Categories (see Table 2)  |
| Columns 3 - 5         | - Subcategories and item numbers  |
| Column 6              | - Plus (+) continuation card  |
| Columns 7 through 26  | - Reference source code   |
| Columns 7 and 8       | - Alpha number source code unique identifiers (see Table 3)   |
| Columns 9 - 26        | - Identifies the page, design note or other reference within the document. Additionally, Tables (T), Figures (F) or Paragraphs (P) are identified from which the checklist item was extracted. These letter designators are followed by the table, figure or paragraph numbers. |
| Column 27             | - Blank   |
| Columns 28 through 78 | - Text  |
| Columns 79 and 80     | - Blank   |



Table 2 presents a listing of subject categories covered by the checklists. Table 3 provide a cross reference of the source code designators to the documents utilized in preparing the checklists. Appendix A is a print-out of the detailed checklists.

TABLE 2. CHECKLIST SUBJECT CATEGORIES

- AA - Cabling
- AB - Connectors
- AC - Fasteners
- AD - Miscellaneous Fittings
- AE - Breakers and Fuses
  
- AB - Accessibility
- BB - Accesses
  
- CA - Controls-General Criteria
- CB - Types of Controls
  
- DA - Displays-General Criteria
- DB - Types of Displays
- DC - Display Construction
- DD - Control-Display Relationships
  
- EA - Construction-General Criteria
- EA1 - Component Location and Orientation
- EA2 - Cases, Covers, Handles, Racks and Chassis
- EA3 - Packaging/Modularization
- EA4 - Standardization
  
- FA - Interchangeability
  
- GA - Identification/Marking
  
- HA - Safety
  
- IA - Test Equipment
  
- JA - Test Points
  
- KA - Tool Requirements
  
- LA - Trouble Shooting Aids
  
- MA - Human Factors, General
- MA1 - Standing Tasks
- MA2 - Seated Tasks
- MA3 - Environment
  
- NA - Maintenance Design Criteria
  
- OA - Maintenance Tasks

TABLE 3. SOURCE CODE LISTING

Designator	Document Number	Title
A1	NAVORD OD 39223	Maintainability Engineering Handbook
A2	AFSC DH 1-X	Checklist of General Design Criteria
A3	AFSC DH 1-3	Human Factors Engineering
A4	AFSC DH 1-9	Maintainability
A5	AFSC DH 1-2	General Design Factors
B1	MIL-STD-803	Human Factors Engineering
B2	MIL-STD-1472B	Human Factors Engineering
C1	AMCP 706-134	Maintainability Guide for Design
C2	AMCP 706-132	Engineering Design Handbook
L1	AD* 441653	Maintainability Engineering Guide
L2	AD 409761	Checklist of Human Engineering Design Considerations
L3	AD A037446	Update to R&M Planning Guide for Army Aviation Systems and Components
L4	ARINC Pub. 530-01-1-762	Reliability and Maintainability Handbook for U.S. Weather Bureau
L5	AD 1-1729	Guide to Design of Electronic Equipment for Maintainability
L6	AD 477288	Human Engineering Checklist
L7	AD 275889	Designers Checklist for Improving Maintainability
L8	AD 828506	Maintainability Design Criteria
L9	AD 271477	Guide to Integrated System Design for Maintainability
L10	AD 269332	Guide to Design of Mechanical Equipment for Maintainability
L11	DLSIE** #33513A	A Qualitative Maintainability Study of Range Only Radar
I1	None	Applied Maintainability Engineering, Cunningham and Cox, Wiley Interscience Publication N.Y. 1972

\*AD = Defense Documentation Center #  
 \*\*DLSIE = Defense Logistic Support Information Exchange

APPENDIX A

CHECKLISTS FOR THE  
QUALITATIVE ASSESSMENT OF  
MAINTAINABILITY DESIGN FEATURES

CABLING

AA001	A3/DN2G3/P3.1.A1	ARE CABLES LONG ENOUGH TO PERMIT EACH UNIT TO BE CHECKED IN A CONVENIENT PLACE?
AA001+		CAN UNITS IN DRAWERS AND SLIDE OUT RACKS BE PULLED OUT FOR MAINTENANCE WITH OUT BREAKING ELECTRICAL CONNECTIONS?
AA002	A3/DN2G3/P3.1.A2	DOES WIRING ROUTED TO MOVING PARTS PERMIT EASY MOVEMENT WITHOUT STRESS?
AA002+		ARE SERVICE LOOPS PROVIDED ON CABLES TO PERMIT MOVEMENT OF SLIDING CHASSIS OR HINGED DOORS?
AA025	11/174/P11	DO CABLE LENGTHS PERMIT MOVING OR ROTATING UNITS TO MORE CONVENIENT POSITION FOR CONNECTING AND DISCONNECTING?
AA025+		DO METHODS OF ATTACHING CABLES TO UNITS THAT ARE ON SLIDING RACKS PRECLUDE DAMAGE WHEN THE UNIT IS EXTENDED?
AA033	A1/8-11/F8-5.15	CAN CABLE CONNECTORS BE EASILY REACHED FOR REPLACEMENT OR REPAIR?
AA033+		ARE CABLE HARNESSSES DESIGNED TO BE BUILT AND INSTALLED AS A PACKAGE?
AA036	C1/23-25/T23-3.2	ARE PREFORMED CABLES USED WHERE POSSIBLE?
AA036+		DO CABLES IN JUNCTION BOXES FAN-OUT FOR EASE OF CHECKING AND TROUBLE-SHOOTING AND ARE THEY CLEARLY IDENTIFIED?
AA036+		DO LEADS FAN-OUT TO PROVIDE WORKSPACE AND PREVENT MISCONNECTION?
AA039	C1/23-25/T23-3.8	ARE CABLE COLOR CODES SELECTED TO PRECLUDE CONFUSION DUE TO LACK OF CONTRAST OR POOR ILLUMINATION?
AA039+		ARE ALL CABLES COLOR CODED AND BOTH ENDS TAGGED?
AA039+		ARE CABLES ROUTED SO THAT THEY NEED NOT BE REPEATEDLY BENT OR TWISTED DURING MAINTENANCE?
AA003	A3/DN2G3/P3.1.A3	ARE CABLES ROUTED SO THAT THEY ARE READILY ACCESSIBLE TO THE TECHNICIAN?
AA003+		ARE INPUT/OUTPUT CABLES TO UNITS TERMINATED ON OTHER THAN CONTROL OR DISPLAY SURFACES OF CABINETS?
AA004	A3/DN2G3/P3.1.C	DO TEST CABLE RUNS AVOID INTERFERING WITH CONTROLS AND DISPLAYS?
AA004+		ARE CABLES DESIGNED AND ROUTED TO AVOID SOLDERING IRON BURNS DURING MAINTENANCE?
AA032	A1/8-11/F8-5.5	HAS ADEQUATE SPACE BEEN ALLOWED FOR HARNESSSES AND FOR BREAKOUTS TO CONNECTORS?
AA005	A3/DN2G3/P3.1.D	ARE HEAVY WIRES BROUGHT TO LARGE ENOUGH TERMINALS?
AA005+		ARE CABLES/WIRES ROUTED TO AVOID LYING ACROSS REMOVABLE UNITS OR ACROSS FASTENERS?
AA029	11/174/P20	ARE CABLES RUN SO AS TO PREVENT THEIR COMING IN CONTACT WITH MOVABLE PARTS?
AA029+		ARE CABLES ROUTED TO PRECLUDE PINCHING BY DOORS, COVERS, LATCHES, ETC.?
AA037	C1/23-25/T23-3.4	ARE WIRES WITHIN CABLES TRACEABLE BY POSITION/COLOR?
AA037+		IS WIRING CODED, TAGGED, LABELED, ETC. WITH THE TYPE AND SOURCE OF SIGNAL?
AA037+		ARE CABLES AND WIRING STANDARDIZED IN TYPE, SIZE AND FIXTURES?
AA038	C1/23-25/T23-3.4	IS WIRING PROTECTED IN RACEWAYS, STUFFING TUBES, AND CONDUIT?
AA006	A3/DN2G3/P3.2.A	IS WIRING SECURED BY QUICK RELEASE, NON-CONDUCTIVE CLAMPS OR PLATES?
AA006+		IS WIRING SUPPORTED AT BOTH ENDS OF BENDS?
AA007	A3/DN2G3/P3.2.A	DOES WIRE/CABLE ROUTING PRECLUDE BLOCKING ACCESS OR OTHERWISE INTERFERING WITH MAINTENANCE?
AA007+		IS WIRING ROUTED TO FACILITATE TRACING AND REPAIR?
AA008	L6/26/P10	IS WIRING ROUTED SO THAT IT WILL BEAR MINIMUM LOAD
AA008+		
AA009	L6/26/P11	
AA009+		
AA010	L4/5-50	
AA010+		
AA011	L4/5-50	
AA011+		
AA012	L4/5-50	
AA013	L4/5-50	
AA013+		
AA014	L4/5-50	
AA014+		
AA016	L4/5-46	
AA016+		
AA017	11/174/P2	
AA017+		
AA027	11/174/P14	
AA027+		
AA018	11/174/P3	
AA018+		
AA019	11/174/P4	
AA019+		
AA020	11/174/P5	
AA020+		
AA021	11/174/P6	
AA022	11/174/P7	
AA022+		
AA023	11/174/P9	
AA024	11/174/P10	

AA024+ AND WILL DISCONNECT BEFORE BREAKING?  
 AA025 I1/174/P11 DOES WIRING ROUTED TO MOVING PARTS PERMIT  
 AA025+ EASY MOVEMENT WITHOUT STRESS?  
 AA026 I1/174/P12 DO WIRING LENGTHS PERMIT CONVENIENT TESTING OR  
 AA026+ REMOVAL OF UNITS?  
 AA028 I1/174/P17 ARE REQUIRED EXTENSION CABLES PROVIDED, ALONG WITH  
 AA028+ ADEQUATE STORAGE SPACE?  
 AA031 A1/8-11/F8-5.3 ARE CABLES FOR INSTALLATION OF A GIVEN TYPE OF  
 AA031+ EQUIPMENT THE SAME LENGTH?  
 AA034 A1/8-11/F8-5.15 IS A SIMPLE MEANS PROVIDED FOR STORING CABLES USED  
 AA034+ IN SERVICE AND TEST EQUIPMENT?  
 AA035 A1/8-11/F8-5.18 ARE CABLE ENTRANCES ON FRONT OF CABINETS AVOIDED?  
 AA041 C1/23-25/T23-3.10 IS ELECTRICAL WIRING ROUTED AWAY FROM ALL LINES  
 AA041+ THAT CARRY FLAMMABLE FLUIDS OR OXYGEN?  
 AA042 C1/23-25/T23-3.11 DOES THE CABLE CONDUIT DESIGN PRECLUDE THE  
 AA042+ COLLECTION OF WATER OR DERRIS WHICH COULD CAUSE  
 AA042+ MALFUNCTIONING OF UNITS?  
 AA043 C1/23-25/T23-3.12 IS DIRECT ROUTING OF CABLES/WIRES THROUGH  
 AA043+ CONGESTED AREAS AVOIDED WHEN POSSIBLE?

#### CONNECTORS

AB044 A3/DN2G3/P2.1.3.D DO TERMINALS TO WHICH WIRES ARE TO BE SOLDERED HAVE  
 AB044+ ADEQUATE SEPARATION SO THAT WORK ON ONE TERMINAL DOES  
 AB044+ NOT DAMAGE THOSE NEARBY?  
 AB045 A3/DN2G3/P2.1.3.E ARE TERMINALS OR OTHER CONNECTIONS TO WHICH WIRES ARE  
 AB045+ TO BE SOLDERED DESIGNED LONG ENOUGH TO PRECLUDE  
 AB045+ DAMAGE BY THE SOLDERING IRON?  
 AB047 A3/DN2G3/P2.1.3.B HAVE THE ENDS OF WIRES SOLDERED TO TERMINALS BEEN  
 AB047+ LEFT OUT OF THE SOLDER SO THAT THEY ARE EASY TO  
 AB047+ REMOVE?  
 AB019 C1/23-26/T23-3.19 CAN WIRES BE UNSOLDERED AND REMOVED WITHOUT DAMAGING  
 AB019+ LUGS?  
 AB032 A3/DN2G3/P3.3.F ARE PLUGS USED IN WHICH THE ALIGNING PINS OR KEYS  
 AB032+ EXTEND BEYOND THE ELECTRICAL PINS TO PROTECT THE  
 AB032+ ELECTRICAL PINS FROM DAMAGE?  
 AB031 A3/DN2G3/P3.3.E ARE PLUGS WITH SELF LOCKING SAFETY CATCHES USED IN  
 AB031+ PREFERENCE TO PLUGS THAT MUST BE SAFETY WIRED?  
 AB028 A3/DN2G3/P3.3.A ARE PLUGS AND MATCHING RECEPTACLES USED THAT PRECLUDE  
 AB028+ CONNECTING THE TWO INCORRECTLY?  
 AB005 C1/23-25/T23-3.5 IS THE USE OF SPECIAL ADAPTERS FOR THE SAKE OF  
 AB005+ STANDARDIZATION AVOIDED SINCE THESE ARE OFTEN LOST?  
 AB038 A3/DN2G3/P3.4.C ARE CONNECTORS USED IN WHICH ELECTRICAL CONTACTS  
 AB038+ CANNOT BE SHORTED BY EXTERNAL OBJECTS?  
 AB007 C1/23-25/T23-3.6 ARE ADEQUATE COVERS PROVIDED ON ELECTRICAL CONNECTORS  
 AB007+ TO PREVENT FOREIGN MATTER FROM SHORTING OUT THE  
 AB007+ CONNECTOR?  
 AB030 A3/DN2G3/P3.3.D ARE QUICK DISCONNECT PLUGS OR PLUGS THAT CAN BE  
 AB030+ DISCONNECTED WITH NO MORE THAN ONE TURN USED RATHER  
 AB030+ THAN PLUGS WITH FINE THREADS THAT REQUIRE MANY TURNS?  
 AB033 A3/DN2G3/P3.3.G ARE SYMMETRICAL ARRANGEMENTS OF ALIGNING PINS OR KEYS  
 AB033+ AVOIDED TO PREVENT INSERTION OF PLUGS 180 DEGREES  
 AB033+ FROM THE CORRECT POSITION?  
 AB010 C1/23-26/T23-3.10 ARE ELECTRICAL TERMINALS PLAINLY MARKED + OR - SINCE  
 AB010+ THE CAPS WHICH ARE USUALLY MARKED MAY BE LOST?  
 AB029 A3/DN2G3/P3.3.B ARE PAINTED STRIPES, ARROWS, OR OTHER INDICATIONS USED  
 AB029+ ON PLUGS AND RECEPTACLES TO SHOW THE PROPER POSITION  
 AB029+ OF KEYS AND ALIGNING PINS FOR PROPER INSERTION?  
 AB012 C1/23-26/T23-3.12 IS THE USE OF IDENTICAL FITTINGS AVOIDED BY  
 AB012+ STAGGERING LOCATION, VARYING LENGTHS, SIZE OR SHAPE, OR  
 AB012+ BY SYMBOL OR COLOR CODING?  
 AB059 L6/27/P8 ARE CONNECTING PLUGS AND RECEPTACLES IDENTIFIED BY  
 AB059+ COLOR, SHAPE, OR OTHER ACCEPTABLE MEANS?  
 AB013 C1/23-26/T23-3.13 ON CABLE CONNECTED REMOVABLE UNITS, WILL PLUG AND  
 AB013+ RECEPTACLE DISCONNECT BEFORE THE CABLE BREAKS?  
 AB014 C1/23-26/T23-3.14 ARE CONNECTORS LOCATED FOR EASY ACCESSIBILITY FOR  
 AB014+ REPAIR OR REPLACEMENT?  
 AB043 A3/DN2G3/P2.1.3.C ARE U-LUGS USED RATHER THAN O-LUGS WHENEVER

AR043+	PRACTICABLE?
AB047 L1/78/P4,C	ARE CONNECTORS SELECTED TO PRECLUDE THE USE OF SPECIAL TOOLS?
AB047+	ARE CONNECTORS FOR AUXILIARY EQUIPMENT USED THAT DO NOT REQUIRE TOOLS FOR THEIR OPERATION?
AR016 C1/23-26/T23-3.16	DO CONNECTORS REQUIRE NO MORE THAN ONE FULL TURN TO CONNECT TEST EQUIPMENT TO A TEST POINT?
AR016+	IF TOOLS MUST BE USED TO OPERATE CONNECTORS,ARE ONLY STANDARD TOOLS REQUIRED?
AB018 C1/23-26/T23-3.18	ARE CONNECTORS DESIGNED WITH SURFACES WHICH WILL NOT GOUGE OR BE GOUGED DURING MATING?
AR018+	ARE CONNECTORS DESIGNED TO PERMIT FOOLPROOF ALIGNMENT UNDER FIELD CONDITIONS WITHOUT PIN BENDING?
AB017 C1/23-26/T23-3.17	ARE PLUGS AND RECEPTACLES ARRANGED SO THAT THE ALIGNMENT PINS ARE ORIENTED IN THE SAME DIRECTION THROUGHOUT THE SYSTEM?
AB017+	ARE CONNECTORS DESIGNED TO TRANSMIT AND MAINTAIN ADEQUATE FORCE TO CONTACT SURFACES?
AB020 A2/DN4E3/P1.4	ARE CONNECTORS DESIGNED TO PREVENT ENTRY OF MOISTURE, FUMES,CONTAMINANTS,AND FOREIGN OBJECTS?
AB020+	DOES ADEQUATE CONTACT FLOATING EXIST TO PERMIT INSERTION WITHOUT BINDING?
AB021 A2/DN4E3/P1.5	ARE GUIDE PINS PROPERLY PLACED TO REDUCE BENDING, GOUGING,AND ABRASION DUE TO MISALIGNMENT?
AB021+	ARE PLUGS OR RECEPTACLES PROVIDED WITH ALIGNMENT PINS OR OTHER ALIGNMENT DEVICES?
AB058 L6/27/P7	DOES ADEQUATE WORKSPACE AND TOOL CLEARANCE SURROUND EACH CONNECTOR?
AB058+	ARE PLUGS AND RECEPTACLES USED FOR CONNECTING CABLES TO EQUIPMENT UNITS,RATHER THAN "PIGTAILING"TO TERMINAL BLOCKS?
AB058+	ARE PLUGS WITH INTEGRAL TEST POINTS USED FOR EACH INPUT AND OUTPUT THAT CANNOT OTHERWISE BE EASILY CHECKED?
AB022 A2/DN4E3/P 1.6	IS THE REAR OF THE PLUG ACCESSIBLE FOR TESTING WHERE PRACTICABLE?
AB022+	ARE "HOT" RECEPTACLES AND"COLD"PLUGS USED?
AB027 A2/DN4E3/P2.9	ARE PLUG IN CONTACTS IN PREFERENCE TO SCREW TERMINALS RATHER THAN SOLDER CONNECTIONS USED ?
AB027+	ARE SPARE TERMINALS ON TERMINAL STRIPS AND CONNECTORS PROVIDED?
AB024 A2/DN4E3/P2.4	IS EACH PIN ON EACH PLUG IDENTIFIED ?
AB024+	ARE PLUG IN BOARDS KEYED TO PREVENT IMPROPER INSERTION?
AB025 A2/DN4E3/P2.5	ARE REAR OF PLUG CONNECTORS ACCESSIBLE FOR TEST AND SERVICE,EXCEPT WHERE POTTING,SEALING OR OTHER CONSIDERATIONS PRECLUDE THIS?
AB025+	ARE CONTACT PINS LARGE ENOUGH TO RESIST BEING BENT ON INSERTION AND WITHDRAWAL OF THE CONNECTOR?
AB055 L6/27/P4	ARE PROTECTIVE COVERS PROVIDED FOR CONNECTORS WHEN THEY ARE DISCONNECTED?
AB055+	ARE PLUGS THAT ARE ENCLOSED IN METAL COVERS USED WHEN PRACTICABLE?
AB078 I1/155/P5	ARE CONNECTORS PROVIDED WHENEVER EQUIPMENT SEPARATION IS LIKELY?
AB078+	ARE CONNECTORS VISIBLE,REACHABLE,AND OPERABLE WITHOUT DISASSEMBLY?
AB078+	ARE CONNECTORS OPERABLE BY HAND AND REPLACEABLE WITH COMMON TOOLS?
AB048 L1/97/P37	CAN EACH CONNECTOR BE REMOVED WITHOUT DISTURBING OTHERS?
AB048+	ARE CONNECTOR MOUNTING POINTS SUPPORTED AGAINST BREAKAGE?
AB048+	ARE ALL RECEPTACES,TERMINAL BOARDS,ETC.READILY REPLACEABLE?
AB036 A3/DN2G3/P3.4,A	ARE EXTRA CONNECTORS,PINS,RECEPTACLES PROVIDED AS
AB036+	
AB036+	
AR080 I1/155/P8	
AB080+	
AR039 A3/DN2G3/P3.4,0	
AR041 A3/DN2G3/P2.1.3,A	
AR041+	
AR071 A1/8-12/F8-6.10	
AB071+	
AB044 A1/8-12/F8-6.3	
AB051 L1/97/P42	
AB051+	
AB054 L6/27/P3	
AB054+	
AB054+	
AB072 A1/8-12/F8-6.12	
AB072+	
AB073 A1/8-12/F8-6.13	
AB073+	
AB074 A1/8-12/F8-6.15	
AB074+	
AB075 I1/155/P1	
AB075+	
AB076 I1/155/P3	
AB076+	
AB077 I1/155/P4	
AR077+	
AB079 I1/155/P7	
AB079+	
AB083 I1/155/P13	
AB083+	
AB084 I1/155/P16	
AB084+	
AR085 I1/155/P17	

AB085+  
AB087 11/155/P 20  
AB087+

APPROPRIATE?  
ARE CONNECTORS LABELED/CODED ACCORDING TO FUNCTION,  
CIRCUIT ETC?

FASTENERS

AC001 A3/DN2G3/P2.4.2.A  
AC024 C1/21-12/T21-1.6  
AC024+  
AC033 C1/21-13/T21-1.15  
AC033+  
AC034 C1/21-13/T21-1.16  
AC002 A3/DN2G3/P2.4.2.B  
AC002+  
AC009 L6/28/PJ.2  
AC009+  
AC004 A3/DN2G3/F2.4.2D  
AC004+  
AC004+  
AC005 A3/DN2G3/P2.4.2.E  
AC005+  
AC059 11/160/13  
AC059+  
AC006 A3/DN2G3/P2.4.2.F  
AC006+  
AC041 C1/21-13/T21-1.23  
AC054 11/160/P7  
AC054+  
AC042 C1/21-13/T21-1.24  
AC042+  
AC055 11/160/P8  
AC008 A3/DN2G3/P2.4.2.H  
AC008+  
AC008+  
AC026 C1/21-12/T21-1.8  
AC026+  
AC071 L1/80/P13.H  
AC071+  
AC011 L6/28/PJ.6  
AC011+  
AC011+  
AC011+  
AC070 11/160/25  
AC070+  
AC073 A3/DN2G3/2.1.2.B  
AC073+  
AC072 L1/99/P13  
AC072+  
AC040 C1/21-13/T21-1.22  
AC021 C1/21-12/T21-1.3  
AC021+  
AC023 C1/21-12/T21-1.5  
AC023+  
AC016 A2/DN2D1/P1.5  
AC016+  
AC016+  
AC016+  
AC016+  
AC025 C1/21-12/T21-1.7  
AC025+  
AC045 C1/21-13/T21-1.27  
AC045+  
AC018 L4/5-49  
AC061 11/160/15  
AC064 11/160/19  
AC060 11/160/14  
AC060+  
AC056 11/160/P9  
AC056+

ARE CAPTIVE FASTENERS USED WHENEVER FEASIBLE?  
ARE MOUNTING BOLTS DESIGNED TO BE SEMI-PERMANENTLY  
CAPTIVE (WITH SNAP-ON COLLARS)?  
WHEN TOOL DRIVEN SCREWS MUST BE USED, CAN THEY BE  
DRIVEN BY MORE THAN ONE TYPE OF STANDARD TOOL?  
ARE ACCESS COVER FASTENERS OF THE CAPTIVE TYPE?  
IS MAXIMUM USE MADE OF TONGUE AND SLOT FEATURES TO  
MINIMIZE THE NUMBER OF FASTENERS REQUIRED?  
ARE THE NUMBER AND DIVERSITY OF FASTENERS MINIMIZED  
COMMENSORATE WITH STRUCTURAL REQUIREMENTS?  
ARE FASTENERS LOCATED SO THAT THEY CAN BE REACHED  
EASILY FROM CONVENIENT WORKING POSITIONS WHEN THE  
UNIT IS IN ITS NORMAL, INSTALLED POSITION?  
ARE FASTENERS ON COVERS OPERABLE EITHER MANUALLY OR  
WITH STANDARD HAND TOOLS?  
IS REPLACEMENT OF STRIPPED, WORN OR DAMAGED FASTEN-  
ERS POSSIBLE?  
ARE FASTENERS USED WHICH REQUIRE ONLY PART OF A  
TURN OR A SNAP ACTION TO FASTEN OR UNFASTEN?  
IS MAXIMUM USE MADE OF QUICK RELEASE FASTENERS?  
CAN FASTENERS BE OPERATED WITH ONE HAND, ONE TOOL,  
BY ONE MAN?  
HAVE CLAMPS, FASTENERS, ETC. BEEN SELECTED TO ALLOW  
FASTENING WITH ONE HAND?  
IS THE NUMBER OF TURNS TO REMOVE FASTENERS MINIMAL?  
WHEN PRACTICABLE, ARE THE SAME SIZE AND TYPE OF  
FASTENERS USED FOR ALL COVERS AND CASES ON A GIVEN  
PIECE OF EQUIPMENT?  
IS NO MORE THAN ONE THREAD SIZE PER BOLT SIZE USED  
IN A GIVEN EQUIPMENT?  
DO ALL SET SCREWS WITHIN THE SAME EQUIPMENT HAVE  
THE SAME TYPE AND SIZE HEAD?  
IF COMPATIBLE WITH STRESS AND LOAD CONSIDERATIONS,  
DO FASTENERS FOR MOUNTING ASSEMBLIES, SUBASSEMBLIES,  
ETC. FASTEN OR UNFASTEN WITH A MAXIMUM OF ONE  
COMPLETE TURN?  
ARE HINGES, CATCHES, ETC. USED TO REDUCE THE NUMBER  
OF FASTENERS REQUIRED?  
ARE HAND RATHER THAN TOOL OPERATED FASTENERS USED  
WHENEVER POSSIBLE?  
IS THE USE OF FASTENERS REQUIRING SPECIAL TOOLS  
AVOIDED?  
ARE SPECIAL FASTENERS PROPERLY MARKED OR CODED?  
WHEN TOOL OPERATED FASTENERS ARE REQUIRED, ARE ONLY  
THOSE OPERABLE WITH STANDARD TOOLS USED?  
WHEN HIGH TORQUE IS REQUIRED, ARE EXTERNAL HEX HEAD  
BOLTS USED?  
IS THE USE OF FASTENERS OF THE SAME DIAMETER HAVING  
THE SAME GRIP LENGTH BUT DIFFERENT SHANK LENGTH OR  
THOSE HAVING THE SAME SHANK LENGTH BUT DIFFERENT  
GRIP LENGTH AVOIDED WHERE THEY COULD BE INADVER-  
TENTLY INTERCHANGED?  
ARE MOUNTING BOLTS OR FASTENERS IDENTIFIED ACCORD-  
ING TO DISASSEMBLY INSTRUCTIONS?  
IS THE LENGTH OF THE BOLT ADEQUATE (MINIMUM OF TWO  
THREAD LENGTHS SHOWING)?  
ARE ALL FASTENERS LARGE ENOUGH?  
ARE WINGED NUTS USED IN PREFERENCE TO KNURLED NUTS?  
ARE SAFETY WIRING AND COTTER KEYS AVOIDED?  
ARE COMBINATION HEADS (DEEP SLOT AND HEX) USED TO  
ALLOW ALTERNATE TOOL USE?  
DOES ADEQUATE WORKING AND TOOL CLEARANCE SURROUND  
EACH FASTENER?



AC028 C1/21-12/T21-1.10	ARE ASSEMBLIES AND UNITS DESIGNED TO BE REPLACEABLE BY STANDARD TOOLS?
AC028+	
AC029 C1/21-12/T21-1.11	ARE GUIDE PINS ON UNITS AND ASSEMBLIES PROVIDED FOR ALIGNMENT DURING MOUNTING?
AC029+	
AC030 C1/21-12/T21-1.12	ARE U-LUGS RATHER THAN O-LUGS USED FOR CLAMPING PURPOSES?
AC030+	
AC032 C1/21-13/T21-1.14	ARE PERMANENTLY ATTACHED NUTS USED WHEREVER FEASIBLE?
AC032+	
AC062 I1/160/16	ARE TAPPED HOLES AVOIDED?
AC035 C1/21-13/T21-1.17	ARE FASTENERS DESIGNED SO THAT CLOSE TORQUE TOLERANCES ARE NOT REQUIRED?
AC035+	
AC076 A3/DN2G3/2.1.2.I	WHERE PRECISE TORQUE OR PRELOAD IS REQUIRED, ARE FASTENERS USED THAT INCORPORATE TORQUE-INDICATING FEATURES?
AC076+	
AC057 I1/160/11	ARE STANDARD SIZE, TYPE AND TORQUE VALUE CODES ETCHED OR EMBOSSED ON FASTENERS?
AC057+	
AC037 C1/21-13/T21-1.19	ARE FASTENERS OF RUST RESISTANT MATERIAL?
AC065 I1/160/20	ARE STUDS OR SOFT, RUSTABLE, CLOSE TOLERANCE FASTENERS AVOIDED?
AC065+	
AC038 C1/21-13/T21-1.20	ARE MOUNTING HOLES LARGE ENOUGH TO ALLOW INSERTION AND STARTING OF FASTENERS?
AC038+	
AD005 A2/DN2D1/P3.45	ARE BOLTS INSTALLED WITH HEADS UPPERMOST OR IN SUCH DIRECTION THAT THE LOSS OF THE BOLT DUE TO LOSS OF THE NUT IS MINIMIZED?
AD005+	
AD005+	
AC078 A2/DN2D1/F3.46	ARE BOLTS INSTALLED WITH THE HEADS FORWARD OR IN A DIRECTION THAT ALLOWS EASY REMOVAL FOR MAINTENANCE?
AC078+	
AC043 C1/21-13/T21-1.25	IS SCREW HEAD SHAPE COMPATIBLE WITH THICKNESS OF PANEL?
AC043+	
AC044 C1/21-13/T21-1.26	IF SELF-LOCKING BOLTS ARE USED, IS OPERATING TEMPERATURE BELOW 250 DEGREES F?
AC044+	
AC046 C1/21-13/T21-1.28	ARE RIVETS RESTRICTED TO THOSE ITEMS WHICH ARE PERMANENTLY ATTACHED?
AC046+	
AC063 I1/160/18	ARE RIVETS AVOIDED ON ANY PART THAT MAY REQUIRE REMOVAL?
AC063+	
AC047 C1/21-13/T21-1.28	ARE RIVETS SOFTER THAN SURROUNDING METAL?
AC051 I1/160/P3	CAN FASTENERS BE REACHED AND REMOVED WITHOUT DISASSEMBLY?
AC051+	
AC053 I1/160/P5	ARE IDENTICAL HEADS USED WHEREVER PRACTICAL TO MINIMIZE TOOLS?
AC053+	
AC058 I1/160/12	DO REGULARLY USED FASTENERS CONTRAST IN COLOR WITH THE SURFACE?
AC058+	
AC074 A3/DN2G3/2.1.2.D	ARE THE TOPS OF MOUNTING BOLTS AND FASTENERS USED FOR MOUNTING EMBOSSED WITH AN "M" OR PAINTED A DISTINCTIVE COLOR TO MAKE THEM EASY TO LOCATE?
AC074+	
AC074+	
AC048 C1/21-13/T21-1.29	HAVE SMALL REMOVABLE PARTS BEEN SECURED BY CHAINS TO PREVENT LOSS?
AC048+	
AC067 I1/160/23	DO CHAINS HANG EXTERNALLY SO THAT THEY CAN NOT DROP INTO MOVING PARTS?
AC067+	
AC068 I1/160/24	ARE CHAINS NO LONGER THAN NECESSARY?
AC069 I1/160/24	IS BEAD-LINK CHAIN AVOIDED?

MISCELLANEOUS FITTINGS

AD001 A2/DN2D3/P1.9	ARE PROVISIONS MADE FOR THE REMOVAL OF TORQUE SHAFTS, IN WHICH UNIVERSAL JOINTS ARE INSTALLED, WITHOUT DISASSEMBLY OR REMOVAL OF PINS FROM THE JOINTS?
AD001+	
AD001+	
AD001+	
AD002 A2/DN2D2/P1.3	HAVE ALL FITTINGS BEEN DESIGNED WITH A MINIMUM OF CONSTITUENT PARTS FOR EASE OF ASSEMBLY, DISASSEMBLY, REMOVEABILITY, AND REPLACEABILITY?
AD002+	
AD002+	
AD003 A2/DN2D2/P1.20	ARE THREADED HOLES IN FITTINGS AVOIDED BECAUSE OF THE LIMITED SERVICEABILITY OF THE FITTINGS?
AD003+	
AD004 A2/DN2D2/P1.22	WHERE THREADED HOLES IN FITTINGS CANNOT BE AVOIDED HAS THE PART BEEN DESIGNED EITHER WITH INSERTS OR TO PERMIT MACHINING AND RETHRADING?
AD004+	
AD004+	

BREAKERS AND FUSES

AE001 I1/154/P1	DO FUSES OR CIRCUIT BREAKERS PROTECT BOTH SIDES OF THE LINE?
AE001*	ARE FUSES AND CIRCUIT BREAKERS LOCATED AND GROUPED FOR EASY INSPECTION?
AE002 I1/154/P2	DO FUSES/CIRCUIT BREAKERS POSITIVELY INDICATE WHEN BLOWN/TRIPPED?
AE002*	IS THE USE OF CIRCUIT BREAKERS GIVEN PREFERENCE TO THE USE OF FUSES WHEN PRACTICABLE?
AE003 I1/154/P3	DO BREAKERS AUTOMATICALLY HANDLE MOMENTARY OVERLOADS?
AE003*	ARE TRIPPED BREAKERS EASILY DETECTED AND RESET FROM FRONT PANELS?
AE004 I1/154/P4	ARE BREAKERS THAT SERVE THE SAME FUNCTION, THE SAME SIZE, TYPE, AND SHAPE?
AE004*	ARE INSTRUCTION FOR CLOSING TRIPPED BREAKERS CLEAR AND STANDARD?
AE005 I1/154/P4	ARE BREAKERS LABELED WITH FUNCTION AND KEY CHARACTERISTICS?
AE005*	ARE FUSES ON FRONT PANELS REPLACEABLE WITHOUT TOOLS?
AE006 I1/154/P6	ARE FUSES IN INDICATING HOLDERS?
AE006*	ARE SPARE FUSES ADJACENT TO ACTIVE FUSES?
AE007 I1/154/P7	ARE FUSE APPLICATIONS STANDARDIZED IN A FEW DISCRIMINABLE TYPES?
AE007*	ARE FUSES WITH REPLACEABLE PARTS USED ONLY IN THE CASE OF ABSOLUTE NECESSITY?
AE008 I1/154/P8	
AE008*	
AE009 I1/154/P9	
AE009*	
AE010 I1/154/P10	
AE010*	
AE011 I1/154/P11	
AE012 I1/154/P11	
AE013 I1/154/P12	
AE013*	
AE014 I1/154/P13	
AE014*	

ACCESSIBILITY

RA001 C1/12-10/T12-5.1	IS OPTIMUM ACCESSIBILITY PROVIDED TO ALL EQUIPMENT REQUIRING MAINTENANCE, INSPECTION, REMOVAL OR REPLACEMENT?
RA001+	
RA001+	
RA014 C1/12-11/T12-5.31	ARE ENVIRONMENTAL FACTORS (COLD WEATHER, DARKNESS, ETC.) CONSIDERED IN DESIGN AND LOCATION OF ALL ITEMS OF EQUIPMENT REQUIRING ACCESSABILITY?
RA014+	
RA014+	
RA002 C1/12-10/T12-5.10	ARE UNITS PLACED SO THAT STRUCTURAL MEMBERS DO NOT PREVENT ACCESS TO THEM?
RA002+	
RA017 A3/DN2G4/P2.3C	IS THE LOCATION OF UNITS BEHIND OR UNDER STRUCTURAL MEMBERS, FLOOR BOARDS, SEATS, HOSES, PIPES ETC. AVOIDED EXCEPT WHEN SO POSITIONED FOR PROTECTION?
RA017+	
RA017+	
RA003 C1/12-11/T12-5.14	ARE UNITS LAID OUT SO MAINTENANCE TECHNICIANS ARE NOT REQUIRED TO RETRACE THEIR MOVEMENTS DURING EQUIPMENT CHECKING?
RA003+	
RA003+	
RA004 C1/12-11/T12-5.25	IS ENOUGH ACCESS ROOM PROVIDED FOR TASKS WHICH NECESSITATE THE INSERTION OF TWO HANDS AND TWO ARMS THROUGH THE ACCESS?
BA004+	
BA004+	
RA005 C1/12-11/T12-5.16	DOES THE ACCESS PROVIDE ENOUGH ROOM FOR THE TECHNICIAN'S HANDS OR ARMS AND STILL PROVIDE FOR AN ADEQUATE VIEW OF WHAT HE IS TO DO?
RA005+	
RA005+	
RA006 C1/12-11/T12-5.17	ARE IRREGULAR EXTENSIONS, SUCH AS BOLTS, TABLES, WAVE-GUIDES, AND HOSES EASY TO REMOVE BEFORE THE UNIT IS HANDLED?
RA006+	
RA006+	
RA007 C1/12-11/T12-5.19	ARE UNITS REMOVABLE FROM THE INSTALLATION ALONG A STRAIGHT OR MODERATELY CURVED LINE?
RA007+	
RA008 C1/12-11/T12-5.20	ARE HEAVY UNITS INSTALLED WITHIN NORMAL REACH OF A TECHNICIAN FOR PURPOSES OF REPLACEMENT?
RA008+	
RA009 C1/12-11/T12-5.21	ARE PROVISIONS MADE FOR SUPPORT OF UNITS WHILE THEY ARE BEING REMOVED OR INSTALLED?
RA009+	
RA010 C1/12-11/T12-5.22	ARE RESTS OR STANDS PROVIDED ON WHICH UNITS CAN BE SET TO PREVENT DAMAGE TO DELICATE PARTS DURING INSTALLATION/REMOVAL?
RA010+	
RA010+	
RA011 C1/12-11/T12-5.23	IS SPLIT LINE DESIGN (OPENS LIKE A SUITCASE OR BOOK FOR ACCESS) UTILIZED WHENEVER POSSIBLE?
RA011+	
RA012 C1/12-11/T12-5.28	ARE ACCESS OPENINGS FREE OF SHARP EDGES OR PROJECTIONS WHICH COULD INJURE THE TECHNICIAN OR SNAG ON CLOTHING?
RA012+	
RA012+	
RA025 L6/22/P21	ARE UNITS LOCATED AND MOUNTED SO THAT ACCESS TO THEM MAY BE ACHIEVED WITHOUT DANGER TO PERSONNEL FROM ELECTRICAL CHARGE, HEAT, SHARP EDGES, POINTS, MOVING PARTS, CHEMICALS AND OTHER CONTAMINANTS?
RA025+	
RA025+	
RA020 A3/DN2G4/P2.4F	HAVE UNITS BEEN LOCATED TO MINIMIZE THE POSSIBILITY OF OIL, OTHER FLUIDS OR DIRT DROPPING ON THE REPAIRMAN?
BA020+	
BA020+	
RA013 C1/12-11/T12-5.30	HAVE HUMAN STRENGTH LIMITS BEEN CONSIDERED IN THE DESIGN OF DEVICES WHICH MUST BE CARRIED, LIFTED, PULLED, PUSHED, AND TURNED?
RA013+	
RA013+	
BA015 A3/DN2G4/P2.3A	HAS EACH UNIT BEEN POSITIONED IN THE EQUIPMENT SO THAT NO OTHER UNIT OR EQUIPMENT HAS TO BE REMOVED TO GET TO IT?
BA015+	
BA015+	
RA016 A3/DN2G4/P2.3B	WHEN IT IS NECESSARY TO POSITION UNITS IN TANDEM IS THE UNIT REQUIRING THE MOST FREQUENT SERVICING IN FRONT OF THE UNIT REQUIRING THE LEAST SERVICING?
BA016+	
BA016+	
RA021 B2/153/P5.9.4.2	HAVE LARGE DIFFICULT TO REMOVE PARTS BEEN MOUNTED SO THEY WILL NOT PREVENT CONVENIENT ACCESS TO OTHER PARTS?
BA021+	
BA021+	
RA018 A3/DN2G4/P2.3D	DOES THE REMOVAL OF ANY GIVEN LINE REPLACEABLE UNIT REQUIRE THE OPENING OF ONLY ONE ACCESS?
RA018+	
RA018+	
RA019 A3/DN2G4/P2.4A	IF TECHNICIANS MUST HAVE ACCESS TO THE BACK OF A HINGE-MOUNTED UNIT, HAS THE UNIT BEEN INSTALLED SO THAT IT WILL OPEN TO ITS FULL DISTANCE AND REMAIN OPEN WITHOUT BEING HELD?
RA019+	
RA019+	

RA022 B2/153/P5.9.4.5  
RA022+  
RA022+  
RA023 L6/20/P1  
RA023+  
RA023+  
RA024 L6/20/P2  
RA024+  
RA024+  
RA024+  
RA024+

ARE THOSE UNITS WHICH ARE MOST CRITICAL TO SYSTEM OPERATION AND WHICH REQUIRE RAPID MAINTENANCE THE MOST ACCESSIBLE?  
ARE HINGED DOORS WITH CAPTIVE, QUICK-OPENING FASTENERS PROVIDED FOR ACCESS TO UNITS WHENEVER POSSIBLE?  
IF A HINGED ACCESS OR QUICK-OPENING FASTENERS DOES NOT MEET STRESS, PRESSURIZATION, SHIELDING OR SAFETY REQUIREMENTS, HAS A COVER WITH THE MINIMUM NUMBER OF THE LARGEST SCREWS CONSISTANT WITH THESE REQUIREMENTS BEEN USED?

ACCESSES

RB001 C1/12-10/T12-5.2  
RB001+  
RB002 C1/12-10/T12-5.3  
RB002+  
RB022 A3/DN2G4/F2.4D  
RB022+  
RB022+  
RB034 L6/21/P13  
RB034+  
RB034+  
RB034+  
RB003 C1/12-10/T12-5.4  
RB003+  
RB003+  
RB004 C1/12-10/T12-5.5  
RB004+  
RB005 C1/12-10/T12-5.6  
RB005+  
RB006 C1/12-10/T12-5.7  
RB006+  
RB006+  
RB006+  
RB007 C1/12-10/T12-5.8  
RB007+  
RB007+  
RB008 C1/12-10/T12-5.9  
RB008+  
RB008+  
RB009 C1/12-10/T12-5.11  
RB009+  
RB009+  
RB010 C1/12-11/T12-5.13  
RB010+  
RB011 C1/12-11/T12-5.18  
RB011+  
RB011+  
RB012 C1/12-11/T12-5.24  
RB012+  
RB012+  
RB013 C1/12-11/T12-5.25  
RB013+  
RB013+  
RB014 C1/12-11/T12-5.26  
RB014+  
RB014+  
RB015 C1/12-11/T12-5.27  
RB015+  
RB017 C1/12-11/T12-5.29  
RB017+  
RB016 C1/12-11/T12-5.29  
RB016+  
RB016+  
RB016+  
RB018 A3/DN2G1/P5D  
RB018+

IS A TRANSPARENT WINDOW OR QUICK OPENING METAL COVER USED FOR VISUAL INSPECTION ACCESSES?  
ARE ACCESS OPENINGS WITHOUT COVERS USED WHERE THIS IS NOT LIKELY TO DEGRADE PERFORMANCE?  
ARE UNITS THAT REQUIRE FREQUENT VISUAL INSPECTION LOCATED WHERE THEY CAN BE EASILY SEEN WITHOUT THE NEED TO REMOVE PANELS, COVERS, OR OTHER UNITS?  
WHERE ACCESS IS REQUIRED FOR INSPECTION OR SERVICE AND UNCOVERED OPENINGS OR SEE-THROUGH COVERS DO NOT MEET STRESS OR OTHER REQUIREMENTS, ARE QUICK-OPENING METAL COVERS USED?  
IS A HINGED DOOR USED WHERE PHYSICAL ACCESS IS REQUIRED WITHIN A UNIT (INSTEAD OF COVER PLATES HELD BY SCREWS OR OTHER FASTENERS)?  
IF HINGED ACCESS DOORS ARE NOT FEASIBLE, ARE COVER PLATES WITH CAPTIVE QUICK-OPENING FASTENERS USED?  
IF A SCREW FASTENED ACCESS PLATE IS USED, IS IT HELD BY THE MINIMUM PRACTICABLE NUMBER OF SCREWS?  
ON HINGED ACCESS DOORS IS THE HINGE PLACED ON THE BOTTOM OR IS A PROP PROVIDED SO THAT THE DOOR WILL STAY OPEN WITHOUT BEING HELD IF UNFASTENED IN A NORMAL INSTALLATION?  
ARE PARTS LOCATED SO THAT OTHER LARGE PARTS WHICH ARE DIFFICULT TO REMOVE DO NOT PREVENT ACCESS TO THEM?  
ARE COMPONENTS PLACED SO THAT THERE IS SUFFICIENT SPACE TO USE TEST PROBES, SOLDERING IRONS, AND OTHER REQUIRED TOOLS WITHOUT DIFFICULTY?  
ARE COMPONENTS PLACED SO THAT IT IS NOT NECESSARY TO REMOVE ANY ASSEMBLY FROM A MAJOR COMPONENT TO TROUBLESHOOT TO THAT ASSEMBLY?  
CAN SCREWDRIVER OPERATED CONTROLS BE ADJUSTED WITH THE HANDLE CLEAR OF ANY OBSTRUCTION?  
ARE ACCESS DOORS MADE IN WHATEVER SHAPE IS NECESSARY TO PERMIT PASSAGE OF COMPONENTS AND IMPLEMENTS WHICH MUST PASS THROUGH?  
ARE ACCESS POINTS INDIVIDUALLY LABELED SO THEY CAN BE EASILY IDENTIFIED WITH NOMENCLATURE IN THE JOB INSTRUCTIONS AND MAINTENANCE MANUALS?  
ARE ACCESSES LABELED TO INDICATE WHAT CAN BE REACHED THROUGH THIS POINT (LABEL ON COVER OR CLOSE THERETO)?  
ARE ACCESSES LABELED TO INDICATE WHAT AUXILIARY EQUIPMENT IS NEEDED FOR SERVICE, CHECKING, ETC. AT THIS POINT?  
ARE ACCESSES LABELED TO SPECIFY THE FREQUENCY FOR MAINTENANCE EITHER BY CALENDAR OR OPERATING TIME?  
ARE REQUIREMENTS FOR DOUBLE ACCESS OPENINGS TO PERFORM SERVICING FUNCTIONS AVOIDED WHEN POSSIBLE?  
ARE PARTS WHICH REQUIRE ACCESS FROM TWO OR MORE OPENINGS MARKED TO SO INDICATE IN ORDER TO AVOID DELAY OR DAMAGE BY TRYING TO REPAIR OR REMOVE THROUGH ONLY ONE ACCESS?  
HAS EQUIPMENT BEEN DESIGNED SO THAT IT CAN BE SERVICED WHERE IT IS FINALLY INSTALLED?

RB019 A3/DN2G4/P2.3E	HAS EQUIPMENT BEEN DESIGNED SO THAT UNITS ARE
RB019*	REMOVABLE FROM THE FRONT RATHER THAN THE BACK?
RB020 A3/DN2G4/P2.4B	ARE UNITS LOCATED SO THAT THEIR COVERS CAN BE
RB020*	OPENED WITHOUT INTERFERENCE FROM BULKHEADS, BRACKETS
RB020*	OR OTHER EQUIPMENT?
RB021 A3/DN2G4/F2.4C	ARE UNITS LOCATED SO THAT CHECK POINTS, ADJUSTMENT
RB021*	POINTS, CONNECTORS AND LABELS FACE THE TECHNICIAN
RB021*	AND ARE NOT HIDDEN BY OTHER UNITS?
RB023 A3/DN2G4/F2.4E	ARE UNITS THAT MUST BE CHECKED IN SUCCESSIVE STEPS
RB023*	ALL LOCATED TOGETHER TO MINIMIZE THE TECHNICIANS
RB023*	MOVEMENTS?
RB024 B2/153/P5.9.4.3	ARE CHECK POINTS, ADJUSTMENT POINTS, TEST POINTS
RB024*	CABLES, CONNECTORS, AND LABELS ACCESSIBLE AND VISIBLE
RB024*	DURING MAINTENANCE?
RB025 B2/153/P5.9.4.3	HAS SUFFICIENT SPACE BEEN PROVIDED FOR THE USE OF
RB025*	TEST EQUIPMENT AND OTHER TOOLS WITHOUT DIFFICULTY
RB025*	OR HAZARD?
RB046 L4/5-45	ARE THE COMPONENTS WITH THE HIGHEST FAILURE RATES
RB046*	READILY ACCESSIBLE FOR REPLACEMENT?
RB027 L6/23/PG1	ARE OPENINGS AND WORK SPACES THAT ARE PROVIDED FOR
RB027*	ADJUSTING AND HANDLING UNITS LARGE ENOUGH TO PERMIT
RB027*	THE REQUIRED ACTIVITY?
RB028 L6/20/P5	IF INSTRUCTIONS APPLYING TO A COVERED UNIT ARE
RB028*	LETTERED ON A HINGED DOOR, IS THE LETTERING PROPERLY
RB028*	ORIENTED FOR READING WHEN THE DOOR IS OPEN?
RB029 L6/20/P6	ARE SLIDING, ROTATING OR HINGED UNITS TO WHICH REAR
RB029*	ACCESS IS REQUIRED FREE TO OPEN OR ROTATE THEIR
RB029*	FULL DISTANCE AND REMAIN IN THE OPEN POSITION WITH-
RB029*	OUT BEING SUPPORTED BY HAND?
RB030 L6/21/P9	FOR UNITS THAT ARE NOT COMPLETELY SELF CHECKING
RB030*	HAVE PROVISIONS BEEN MADE FOR CHECKING THE OPERA-
RB030*	TION OF THE UNIT IN THE INSTALLED POSITION WITHOUT
RB030*	THE USE OF SPECIAL RIGS AND HARNESSSES?
RB032 L6/21/P11	WHERE VISUAL ACCESS ONLY IS REQUIRED, IS A PLASTIC
RB032*	WINDOW USED IF DIRT, MOISTURE OR OTHER FOREIGN MAT-
RB032*	ERIAL PRESENTS A PROBLEM?
RB033 L6/21/P12	IS A BREAK RESISTANT GLASS WINDOW USED FOR VISUAL
RB033*	ACCESS IF PHYSICAL WEAR, HEAT OR CONTACT WITH SOL-
RB033*	VENTS WILL CAUSE OPTICAL DETERIORATION OF OTHER
RB033*	TYPES OF SEE-THROUGH COVERS?
RB035 L6/22/P20	WHEN EQUIPMENT IS OF A HIGHLY CRITICAL NATURE AND
RB035*	MAINTENANCE REQUIRES HIGHLY SPECIALIZED SKILLS, IS
RB035*	THE ACCESS TO UNITS MAINTAINED BY ONE OPERATOR
RB035*	INDEPENDENT OF A REQUIREMENT FOR THE REMOVAL OF
RB035*	EQUIPMENT MAINTAINED BY A SECOND OPERATOR?
RB036 A2/DN2A1/P1.2	HAVE SYSTEMS BEEN DESIGNED TO PERMIT MAXIMUM ACCESS
RB036*	IBILITY FOR TESTING, FAULT DETECTION, REPAIRING AND
RB036*	REPLACING COMPONENTS WITHOUT INTERFERING WITH OTHER
RB036*	COMPONENTS OR ASSEMBLIES?
RB038 A2/DN2G2/P1.29	CAN SURFACES BE INSPECTED BY PENETRANT TECHNIQUES
RB038*	FOR THE PRESENCE OF SURFACE CRACKS AND VOIDS?
RB039 A2/DN2G2/P1.30	CAN WELDED JOINTS BE INSPECTED BY RADIOGRAPHIC TECH-
RB039*	Niques FOR THE PRESENCE OF INTERNAL DEFECTS?
RB040 L4/5-56	CAN ASSEMBLIES BE LAID ON A BENCH IN ANY POSITION
RB040*	WITHOUT DAMAGING COMPONENTS?
RB042 L4/5-50	ARE ALL TEST POINTS ACCESSIBLE WHEN THE UNIT IS
RB042*	PROPERLY INSTALLED?
RB043 L4/5-50	ARE ALL FIELD ADJUSTMENTS ACCESSIBLE WHEN THE UNIT
RB043*	IS PROPERLY INSTALLED?
RB044 L4/5-48	ARE ALL ITEMS VISUALLY AND PHYSICALLY ACCESSIBLE
RB044*	WHEN THE UNIT IS ON THE TEST STAND?
RB045 L4/5-46	IS ACCESS TO CONTROLS SUCH THAT THEY CAN BE SEEN
RB045*	AND OPERATED WITHOUT DISASSEMBLY OR REMOVAL OF ANY
RB045*	PART OF THE INSTALLATION?

CONTROLS-GENERAL CRITERIA

CA101 B2/59/P5.4.1.1	HAVE CONTROLS BEEN SELECTED SO THAT NONE OF THE OPERATOR'S LIMBS WILL BE OVERBURDENED?
CA101*	
CA102 B2/59/P5.4.1.1	HAS OPERATION UNDER VARIABLE G-LOADING BEEN CONSIDERED IN THE SELECTION OF CONTROLS?
CA102*	
CA103 B2/59/P5.4.1.1	ARE MULTIROTATIONAL CONTROLS USED WHENEVER THE OPERATIONAL MODE REQUIRES PRECISION IN CONTROL OPERATION OVER THE ADJUSTMENT RANGE?
CA103*	
CA104 B2/59/P5.4.1.1	ARE DETENT CONTROLS USED WHENEVER THE OPERATIONAL MODE REQUIRES CONTROL OPERATION IN DISCRETE STEPS?
CA104*	
CA105 C1/9-29/T9-11.11	EXCEPT FOR DETENTS OR SELECTOR SWITCHES, ARE CONTROLS USED WHICH HAVE SMOOTH, EVEN RESISTANCE TO MOVEMENT?
CA105*	
CA106 C1/9-29/T9-11.12	ARE SELECTOR SWITCHES USED WHICH HAVE SUFFICIENT SPRING LOADING TO PREVENT INDEXING BETWEEN DETENTS?
CA106*	
CA107 A3/DN2G3/P7	ARE CONTROLS PROVIDED FOR THE MAINTENANCE TECHNICIAN WHENEVER THE OPERATOR'S CONTROLS CANNOT PUT INTO THE SYSTEM INFORMATION THAT IS CALLED FOR BY MAINTENANCE PROCEDURES?
CA107*	
CA107*	
CA107*	
CA108 A3/DN2G3/P7.1.A	ARE HAND OPERATED, RATHER THAN TOOL OPERATED CONTROLS USED WHEN FREQUENT ADJUSTMENT MUST BE MADE?
CA108*	
CA109 A3/DN2G3/P7.1.B	ARE BAR-SHAPED POINTERS USED WITH SELECTOR SWITCHES?
CA109*	
CA110 A3/DN2G3/P7.1.C/D	ARE ROUND KNOBS WITH ORIENTING DOT, TRIANGLE OR BAR USED FOR CONTINUOUS ROTATION FOR A FEW TURNS, AND ROUND KNOB WITH FOLDING OR HINGED CRANK USED FOR MANY TURNS?
CA110*	
CA110*	
CA201 H2/59/P5.4.1.2	IS THE DIRECTION OF MOVEMENT OF CONTROLS CONSISTENT WITH THE RELATED MOVEMENT OF AN ASSOCIATED DISPLAY EQUIPMENT COMPONENT OR VEHICLE?
CA201*	
CA201*	
CA202 B2/59/P5.4.1.2	WHEN SEVERAL CONTROLS ARE COMBINED IN ONE CONTROL DEVICE, IS CONSISTENCY OF ANTICIPATED RESPONSE MAINTAINED?
CA202*	
CA202*	
CA203 B2/59/P5.4.1.2	ARE CONTROLS ORIENTED WITH RESPECT TO THE OPERATOR?
CA203*	
CA204 B2/59/P5.4.1.2	DO ROTARY VALVE CONTROLS OPEN THE VALUE WITH A COUNTERCLOCKWISE MOTION?
CA204*	
CA301 B2/60/P5.4.1.3	ARE ALL CONTROLS WHICH HAVE SEQUENTIAL RELATIONS OR WHICH OPERATE TOGETHER, GROUPED TOGETHER ALONG WITH THEIR ASSOCIATED DISPLAYS?
CA301*	
CA301*	
CA302 B2/60/P5.4.1.3	WHERE SEQUENTIAL OPERATIONS FOLLOW A FIXED PATTERN, ARE CONTROLS ARRANGED TO FACILITATE OPERATION (E.G., IN A PATTERN LEFT TO RIGHT, TOP TO BOTTOM)?
CA302*	
CA302*	
CA303 B2/60/P5.4.1.3	DO THE MOST IMPORTANT AND FREQUENTLY USED CONTROLS HAVE THE MOST FAVORABLE POSITION WITH RESPECT TO EASE OF REACHING AND GRASPING?
CA303*	
CA303*	
CA304 B2/60/P5.4.1.3	IS THE ARRANGEMENT OF FUNCTIONALLY SIMILAR, OR IDENTICAL PRIMARY CONTROLS CONSISTENT FROM PANEL TO PANEL THROUGHOUT THE SYSTEM, EQUIPMENT, UNIT, OR VEHICLE?
CA304*	
CA304*	
CA304*	
CA305 B2/60/P5.4.1.3	IS DIRECTION OF MOVEMENT CONSISTENCY MAINTAINED FOR REMOTE CONTROL OPERATED DISPLAYS OR DEVICES?
CA305*	
CA306 B2/60/P5.4.1.3	ARE CONTROLS THAT ARE USED SOLELY FOR MAINTENANCE AND ADJUSTMENT, AND REFERRED TO INFREQUENTLY, COVERED DURING NORMAL OPERATION BUT READILY ACCESSIBLE AND VISIBLE TO THE MAINTENANCE TECHNICIAN?
CA306*	
CA306*	
CA306*	
CA307 C1/9-29/T9-11.1	ARE ALL ADJUSTMENTS FOR A GIVEN SUBSYSTEM LOCATED ON A SINGLE PANEL?
CA307*	
CA308 C1/9-29/T9-11.2	ARE CONTROLS LOCATED WHERE THEY CAN BE SEEN AND OPERATED WITHOUT DISASSEMBLY OR REMOVAL OF ANY PART OF THE INSTALLATION?
CA308*	
CA308*	
CA308*	
CA310 C1/9-29/T9-11.4	ARE CONTROLS PLACED ON PANEL IN THE ORDER IN WHICH THEY WILL NORMALLY BE USED?
CA310*	
CA311 A3/DN2G3/P7.2A	FOR EQUIPMENTS THAT HAVE CONTROLS FOR MAINTENANCE AS WELL AS FOR OPERATION, ARE THE MAINTENANCE CONTROLS PLACED ON THE FRONT PANEL BEHIND AN ACCESS DOOR SO THAT THE OPERATOR'S CONTROLS ARE ALSO
CA311*	
CA311*	
CA311*	

CA311+	ACCESSIBLE TO THE MAINTENANCE MAN?
CA402 B2/60/P5.4.1.4	ARE CONTROLS, WHICH ARE USED FOR PERFORMING THE SAME FUNCTION ON DIFFERENT ITEMS OR EQUIPMENT, THE SAME SHAPE?
CA402+	
CA402+	
CA403 B2/63/P5.4.1.4	ARE NO MORE THAN THREE DIFFERENT SIZES OF CONTROLS USED WHEN CODING CONTROLS FOR DISCRIMINATION BY ABSOLUTE SIZE?
CA403+	
CA403+	
CA404 B2/63/P5.4.1.4	ARE CONTROL SHAPES BOTH VISUALLY AND TACTUALLY IDENTIFIABLE, AND FREE OF SHARP EDGES?
CA404+	
CA405 B2/63/P5.4.1.4	DO COLOR CODES FOR IMMEDIATE ACTION CONTROLS CONFORM TO MIL-M-18012?
CA406 B2/64/P5.4.1.6	ARE CONTROLS COMPATIBLE WITH THE HANDWEAR THAT MAY BE WORN BY THE MAINTENANCE TECHNICIAN WHERE 'BLIND' OPERATION OF CONTROLS IS NECESSARY, ARE THEY SHAPE-CODED OR SEPERATED FROM ADJACENT CONTROLS BY AT LEAST FIVE INCHES?
CA406+	
CA407 B2/64/P5.4.1.7	WHEN CONTROLS ARE USED IN A FIXED PROCEDURE, ARE THEY NUMBERED IN OPERATIONAL SEQUENCE?
CA407+	
CA407+	
CA408 C1/9-29/T9-11.5	ARE COAXIAL KNOBS ADEQUATELY CODED TO AVOID CONFUSION?
CA408+	
CA409 C1/9-29/T9-11.15	ARE CONTROL POSITION MARKINGS DESCRIPTIVE RATHER THAN CODED OR NUMBERED?
CA409+	
CA410 C1/9-29/T9-11.9	ARE CONTROLS DESIGNED AND LOCATED SO THEY ARE NOT READILY SUSCEPTIBLE TO BEING MOVED ACCIDENTLY?
CA410+	
CA501 B2/64/P5.4.1.8	ARE HIDDEN OR INTERNAL CONTROLS PROTECTED FROM ACCIDENTAL MOVEMENT?
CA501+	
CA502 B2/64/P5.4.1.8	DO METHODS OF PROTECTING CONTROLS FROM ACCIDENTAL MOVEMENT STILL ALLOW THEIR BEING OPERATED WITHIN THE TIME REQUIRED?
CA502+	
CA503 B2/64/P5.4.1.8	
CA503+	
CA503+	

TYPES OF CONTROLS

CB101 B2/65/P5.4.2.1	ARE ROTARY SELECTOR SWITCHES USED FOR DISCRETE FUNCTIONS WHEN THREE OR MORE DETENTED POSITIONS ARE REQUIRED?
CB101+	
CB101+	
CB102 B2/65/P5.4.2.1	ARE ROTARY SELECTOR SWITCHES EQUIPED WITH A MOVING POINTER AND A FIXED SCALE?
CB102 B2/65/P5.4.2.1	IS THE USE OF ROTARY SWITCHES HAVING SWITCH POSITIONS DIRECTLY OPPOSITE EACH OTHER AVOIDED?
CB103 B2/65/P5.4.2.1	ARE ROTARY SWITCHES WHICH ARE NOT READILY VISIBLE DURING NORMAL SYSTEM OPERATION LIMITED TO NOT MORE THAN TWELVE POSITIONS?
CB103+	
CB104 B2/65/P5.4.2.1	ARE STOPS PROVIDED ON ROTARY SWITCHES AT THE BEGINNING AND END OF THE RANGE OF CONTROL POSITIONS?
CB104+	
CB104+	
CB105 B2/65/P5.4.2.1	DO ROTARY SWITCHES SNAP INTO POSITION WITHOUT STOPPING BETWEEN ADJACENT POSITIONS?
CB105+	
CB106 B2/65/P5.4.2.1	ARE REFERENCE LINES PROVIDED ON ROTARY SWITCH CONTROLS?
CB106+	
CB107 B2/66/P5.4.2.1	IS THE KNOB POINTER MOUNTED SUFFICIENTLY CLOSE TO ITS SCALE TO MINIMIZE PARALLAX BETWEEN THE POINTER AND THE SCALE MARKINGS?
CB107+	
CB107+	
CB108 B2/66/P5.4.2.1	ARE ON-OFF POSITIONS OF KEY OPERATED SWITCHES CLEARLY LABELED?
CB108+	
CB108+	
CB109 B2/66/P5.4.2.1	HAS THUMBWHEEL USE BEEN LIMITED TO ONLY THOSE FUNCTIONS REQUIRING COMPACT DIGITAL CONTROL-INPUT DEVICES WHERE READOUT OF THE MANUAL INPUT IS REQUIRED FOR VERIFICATION?
CB109+	
CB110 B2/66/P5.4.2.1	ARE KNOBS USED WHEN LITTLE FORCE IS REQUIRED AND WHEN PRECISE ADJUSTMENTS OF A CONTINUOUS VARIABLE ARE REQUIRED?
CB201 B2/71/P5.4.2.2	ARE MOVING KNOBS WITH FIXED SCALES USED IN PREFERENCE TO A MOVING SCALE WITH FIXED INDEX WHEN POSSIBLE?
CB201+	
CB201+	
CB202 B2/71/P5.4.2.2	ARE CRANKS USED PRIMARILY FOR TASKS REQUIRING MANY ROTATIONS OF A CONTROL?
CB202+	
CB202+	
CB203 B2/71/P5.4.2.2	FOR TASKS INVOLVING LARGE SLEWING MOVEMENTS, IN ADDITION TO SMALL FINE ADJUSTMENTS, IS A COMBINED CRANK HANDLE AND KNOB OR HANDWHEEL USED?
CB203+	
CB204 B2/71/P5.4.2.2	ARE HANDWHEELS DESIGNED FOR TWO-HAND OPERATION USED WHERE THE BREAKOUT OR ROTATION FORCES ARE TOO LARGE TO BE OVERCOME WITH ONE HAND?
CB204+	
CB204+	
CB205 B2/73/P5.4.2.2	WHERE TWO-HAND HANDWHEELS ARE EMPLOYED, WILL THERE
CB205+	
CB205+	
CB206 B2/73/P5.4.2.2	

CB206*	RE TWO HANDS AVAILABLE DURING THE MAINTENANCE TASK?
CB207 R2/73/P5.4.2.2	IS KNURLING OR INDENTATION BUILT INTO THE HANDWHEEL TO FACILITATE OPERATOR GRASP?
CB207*	
CB208 R2/73/P5.4.2.2	ARE SPINNER HANDLES ATTACHED TO HANDWHEELS WHEN LARGE DISPLACEMENTS MUST BE RAPIDLY MADE AND WHERE THE SPINNER IS NOT PRECLUDED BY SAFETY CONSIDERATIONS?
CB208*	
CB208*	
CB209 R2/73/P5.4.2.2	EXCEPT FOR VALVES DO HANDWHEELS ROTATE CLOCKWISE FOR 'ON' OR 'INCREASE'?
CB209*	
CB210 R2/73/P5.4.2.2	IS THE DIRECTION OF MOTION OF HANDWHEELS INDICATED ON THE WHEEL OR IN CLOSE PROXIMITY THERETO?
CB210*	
CB301 R2/73/P5.4.3.1	ARE PUSH BUTTONS USED WHEN A CONTROL OR ARRAY OF CONTROLS IS NEEDED FOR MOMENTARY CONTACT?
CB301*	
CB302 R2/73/P5.4.3.1	ARE PUSH BUTTON SURFACES INDENTED OR FINISHED IN A HIGH DEGREE OF FRICTIONAL RESISTANCE TO PREVENT SLIPPING ?
CB302*	
CB303 R2/76/P5.4.3.1	IS A POSITIVE INDICATION OF CONTROL ACTIVATION PROVIDED SUCH AS A SNAP FEEL, AUDIBLE CLICK OR INTEGRAL LIGHT?
CB303*	
CB303*	
CB304 R2/76/P5.4.3.1	IS A CHANNEL OR COVER GUARD PROVIDED WHEN IT IS ESSENTIAL TO PREVENT ACCIDENTAL ACTIVATION OF PUSH BUTTON?
CB304*	
CB304*	
CB305 R2/76/P5.4.3.1	IS THE SPACING BETWEEN PUSHBUTTONS ADEQUATE TO PREVENT THE ACCIDENTAL DEPRESSING OF TWO OR MORE BUTTONS SIMULTANEOUSLY?
CB305*	
CB305*	
CB306 R2/76/P5.4.3.1	ARE FOOT OPERATED PUSH BUTTONS USED ONLY IN THOSE CASES WHERE THE OPERATOR IS LIKELY TO HAVE BOTH HANDS OCCUPIED AT THE TIME THE PUSHBUTTON IS ACTIVATED?
CB306*	
CB306*	
CB307 R2/76/P5.4.3.1	ARE FOOT OPERATED PUSHBUTTONS DESIGNED TO BE OPERATED BY THE TOE AND BALL OF THE FOOT RATHER THAN THE HEEL?
CB307*	
CB307*	
CB308 R2/76/P5.4.3.1	WHERE SPACE PERMITS, HAS A PEDAL BEEN USED TO AID IN LOCATING THE ACTIVATING CONTROL?
CB308*	
CB309 R2/76/P5.4.3.1	ARE FRICTION SURFACES PROVIDED ON FOOT OPERATED PUSH BUTTON CONTROLS?
CB309*	
CB310 R2/76/P5.4.3.1	ARE PUSHBUTTONS ARRANGED IN THE FORM OF KEYBOARDS WHEN ALPHABETIC, NUMERIC, OR SPECIAL FUNCTION INFORMATION IS TO BE ENTERED INTO THE SYSTEM?
CB310*	
CB310*	
CB311 R2/79/P5.4.3.1	IS THE USE OF TOGGLE SWITCHES LIMITED TO THOSE FUNCTIONS REQUIRING TWO DISCRETE POSITIONS OR WHERE SPACE LIMITATIONS ARE SEVERE?
CB311*	
CB311*	
CB312 R2/81/P5.4.3.1	ARE CHANNEL GUARDS OR LIFT-TO-UNLOCK SWITCHES USED WHERE THE ACCIDENTAL ACTIVATION OF A TOGGLE SWITCH MUST BE AVOIDED?
CB312*	
CB312*	
CB313 R2/81/P5.4.3.1	ARE TOGGLE SWITCHES VERTICALLY ORIENTED WITH 'OFF' BEING THE DOWN POSITION?
CB313*	
CB401 R2/84/P5.4.3.2	ARE LEVERS USED WHEN LARGE AMOUNTS OF FORCE OR DISPLACEMENT ARE INVOLVED OR WHEN MULTIDIMENSIONAL MOVEMENTS OF CONTROLS IS REQUIRED?
CB401*	
CB401*	
CB402 R2/84/P5.4.3.2	ARE LEVER HANDLES CODED TO INDICATE THEIR FUNCTION WHEN SEVERAL LEVERS ARE GROUPED TOGETHER?
CB402*	
CB403 R2/84/P5.4.3.2	ARE ALL LEVER LABELED AS TO FUNCTION AND DIRECTION OF MOTION?
CB403*	
CB404 R2/84/P5.4.3.2	WHEN LEVERS ARE USED TO MAKE FINE OR CONTINUOUS ADJUSTMENTS, IS LIMB SEGMENT SUPPORT PROVIDED FOR ELBOW, FOREARM, WRIST AS APPROPRIATE?
CB404*	
CB404*	
CB405 R2/86/P5.4.3.2	ARE PEDALS USED WHEN A LARGE AMOUNT OF DISPLACEMENT OR FORCE IS REQUIRED AND WHEN FOOT ACTIVATION IS DESIRABLE?
CB405*	
CB405*	
CB406 R2/86/P5.4.3.2	ARE PEDALS DESIGNED SO THAT THEY WILL RETURN TO THE NULL POSITION WHEN FORCE IS REMOVED?
CB406*	
CB406*	
CB407 R2/86/P5.4.3.2	ARE PEDALS COVERED WITH A NON-SLIP MATERIAL?
CB501 R2/86/P5.4.3.3	HAS PREFERENCE BEEN GIVEN TO THE USE OF FORCE SENSITIVE ISOMETRIC CONTROLS FOR TRACKING APPLICATIONS?
CB501*	
CB601 R2/152/P5.9.3	FOR CALIBRATION ADJUSTMENTS, ARE KNOBS SELECTED IN



CB601*	PREFERENC TO SCREWDRIVER ADJUSTMENT WHENEVER FREQUENT ADJUSTMENT MUST BE PERFORMED?
CB601*	IF SCREWDRIVER ADJUSTMENTS MUST BE MADE WITHOUT THE AID OF VISION, HAVE MECHANICAL GUIDES FOR THE SCREWDRIVER BEEN PROVIDED OR THE SCREWS MOUNTED SO THAT THE SCREWDRIVER WILL NOT MOVE OUT OF POSITION?
CB602 R2/152/P5.9.3	IS A REFERENCE SCALE PROVIDED FOR ALL ADJUSTMENT CONTROLS AND IS THE SCALE READILY VISIBLE?
CB602*	ARE MECHANICAL STOPS PROVIDED FOR CALIBRATION OR ADJUSTMENT CONTROLS WHICH ARE INTENDED TO HAVE A LIMITED DEGREE OF MOTION?
CB603 R2/152/P5.9.3	ARE SENSITIVE ADJUSTMENT POINTS LOCATED OR GUARDED SO THAT THEY WILL NOT BE DISTURBED INADVERTENTLY?
CB603*	ARE INTERNAL CONTROLS LOCATED AWAY FROM DANGEROUS VOLTAGES, ROTATING MACHINERY, OR OTHER HAZARDS?
CB604 R2/152/P5.9.3	IF INTERNAL CONTROLS ARE LOCATED NEAR HAZARDS, ARE THE CONTROLS APPROPRIATELY SHIELDED AND LABELED?
CB604*	ARE ADJUSTMENT CONTROLS EASY TO SET AND LOCK?
CB605 R2/153/P5.9.3	FOR CONCENTRIC SHAFT VERNIER CONTROLS, IS THE LARGER DIAMETER CONTROL USED FOR FINE ADJUSTMENT?
CB605*	DO KNOBS FOR PRECISION ADJUSTMENTS HAVE A 2 INCH MINIMUM DIAMETER?
CB606 R2/153/P5.9.3	ARE CONTROL SCALES ONLY FINE ENOUGH TO PERMIT ACCURATE SETTING?
CB606*	ARE TOOL-OPERATED CONTROLS OPERABLE BY SCREWDRIVER OR OTHER MEDIUM SIZE STANDARD HAND TOOL?
CB607 R2/153/P5.9.3	ARE CALIBRATION INSTRUCTIONS PLACED AS CLOSE TO THE CALIBRATING CONTROL AS POSSIBLE?
CB607*	IS VISUAL, AUDITORY, OR TACTILE FEEDBACK PROVIDED FOR ALL PHYSICAL ADJUSTMENT PROCEDURES?
CB608 C1/9-29/T9-11.17	IS SOME TYPE OF INDEXING PROVIDED FOR ADJUSTMENT CONTROLS?
CB609 C1/9-29/T9-11.6	ARE DESIGNS AVOIDED WHICH MAY DEVELOP EXCESSIVE BACKLASH, AND CAUSE NEEDLESS ADJUSTMENT?
CB609*	ARE ADJUSTMENTS OF THE 'CENTER ZERO' TYPE USED WHEN POSSIBLE?
CB610 C1/9-29/T9-11.7	
CB610*	
CB611 C1/9-29/T9-11.10	
CB611*	
CB613 C1/9-29/T9-11.14	
CB613*	
CB614 C1/9-29/T9-11.16	
CB614*	
CB615 C1/9-29/T9-11.18	
CB615*	
CB616 C1/9-30/T9-11.19	
CB616*	
CB617 C1/9-30/T9-11.20	
CB617*	
CB618 L4/5-45	
CB618*	

DISPLAYS-GENERAL CRITERIA

DA101 B2/25/P5.2.1.2	IS THE INFORMATION DISPLAYED LIMITED TO THAT WHICH IS NECESSARY TO PERFORM SPECIFIC ACTIONS OR TO MAKE DECISIONS?
DA101+	
DA101+	
DA102 B2/25/P5.2.1.2	IS INFORMATION DISPLAYED ONLY TO THE DEGREE OF SPECIFICITY AND PRECISION REQUIRED FOR A SPECIFIC OPERATOR ACTION OR DECISION?
DA102+	
DA102+	
DA103 B2/25/P5.2.1.2	IS INFORMATION PRESENTED IN A DIRECTLY READABLE FORM TO AVOID THE NEED FOR TRANSPOSING, COMPUTING, INTERPOLATING, OR MENTAL TRANSLATION TO OTHER UNITS?
DA103+	
DA103	
DA104 B2/26/P5.2.1.2	IS REDUNDANCY IN THE DISPLAY OF INFORMATION TO A SINGLE OPERATOR AVOIDED UNLESS IT IS REQUIRED TO ACHIEVE A SPECIFIED RELIABILITY?
DA104+	
DA104+	
DA105 B2/25/P5.2.1.2	IS THE SIMULTANEOUS DISPLAY OF INFORMATION FOR PERFORMING DIFFERENT ACTIVITIES AVOIDED UNLESS THEY ARE COMPARABLE FUNCTIONS REQUIRING THE SAME INFORMATION?
DA105+	
DA105+	
DA106 B2/25/P5.2.1.2	ARE DISPLAYS DESIGNED SUCH THAT FAILURE OF THE DISPLAY OR DISPLAY CIRCUIT IS IMMEDIATELY APPARENT?
DA106+	
DA107 C1/9-30/T 9-11.6	ARE GO-NO-GO TYPE DISPLAYS USED IF THEY WILL CONVEY SUFFICIENT INFORMATION?
DA107+	
DA108 C1/9-30/T 9-11.8	ARE NUMERICAL SCALES USED ONLY WHEN QUANTITATIVE DATA IS REQUIRED?
DA108+	
DA109 C1/9-30/T 9-11.13	DO DISPLAYS WHICH REQUIRE ARITHMETIC TRANSFORMATION HAVE THE TRANSFORMATION FACTOR CLEARLY INDICATED ON OR CLOSE TO THE DISPLAY IN QUESTION?
DA109+	
DA109+	
DA110 L1/78/P 5.F	DO INSTRUMENT SCALES CONTAIN ONLY THE INFORMATION NEEDED FOR A MAINTENANCE TECHNICIAN TO MAKE A DECISION?
DA110+	
DA110+	
DA201 B2/26/P5.2.1.3	HAVE DISPLAYS BEEN LOCATED AND DESIGNED SO THAT THEY CAN BE READ TO THE DEGREE OF ACCURACY REQUIRED BY PERSONNEL IN THE NORMAL OPERATING OR SERVICING POSITION?
DA201+	
DA201+	
DA202 B2/26/P5.2.1.3	CAN ACCESS TO, AND THE READING OF DISPLAYS BE ACCOMPLISHED WITHOUT THE USE OF LADDERS, SUPPLEMENTARY LIGHTING, OR OTHER SPECIAL EQUIPMENT?
DA202+	
DA202+	
DA203 B2/26/P5.2.1.3	WHEN FEASIBLE, ARE DISPLAY FACES PERPENDICULAR TO THE OPERATOR'S NORMAL LINE OF SIGHT, AND AT WORST, NEVER LESS THAN 45° FROM THE NORMAL LINE OF SIGHT?
DA203+	
DA203+	
DA204 B2/26/P5.2.1.3	ARE DISPLAYS CONSTRUCTED, ARRANGED AND MOUNTED SO TO PREVENT REDUCTION OF INFORMATION TRANSFER DUE TO THE REFLECTION OF THE AMBIENT ILLUMINATION FROM THE DISPLAY COVER?
DA204+	
DA204+	
DA205 B2/26/P5.2.1.3	IS THE DISPLAY SHOCK MOUNTED SO THAT AMBIENT VIBRATIONS ARE DAMPED AND DO NOT DEGRADE USER PERFORMANCE BELOW THE LEVEL REQUIRED TO PERFORM THE MAINTENANCE ACTION?
DA205+	
DA205+	
DA206 B2/26/P5.2.1.3	ARE ALL MAINTENANCE DISPLAYS WHICH ARE NECESSARY TO SUPPORT A MAINTENANCE ACTIVITY OR SEQUENCE OF ACTIVITIES, GROUPED TOGETHER?
DA206+	
DA206+	
DA207 B2/26/P5.2.1.3	ARE DISPLAYS ARRANGED IN RELATION TO ONE ANOTHER ACCORDING TO THEIR SEQUENCE OF USE OR THE FUNCTIONAL RELATIONS OF THE COMPONENTS THEY REPRESENT?
DA207+	
DA207+	
DA208 B2/26/P5.2.1.3	ARE DISPLAYS ARRANGED IN SEQUENCE FOR VIEWING FROM LEFT TO RIGHT OR TOP TO BOTTOM?
DA208+	
DA209 B2/26/P5.2.1.3	ARE DISPLAYS USED MOST FREQUENTLY GROUPED TOGETHER AND PLACES IN THE OPTIMUM VISUAL ZONE (15 DEGREES ON EITHER SIDE OF A VERTICAL CENTERLINE AND 0 TO 30 DEGREES BELOW A HORIZONTAL CENTERLINE)?
DA210 B2/26/P5.2.1.3	ARE VERY IMPORTANT OR CRITICAL DISPLAYS PLACED IN THE OPTIMUM VISUAL ZONE OR OTHERWISE HIGH LIGHTED?
DA210	
DA211 B2/26/P 5.2.1.3	IS THE ARRANGEMENT OF DISPLAYS CONSISTENT FROM APPLICATION TO APPLICATION THROUGHOUT THE SYSTEM?
DA211 B2/26/P5.2.1.3	ON UNITS HAVING OPERATOR DISPLAYS, ARE MAINTENANCE
DA212 C1/9-30/T 9-11.2	

DA212*	DISPLAYS LOCATED BEHIND ACCESS DOORS ON OPERATOR'S PANEL?
DA212*	
DA213 C1/9-30/T 9-11.3	ON UNITS WITHOUT AN OPERATOR PANEL, ARE MAINTENANCE DISPLAYS LOCATED ON ONE FACE ACCESSIBLE IN THE NORMAL INSTALLED POSITION?
DA213*	
DA213*	
DA301 B2/29/P5.2.1.4	ARE CODING TECHNIQUES USED TO FACILITATE THE DISCRIMINATION BETWEEN INDIVIDUAL DISPLAYS?
DA301*	
DA302 B2/29/P5.2.1.4	ARE CODING TECHNIQUES USED TO FACILITATE THE IDENTIFICATION OF FUNCTIONALLY RELATED DISPLAYS?
DA302*	
DA303 B2/29/P5.2.1.4	ARE CODING TECHNIQUES USED TO INDICATE THE RELATIONSHIP BETWEEN DISPLAYS?
DA303*	
DA304 B2/29/P5.2.1.4	IS ALL CODING OF DISPLAYS WITHIN THE SYSTEM UNIFORM?
DA304*	
DA305 C1/9-30/T 9-11.12	ARE DISPLAYS WHICH PROVIDE TOLERANCE RANGES CODED SO BOTH THE CORRECT READING AND TOLERANCE LIMITS ARE EASILY IDENTIFIED?
DA305*	
DA305*	

TYPES OF DISPLAYS

DB101 B2/30/5.2.2.1	HAVE TRANSILLUMINATED (EDGE OR BACK LIGHTING TECHNIQUES USED WITH PLASTIC MATERIALS) INDICATORS BEEN USED TO DISPLAY QUALITATIVE INFORMATION OF IMPORTANT SYSTEM STATUS DURING MAINTENANCE ACTIVITIES?
DB102 B2/30/5.2.2.1	DO LIGHTS, INCLUDING THOSE USED IN ILLUMINATED PUSH BUTTONS, DISPLAY EQUIPMENT RESPONSE IN ADDITION TO CONTROL POSITION?
DB102*	
DB102*	
DB103 B2/30/5.2.2.1	IS THE USE OF LIGHTS HELD TO A MINIMUM NECESSARY ONLY TO DISPLAY THAT INFORMATION NECESSARY FOR EFFECTIVE SYSTEM MAINTENANCE/OPERATION?
DB103*	
DB103*	
DB104 B2/30/5.2.2.1	ARE LIGHTS WHICH SHOW THE STATUS OF THE SUBSYSTEM OR ITS COMPONENTS SET ASIDE FROM MASTER CAUTION, MASTER WARNING, MASTER ADVISORY AND SUMMATION LIGHTS?
DB104*	
DB104*	
DB105 B2/30/5.2.2.1	WHEN A TRANSILLUMINATED INDICATOR IS ASSOCIATED WITH A CONTROL, IS THE INDICATOR LIGHT SO LOCATED AS TO BE READILY AND UNAMBIGUOUSLY ASSOCIATED WITH THE CONTROL AND VISIBLE DURING CONTROL OPERATION?
DB105*	
DB105*	
DB106 B2/30/5.2.2.1	FOR CRITICAL FUNCTIONS, ARE INDICATOR LIGHTS LOCATED WITHIN 15 DEGREES OF THE OPERATORS NORMAL LINE OF SIGHT?
DB106*	
DB106*	
DB107 B2/30/P5.2.2.1	ARE WARNING LIGHTS AN INTEGRAL PART OF, OR LOCATED ADJACENT TO, THE CONTROL DEVICE UPON WHICH ACTION IS TO BE TAKEN?
DB107*	
DB107*	
DB108 B2/30/P5.2.2.1	ARE INDICATOR LIGHTS, USED SOLELY FOR MAINTENANCE AND ADJUSTMENT, AND REFERRED TO INFREQUENTLY, READILY ACCESSIBLE WHEN REQUIRED BUT OTHERWISE COVERED OR NON-VISIBLE DURING NORMAL EQUIPMENT OPERATION?
DB108*	
DB108*	
DB108*	
DB109 B2/30/P5.2.2.1	IS THE LUMINANCE OF TRANSILLUMINATED DISPLAYS COMPATIBLE WITH THE AMBIENT ILLUMINANCE LEVEL?
DB109*	
DB110 B2/30/P5.2.2.1	WHEN DISPLAYS ARE USED UNDER VARIED AMBIENT ILLUMINANCE, IS A DIMMING CONTROL PROVIDED?
DB110*	
DB111 B2/30/P5.2.2.1	ARE PROVISIONS MADE TO PREVENT DIRECT AND/OR REFLECTED SUNLIGHT FROM MAKING INDICATORS APPEAR TO BE ILLUMINATED WHEN THEY ARE NOT?
DB111*	
DB111*	
DB112 C1/9-30/T 9-11.15	ARE CRITICAL WARNING LIGHTS ISOLATED FROM OTHER LESS IMPORTANT LIGHTS FOR BEST EFFECTIVENESS?
DB112*	
DB201 B2/47/P5.3.1	ARE AUDIO DISPLAYS EQUIPPED WITH CIRCUITRY TEST DEVICES OR OTHER MEANS OF OPERABILITY TEST?
DB201*	
DB202 B2/47/P5.3.1	DOES THE DESIGN OF AUDIO DISPLAY DEVICES AND CIRCUITS PRECLUDE FALSE ALARMS?
DB202*	
DB203 B2/47/P5.3.1	DOES THE AUDIO DISPLAY DEVICE AND CIRCUITS PRECLUDE WARNING SIGNAL FAILURE IN THE EVENT OF SYSTEM OR EQUIPMENT FAILURE AND VICE VERSA ?
DB203*	
DB203*	
DB204 C1/9-30/T 9-11.11	ARE AUDITORY SIGNALS USED TO SUPPLEMENT LIGHTS FOR DISPLAYS NOT CONSTANTLY WATCHED AND WHERE CHANGES IN INDICATION MUST BE NOTED IMMEDIATELY?
DB204*	
DB204*	
DB301 L6/58/P C.1	DO CRT DISPLAYS RESOLVE AS MUCH DETAIL AS IS REQUIRED FOR ADEQUATE INTERPRETATION OF THE DISPLAYED INFORMATION?
DB301*	
DB301*	
DB302 L6/58/P C.2	IS BRIGHTNESS CONTRAST BETWEEN CRT SIGNAL AND BACK-

DB302+	GROUND SUFFICIENTLY HIGH TO AFFORD GOOD VISIBILITY?
DB303 L6/58/P C.6	IS THE AMBIENT ILLUMINATION IN THE CRT AREA SUFFICIENTLY HIGH FOR OTHER VISUAL MAINTENANCE FUNCTIONS BUT NOT TO INTENSE TO INTERFERE WITH THE VISIBILITY OF THE CRT SIGNALS?
DB303+	ARE SCOPES ADEQUATELY HOODED OR SHIELDED FROM ROOM LIGHT WHEN ILLUMINATION IS SUFFICIENTLY HIGH FOR OTHER VISUAL TASKS?
DB304 L6/58/P C.8	ARE SURFACES IMMEDIATELY ADJACENT TO CRT DISPLAYS FINISHED IN A DULL MATTE?
DB304+	ARE THE SCALES USED ON CRTS EASY TO READ AND ARE THEY DESIGNED TO MAXIMIZE ACCURACY?
DB305 L6/59/P C.11	ARE GRID MARKERS PROVIDED IN CRT DISPLAYS TO INCREASE ACCURACY OF INTERPOLATION?
DB305+	WHERE FEASIBLE, ARE COUNTERS USED TO PRESENT LARGE RANGES OF QUANTITATIVE INFORMATION WHERE CONTINUOUS TREND INDICATION IS NOT NECESSARY AND WHERE QUICK PRECISE READING IS REQUIRED?
DB306 A1/8-5/F8-2	DO NUMBERS ON COUNTER, CHANGE BY SNAP ACTION RATHER THAN BY CONTINUOUS MOVEMENT?
DB306+	DOES SPACE BETWEEN NUMERALS AND THE MOUNTING TECHNIQUE PROVIDE FOR GOOD LEGIBILITY OF THE COUNTER?
DB307 A1/8-5/F8-2	DO COUNTERS WHICH ARE USED TO INDICATE SEQUENCING RESET AUTOMATICALLY UPON COMPLETION OF A SEQUENCE, AND IS PROVISION MADE FOR MANUAL RESETTING ALSO?
DB401 L6/65/P H.1	ARE FLAGS LIMITED TO THE DISPLAY OF ONLY QUALITATIVE NON-EMERGENCY CONDITIONS?
DB401+	IF FLAGS ARE USED TO INDICATE THE MALFUNCTION OF A VISUAL DISPLAY, DOES THE MALFUNCTION POSITION OF THE FLAG AT LEAST PARTIALLY OBSCURE THE DISPLAY?
DB402 L6/65/P H.2	DO DISPLAY FLAGS OPERATE WITH A SNAP ACTION?
DB402+	ARE FLAGS COLORED TO HAVE A HIGH CONTRAST TO THE BACKGROUND?
DB403 L6/65/P H.3-6	ARE FLAGS AS CLOSE TO THE SURFACE OF THE PANEL OR INDICATOR AS POSSIBLE?
DB403+	WHERE POSSIBLE, IS PRINTED INFORMATION PROVIDED IN DIRECTLY USABLE FORM, I.E. REQUIREMENTS FOR DECODING OR INTERPOLATION ARE MINIMIZED?
DB404 L6/65/P H.3-6	IS PRINTED MATERIAL PRESENTED IN A FORMAT THAT IS EASILY AND QUICKLY UNDERSTANDABLE?
DB404+	IS A POSITIVE INDICATION GIVEN FOR THE NEED TO SERVICE THE PRINTER WITH A SUPPLY OF PAPER, INK, RIBBON, ETC.?
DB501 L6/66/P I.1	WHERE PLOTTERS ARE EMPLOYED, IS THE PLOTTING POINT READILY VISIBLE?
DB501+	ARE AIDS, SUCH AS OVERLAYS, PROVIDED WHEN THE OPERATOR IS REQUIRED TO INTERPRET GRAPHIC DATA OF PLOTTERS?
DB502 L6/66/P I.2	
DB502+	
DB503 L6/66/P I.4	
DB504 L6/66/P I.3	
DB504+	
DB505 L6/66/P I.5	
DB505+	
DB601 L6/67/P J.2	
DB601+	
DB602 L6/67/P J.3	
DB602+	
DB603 L6/67/P J.6	
DB603+	
DB604 L6/68/P K.2	
DB604+	
DB605 L6/68/P K.5	
DB605+	
DB605+	

DISPLAY CONSTRUCTION:

DC001 L6/60/P D.2	WHERE GIVEN OPERATING CONDITIONS ALWAYS FALL WITHIN A CERTAIN RANGE ON THE SCALE, ARE THESE AREAS MADE READILY IDENTIFIABLE BY MEANS OF CODING?
DC001+	IS COLOR CODING OF DISPLAY INDICATORS AVOIDED IF THE INSTRUMENT MUST BE READ UNDER AN ILLUMINANT OTHER THAN WHITE?
DC002 L6/60/P D.3	WHEREVER POSSIBLE, DO SCALES START AT ZERO?
DC002+	DO SCALE GRADUATIONS ON INDICATORS PROGRESS BY ONE, TWO, OR FIVE UNITS, OR DECIMAL MULTIPLES THEREOF?
DC003 L6/60/P D.5	DOES THE INCREASE IN NUMERICAL PROGRESSION READ CLOCKWISE, FROM LEFT TO RIGHT, OR FROM THE BOTTOM UP?
DC004 L6/60/P D.6	IS ADEQUATE CONTRAST USED BETWEEN SCALE FACE AND MARKINGS?
DC004+	ON STATIONARY SCALES, ARE ALL NUMBERS ORIENTED VERTICALLY?
DC005 L6/60/P D.7	ON MOVING SCALES, ARE NUMBERS UPRIGHT AT THE READING POSITION?
DC005+	ON MOVING POINTER-FIXED SCALE DISPLAY INDICATORS,
DC006 L6/60/P D.10	
DC006+	
DC007 L6/60/P D.11	
DC007+	
DC008 L6/60/P D.12	
DC008+	
DC101 L6/62/P E.1	

DC101*	DC101*	DOES THE MAGNITUDE OF THE READING INCREASE WITH A CLOCKWISE MOVEMENT OF THE POINTER?
DC102 L6/62/P E*6	DC102*	FOR EASE OF MONITORING A GROUP OF CIRCULAR SCALE TYPE INDICATORS, ARE THE DISPLAYS ARRANGED IN ROWS WITH POINTERS NORMALLY ALLIGNED HORIZONTALLY, OR IN COLUMNS WITH POINTERS ALLIGNED VERTICALLY?
DC103 L6/62/P E*7	DC103*	WHERE SPACE IS LIMITED, ARE NUMERALS PLACED INSIDE OF THE GRADUATION MARKS TO AVOID CONSTRICTION OF THE SCALE?
DC114 L6/62/P E*8	DC114*	WHERE SPACE IS NOT LIMITED, ARE NUMERALS PLACED OUTSIDE OF THE GRADUATION MARKS TO AVOID HAVING THE NUMBERS COVERED BY THE POINTER?
DC105 L6/63/P G*7	DC105*	IF THE UNUSED PORTION OF A SCALE IS COVERED, IS THE OPEN WINDOW LARGE ENOUGH TO PERMIT AT LEAST ONE NUMBERED GRADUATION TO APPEAR AT EACH SIDE OF ANY SETTING?
DC106 C1/9-30/T 9-11.5	DC106*	WHEN CENTER-NUL DISPLAYS ARE USED, IS THE CIRCUIT DESIGNED SO THAT IF POWER FAILS, THE INDICATOR WILL NOT REST IN THE IN-TOLERANCE POSITION?
DC107 C1/9-30/T- 9-11.7	DC107*	ARE MOVING-POINTER FIXED SCALE INDICATORS USED FOR ADJUSTMENT PROCEDURES?
DC108 C1/9-30/T 9-11.9	DC108*	ARE SCALES PROVIDED WITH ONLY ENOUGH GRADUATION FOR REQUIRED ACCURACY WITHOUT INTERPOLATION?
DC109 C1/9-30/T 9-11.10	DC109*	IS A SPECIAL CALIBRATION POINT PROVIDED ON THE SCALE OR ON A SEPERATE OVERLAY IF THE EDGES AND MIDPOINT OF TOLERANCE RANGE ARE NOT SUFFICIENT FOR ACCURATE CALIBRATION?
DC110 C1/9-30/T 9-11.10	DC110*	ARE IRREGULAR SCALE BREAKDOWNS AVOIDED?

CONTROL-DISPLAY RELATIONSHIPS

DD001 B2/19/P 5.1.1.1	DD001*	IS THE CONTROL-DISPLAY RELATIONSHIP FUNCTIONALLY EFFECTIVE AND REQUIRE A MINIMUM OF DECODING OR MENTAL INVOLVMENT ON THE PART OF THE TECHNICIAN?
DD002 B2/19/P 5.1.1.2	DD002*	IS THE RELATIONSHIP OF THE CONTROL TO ITS ASSOCIATED DISPLAY IMMEDIATELY APPARENT AND UNAMBIGUOUS TO THE TECHNICIAN/OPERATOR?
DD003 B2/19/P 5.1.1.3	DD003*	ARE CONTROL-DISPLAY RELATIONSHIPS APPARENT THROUGH DESIGN CONSIDERATIONS OF PROXIMITY, SIMILARITY OF GROUPINGS, CODING, FRAMING, LABELING, AND SIMILAR TECHNIQUES?
DD004 B2/19/P 5.1.1.4	DD004*	IS THE PRECISION OF DISPLAY PRESENTATION CONSISTENT WITH THE RANGE OF CONTROL MOVEMENT REQUIRED FOR ADEQUATE SYSTEM PERFORMANCE?
DD005 B2/19/P 5.1.2.1	DD005*	ARE FUNCTIONALLY RELATED CONTROLS AND DISPLAY LOCATED IN PROXIMITY AND ARRANGED IN FUNCTIONAL GROUPS?
DD006 B2/19/P 5.1.2.1.1.	DD006*	ARE FUNCTIONAL GROUPS OF CONTROLS-DISPLAYS LOCATED TO PROVIDE FOR LEFT TO RIGHT (PREFERRED) OR TOP-TO-BOTTOM ORDER OF USE, OR BOTH?
DD007 B2/19/P 5.1.2.1.1.2	DD007*	ARE CONTROL-DISPLAY GROUPS ARRANGED SO THAT THE MORE FREQUENTLY USED GROUPS AND MOST IMPORTANT GROUPS ARE LOCATED IN AREAS OF EASIEST ACCESS?
DD008 B2/20/P 5.1.2.1.1.4	DD008*	IS THE LOCATION OF RECURRING FUNCTIONAL CONTROL-DISPLAY GROUPS SIMILAR FROM PANEL TO PANEL?
DD009 B2/20/P 5.1.2.2	DD009*	DOES LOCATION AND ARRANGEMENT OF CONTROL AND DISPLAYS AID THE TECHNICIAN/OPERATOR IN DETERMINING WHICH CONTROLS ARE USED WITH WHICH DISPLAYS, WHICH EQUIPMENT COMPONENT EACH CONTROL AFFECTS AND WHICH EQUIPMENT FUNCTION EACH DISPLAY DESCRIBES?
DD010 B2/20/P 5.1.2.3	DD010*	ARE CONTROLS AND DISPLAYS WITHIN FUNCTIONAL GROUPS LOCATED ACCORDING TO OPERATIONAL SEQUENCE OR FUNCTION, OR BOTH?
DD011 B2/20/P 5.1.2.3.1	DD011*	IF CONTROLS ARE ARRANGED IN FEWER ROWS THAN DISPLAYS, ARE THE CONTROLS AFFECTING THE TOP ROW OF DISPLAYS POSITIONED AT THE FAR LEFT, AND THE CONTROLS AFFECTING THE SECOND ROW OF DISPLAYS PLACED IMMEDIATELY TO THE RIGHT OF THESE?
DD012 B2/20/P 5.1.2.3.3	DD012*	WHEN THE MANIPULATION OF ONE CONTROL REQUIRES THE

DD012*	READING OF SEVERAL DISPLAYS, IS THE CONTROL PLACED
DD012*	AS NEAR AS POSSIBLE TO THE RELATED DISPLAYS AND
DD012*	PREFERABLY BENEATH THE MIDDLE OF THE DISPLAYS?
DD013 82/20/P 5.1.2.3.4	WHEN SEPERATE DISPLAYS ARE AFFECTED BY A COMBINED
DD013*	CONTROL (E.G. CONCENTRICALLY GANGED KNOBS), IS THE
DD013*	DISPLAY ARRANGED FROM LEFT TO RIGHT WITH THE COM-
DD013*	BINED CONTROL UNDERNEATH THE CENTER OF THE DISPLAY?
DD014 82/21/P 5.1.2.3.5	WHEN RELATED CONTROLS AND DISPLAYS MUST BE LOCATED
DD014*	ON SEPERATE PANELS AND BOTH PANELS ARE MOUNTED AT
DD014*	APPROXIMATELY THE SAME ANGLE RELATIVE TO THE OPER-
DD014*	ATOR, DO THE CONTROL POSITIONS ON ONE PANEL CORRES-
DD014*	POND TO THE ASSOCIATED DISPLAY POSITION OF THE
DD014*	OTHER PANEL?
DD015 82/21/P 5.1.2.3.6	ARE CONTROLS AND DISPLAYS ORIENTED TO CORRESPOND TO
DD015*	THE CONTROLLED AND MONITORED COMPONENTS (E.G. IS THE
DD015*	POSITION OF ENGINE CONTROLS ORIENTED AS IF THE
DD015*	OPERATOR FACES THE NORMAL DIRECTION OF VEHICLE
DD015*	MOVEMENT?
DD016 82/21/P 5.1.3.1	DO DISPLAY INDICATORS CLEARLY AND UNAMBIGUOUSLY
DD016*	DIRECT AND GUIDE THE APPROPRIATE CONTROL RESPONSE ?
DD017 82/21/P 5.1.3.2	IS THE TIME LAG BETWEEN THE RESPONSE OF A SYSTEM
DD017*	TO A CONTROL INPUT AND THE DISPLAY PRESENTION OF
DD017*	THE RESPONSE CONSISTENT WITH SAFE AND EFFICIENT
DD017*	SYSTEM OPERATION?
DD018 82/21/P 5.1.3.3	DOES CLOCKWISE MOVEMENT OF A ROTARY CONTROL PRODUCE
DD018*	A CLOCKWISE MOVEMENT OF THE CIRCULAR SCALE POINTER
DD018*	AND AN INCREASE IN THE MAGNITUDE OF THE SETTING?
DD019 82/21/P 5.1.3.3	DOES MOVEMENT OF A LINEAR CONTROL FORWARD, UP, OR TO
DD019*	THE RIGHT PRODUCE A CLOCKWISE MOVEMENT OF CIRCULAR
DD019*	SCALE POINTERS AND AN INCREASE IN THE MAGNITUDE OF
DD019*	THE SETTING?
DD020 82/21/P 5.1.3.4	DOES CLOCKWISE MOVEMENT OF A ROTARY CONTROL PRODUCE
DD020*	MOVEMENT UP OR TO THE RIGHT FOR HORIZONTAL AND
DD020*	VERTICLE SCALE POINTERS AND AN INCREASE IN THE MAG-
DD020*	ITUDE OF THE READING?
DD021 82/21/P 5.1.3.4	DOES MOVEMENT OF A LINEAR CONTROL FORWARD, UP, OR TO
DD021*	THE RIGHT PRODUCE A MOVEMENT UP OR TO THE RIGHT FOR
DD021*	HORIZONTAL AND VERTICAL SCALE POINTERS AND AN IN-
DD021*	CREASE IN THE MAGNITUDE OF THE READING?
DD022 82/21/P 5.1.3.5	IS THE USE OF DISPLAYS WITH MOVING SCALES AND FIXED
DD022*	POINTERS OR CURSORS AVOIDED?
DD023 82/21/P 5.1.3.5	WHEN CIRCULAR FIXED POINTER, MOVING-SCALE INDICATORS
DD023*	ARE NECESSARY, DOES CLOCKWISE MOVEMENT OF ROTARY
DD023*	CONTROLS OR MOVEMENT OF A LINEAR CONTROL FORWARD, UP
DD023*	OR TO THE RIGHT PRODUCE A COUNTERCLOCKWISE MOVEMENT
DD023*	OF THE SCALE AND AN INCREASE IN THE MAGNITUDE OF
DD023*	THE READING?
DD024 82/21/P 5.1.3.6	WHEN VERTICAL OR HORIZONTAL FIXED-POINTER, MOVING-
DD024*	SCALE INDICATORS ARE NECESSARY, DOES CLOCKWISE MOVE-
DD024*	MENT OF AN ASSOCIATED ROTARY CONTROL PRODUCE A
DD024*	MOVEMENT OF THE SCALE DOWN OR TO THE LEFT AND AN
DD024*	INCREASE IN THE MAGNITUDE OF THE READING?
DD025 82/21/P 5.1.3.6	FOR VERTICLE OR HORIZONTAL FIXED-POINTER, MOVING-
DD025*	SCALE INDICATORS, DOES MOVEMENT OF A LINEAR CONTROL
DD025*	FORWARD, UP, OR TO THE RIGHT MOVE THE SCALE DOWN OR
DD025*	TO THE LEFT AND INCREASE THE MAGNITUDE OF THE READ-
DD025*	ING?

CONSTRUCTION-GENERAL CRITERIA

EA001 A3/DN2G3/P2.3.A	ARE CIRCUITS GROUPED WITHIN UNITS TO MINIMIZE THE
EA001+	CRISSCROSSING OF SIGNALS BETWEEN UNITS?
EA002 A3/DN2G3/P2.3.C	CAN EACH UNIT BE CHECKED AND ADJUSTED SEPARATELY,
EA002+	AND THEN BE CONNECTED INTO A FUNCTIONING SUBSYSTEM
EA002+	WITH LITTLE OR NO ADDITIONAL ADJUSTMENT?
EA003 A3/DN2G3/P2.3.D	ARE OVERLOAD INDICATORS PROVIDED ON EACH MAJOR
EA003+	CIRCUIT?
EA004 A3/DN2G3/P2.3.E	ARE REGULARLY STOCKED STANDARD PARTS USED WHEREVER
EA004+	POSSIBLE?
EA005 A3/DN2G3/P2.3.F	ARE ASSEMBLIES, SUBASSEMBLIES, AND PARTS INTER-
EA005+	CHANGEABLE WITHIN AND BETWEEN EQUIPMENTS WHENEVER
EA005+	POSSIBLE?
EA006 A3/DN2G3/P2.3.G	ARE MECHANICAL COMPONENTS DESIGNED TO BE LUBRICATED
EA006+	WITHOUT DISASSEMBLY OR REQUIRE NO LUBRICATION?
EA007 A3/DN2G3/P2.3.H	ARE IRREGULAR PROTRUSIONS (WAVE GUIDES, CABLES,
EA007+	HOSES, ETC.) EASILY REMOVEABLE FOR HANDLING AND
EA007+	MAINTENANCE?
EA008 A3/DN2G3/P2.3.I	ARE BRACES PROVIDED TO HOLD HINGED ASSEMBLIES IN
EA008+	AN OPEN POSITION FOR THE PERFORMANCE OF WORK ON
EA008+	THEM?
EA009 A3/DN2G3/P2.3.J	ARE UNITS DESIGNED TO PREVENT DAMAGE TO DELICATE
EA009+	PARTS DURING MAINTENANCE/REPAIR?
EA010 A3/DN2G3/P2.3.K	IS FOLD-OUT CONSTRUCTION OF UNITS PROVIDED WHERE-
EA010+	EVER FEASIBLE?
EA011 L6/14/P B.9	ARE RESTS AND STANDS PROVIDED FOR ALL APPLICABLE
EA011+	UNITS?
EA012 L6/14/P B.10	DO RESTS AND STANDS INCORPORATE PROVISIONS FOR
EA012+	TEST EQUIPMENT, TOOLS AND MANUALS WHERE FEASIBLE?
EA013 L6/14/P B.11	ARE RESTS OR STANDS A PART OF THE BASIC CHASSIS
EA013+	WHERE DESIGN REQUIREMENTS PERMIT?
EA014 L6/14/P B.13	ARE GUIDES, TRACKS, AND STOPS PROVIDED TO PREVENT
EA014+	DAMAGE AND TO FACILITATE HANDLING OF UNITS AND
EA014+	COMPONENTS, WHERE FEASIBLE?
EA015 B2/152/P5.9.1.A	ARE PHYSICAL MEASURES PROVIDED TO PRECLUDE THE
EA015+	INTERCHANGE OF UNITS OF SAME OR SIMILAR FORM THAT
EA015+	ARE NOT, IN FACT FUNCTIONALLY INTERCHANGEABLE?
EA016 B2/152/P5.9.1.B	ARE PHYSICAL MEASURES PROVIDED TO PRECLUDE THE
EA016+	IMPROPER MOUNTING OF UNITS OR COMPONENTS?
EA017 B2/152/P5.9.1.C	ARE MEASURES PROVIDED TO FACILITATE THE IDENT-
EA017+	IFICATION OF INTERCHANGEABLE UNITS OR COMPONENTS?
EA018 A2/DN2A1/P1.14	ARE COMPONENTS AND ASSEMBLIES DESIGNED SUCH THAT
EA018+	THEY CAN ONLY BE INSTALLED IN THE CORRECT POSITION?
EA019 A2/DN2E2/P1.17	ARE CENTERS OF GRAVITY OF HARDWARE KEPT AS LOW AS
EA019+	POSSIBLE?
EA020 A2/DN2E2/P1.20	ARE LIGHT WEIGHT, EFFICIENTLY DESIGNED COMPONENTS
EA020+	UTILIZED THAT DO NOT JEOPARDIZE THE REQUIRED
EA020+	STRENGTH CHARACTERISTICS OF THE END ITEM?
EA021 A2/DN2E2/P1.21	ARE MOISTURE AND FUNGUS-RESISTANT MATERIALS USED
EA021+	WHENEVER POSSIBLE AND PRACTICAL?
EA022 A2/DN2E2/P1.22	HAVE CRITICAL SURFACES BEEN TREATED WITH PERMANENT
EA022+	OR SEMI-PERMANENT FINISHES?
EA023 A2/DN2E2/P1.23	HAVE FUNGUS-PROOFING AND WATER-PROOFING COMPOUNDS
EA023+	BEEN APPLIED WHEN APPROPRIATE?
EA024 A2/DN2E2/P1.24	FOR ITEMS CONTAINING CRITICAL PARTS/MECHANISMS THAT
EA024+	REQUIRE PROTECTIVE ENCLOSURES, ARE THE CASES OR
EA024+	OUTER SHELLS WATER/VAPOR PROOF TO ELIMINATE THE
EA024+	NEED FOR SUPPLEMENTAL PRESERVATION?
EA025 L4/5-47	HAS THE USE OF CANTILEVER MOUNTINGS FOR PARTS AND
EA025+	ASSEMBLIES BEEN MINIMIZED AND, WHERE USED, IS THE
EA025+	CENTER OF GRAVITY NEAR THE MOUNTING?
EA026 L4/5-48	HAS THE CENTER OF GRAVITY BEEN CONSIDERED IN THE
EA026+	POSITIONING OF SHOCK MOUNTS?
EA026 L4/5-48	HAVE SHOCK MOUNTS BEEN POSITIONED TO PROVIDE AN APPROX-
	IMATELY EQUAL DISTRIBUTION OF WEIGHT TO ALL MOUNTING
	POINTS?
EA027 L4/5-50	HAS SEQUENTIAL ASSEMBLY BEEN MINIMIZED TO REDUCE

EA027*	INVOLVED DISSASSEMBLY TO MAKE REPAIRS OR ADJUSTMENTS?
EA027*	
EA028 L4/5-53	HAS THE NUMBER OF VARIABLE DEVICES BEEN MINIMIZED, COMMENSURATE WITH DESIGN REQUIREMENTS?
EA028*	
EA029 L4/5-53	HAS THE SIMPLEST ELECTRICAL/ELECTRONIC DESIGN BEEN UTILIZED THAT WILL PERFORM THE REQUIRED FUNCTIONS?
EA030 L4/5-53	HAS MAXIMUM USE BEEN MADE OF STANDARD "PREFERRED" CIRCUITS?
EA030*	
EA031 L4/5-53	HAS THE SIMPLEST MECHANICAL DESIGN BEEN UTILIZED THAT WILL PERFORM THE REQUIRED FUNCTIONS?
EA032 L4/5-51	HAVE STANDARD MATERIALS BEEN UTILIZED IN ALL POSSIBLE CASES?
EA032*	
EA033 L4/5-51	HAVE CORROSION-RESISTANT MATERIALS BEEN UTILIZED WHEN REQUIRED?
EA033*	

COMPONENT LOCATION AND ORIENTATION

FA101 A3/DN2G3/P2.1.A	HAVE PARTS BEEN MOUNTED IN AN ORDERLY WAY ON FLAT SURFACES AND NOT STACKED ON TOP OF EACH OTHER?
FA101*	
FA102 A3/DN2G3/P2.1.B	HAVE PARTS BEEN MOUNTED ON ONE SIDE OF A BOARD AND ALL WIRING INCLUDING PRINTED CIRCUITS PUT ON THE OTHER SIDE OF THE BOARD?
FA102*	
FA103 A3/DN2G3/P2.1.C	HAVE PARTS BEEN POSITIONED TO PROVIDE SPACE TO USE PROBES, SOLDERING IRONS ETC. WITHOUT DIFFICULTY?
FA103*	
FA104 A3/DN2G3/P2.1.D	CAN SUBASSEMBLIES AND OTHER PARTS BE REPLACED WITHOUT REMOVAL OR INTERFERENCE FROM ADJACENT PARTS?
FA104*	
FA105 A3/DN2G3/P2.1.E	CAN FUSES BE SEEN AND REPLACED WITHOUT THE REMOVAL OF OTHER PARTS AND WITHOUT THE USE OF TOOLS?
FA105*	
FA106 A3/DN2G3/P2.1.F	ARE DELICATE COMPONENTS LOCATED SUCH THAT THEY WILL NOT BE DAMAGED WHILE WORK IS BEING PERFORMED ON THE UNIT?
FA106*	
FA107 A3/DN2G3/P2.1.G	HAVE INTERNAL CONTROLS BEEN LOCATED AWAY FROM DANGEROUS VOLTAGES?
FA107*	
FA108 A3/DN2G3/P2.1.H	HAVE COMPONENTS THAT RETAIN HEAT OR ELECTRICAL POTENTIAL AFTER EQUIPMENT HAS BEEN DEENERGIZED BEEN LOCATED TO PRECLUDE BEING CONTACTED BY THE REPAIRMAN WHEN THE EQUIPMENT IS FIRST OPENED?
FA108*	
FA108*	
FA108*	
EA109 B2/152/P5.9.2.2	ARE COMPONENTS OF THE SAME OR SIMILAR FORM BUT WITH DIFFERENT FUNCTIONAL PROPERTIES EASILY IDENTIFIED AND NOT INTERCHANGEABLE?
EA110 A2/DN2E2/P1.5	ARE INTERIOR MOUNTING AND INSTALLATION HARDWARE OF ADEQUATE STRENGTH AND DESIGN TO WITHSTAND STRESSES ENCOUNTERED DURING HANDLING AND MOVEMENT?
EA110*	
EA110*	
FA111 A2/DN2E2/P1.19	ARE LARGE, HEAVY OR DENSE INTERIOR COMPONENTS LOCATED AS NEAR THE BASE OR BOTTOM OF THE ITEM AS PRACTICAL?
FA111*	
EA111*	
FA112 L1/96/26	ARE HIGH FAILURE RATE COMPONENTS READILY ACCESSIBLE FOR REPLACEMENT?
FA112*	
FA113 L4/5-49	ARE PARTS ARRANGED FOR ECONOMICAL ASSEMBLY AND LOGICAL WIRING?
FA113*	
FA114 L6/19/10	ARE UNITS LAID OUT TO MINIMIZE THE OPERATOR'S MOVEMENTS DURING CHECKOUT?
EA114*	

CASES, COVERS, HANDLES, RACKS AND CHASSIS

EA201 A3/DN2G3/P2.4	ARE COVERS EASILY OPENED OR REMOVED FOR ACCESS TO INTERIOR COMPONENTS OF A UNIT IN ITS INSTALLED POSITION?
EA201*	
EA201*	
EA202 A3/DN2G3/P2.4.1.A	ARE COVERS AND CASES DESIGNED FOR REMOVAL RATHER THAN HAVING TO LIFT UNITS OUT OF THEM?
EA202*	
EA203 B2/154/P5.9.6.1	ARE MOUNTING SCREW HOLES OF SUFFICIENT SIZE TO PERMIT CASE ATTACHMENT TO THE UNIT WITHOUT PERFECT ALIGNMENT BETWEEN THE TWO ITEMS?
EA203*	
EA203*	
EA204 B2/154/P5.9.6.2	ARE EDGES AND CORNERS ON CASES AND COVERS ROUNDED OR OTHERWISE FINISHED TO PREVENT INJURY TO PERSONNEL?
EA204*	
EA204*	
EA205 B2/154/P5.9.7.1	HAS THE PROPER ORIENTATION OF A UNIT WITHIN ITS CASE BEEN IDENTIFIED EITHER BY CASE DESIGN OR BY THE USE OF APPROPRIATE LABELS?
EA205*	
EA205*	
EA206 B2/154/P5.9.7.3	ARE CASES SUFFICIENTLY LARGE TO ACCOMMODATE THEIR



EA206+	INSTALLATION AND REMOVAL WITHOUT DAMAGE TO THE UNIT THEY ENCLOSE?
EA206+	ARE CASES EQUIPPED WITH GUIDES, TRACKS, AND STOPS AS NECESSARY TO FACILITATE HANDLING AND PREVENT DAMAGE TO THE UNIT THEY ENCLOSE?
EA207 B2/154/P5.9.7.4	ARE OBVIOUS METHODS PROVIDED TO INDICATE WHEN A COVER IS NOT SECURED, EVEN THOUGH IT MAY BE IN PLACE?
EA207+	IS AN INSTRUCTION PLATE PROVIDED WHEN THE METHOD FOR OPENING A COVER IS NOT OBVIOUS?
EA207+	ARE NO MORE THAN SIX FASTENERS USED TO SECURE A CASE?
EA208 B2/154/P5.9.8.1	ARE THE SAME TYPE OF FASTENERS USED ON ALL COVERS AND CASES FOR A GIVEN TYPE OF EQUIPMENT?
EA208+	ARE VENTILLATION HOLES ADEQUATELY SCREENED TO PREVENT ENTRY OF CONDUCTORS THAT COULD INADVERTENTLY CONTACT HIGH VOLTAGES?
EA208+	ARE HANDLS USED ON UNITS WEIGHING OVER TEN POUNDS?
EA209 C1/23-17/T23-2.5C	ARE HANDLES PROVIDED ON SMALLER UNITS THAT ARE DIFFICULT TO GRASP, REMOVE, OR HOLD?
EA209+	ARE HANDLES PROVIDED ON TRANSIT CASES TO FACILITATE HANDLING AND CARRYING OF THE UNIT?
EA210 C1/23-17/T23-2.7C	ARE HANDLES POSITIONED TO PROVIDE A BALANCED LOAD?
EA210+	ARE THE INSIDE DIMENSIONS OF HANDLES AT LEAST 4.5 INCHES WIDE AND 2 INCHES DEEP?
EA211 C1/23-17/T23-2.8C	DO HANDLES HAVE A COMFORTABLE GRIP FOR REMOVAL AND REPLACEMENT OF UNITS?
EA211+	ARE HANDLES LOCATED SUCH THAT THEY DO NOT INTERFERE WITH SURROUNDING HARDWARE?
EA212 C1/23-17/T23-2.9C	ARE HANDLES LOCATED TO PREVENT ACCIDENTAL ACTIVATION OF CONTROLS?
EA212+	CAN HANDLES ALSO SERVE AS MAINTENANCE STANDS FOR THE EQUIPMENT?
EA212+	ARE HANDLES ADEQUATE ON HEAVY EQUIPMENT REQUIRING TWO MEN TO LIFT?
EA213 C1/23-16/T23-2.1H	ARE HANDLES OR OTHER SUITABLE MEANS PROVIDED ON ALL UNITS REQUIRING REMOVAL/REPLACEMENT?
EA214 C1/23-16/T23-2.2H	ARE HANDLES LOCATED NEAR THE BACK OF HEAVY EQUIPMENT TO FACILITATE HANDLING?
EA214+	ARE COVERS AND CASES REMOVEABLE/REPLACEABLE/PORTABLE BY ONE MAN?
EA215 C1/23-16/T23-2.3H	DO SIMILAR COVERS OPERATE ALIKE BUT ARE NOT INTERCHANGEABLE?
EA215+	ARE LIKE COVERS AND THEIR FASTENERS COMPLETELY INTERCHANGEABLE?
EA216 C1/23-16/T23-2.4H	ARE CAPTIVE, QUICK OPENING FASTENERS USED WHEREVER PRACTICAL?
EA217 C1/23-16/T23-2.5H	ARE NONREMOVEABLE COVERS/CASES SELFSUPPORTING WHILE OPEN?
EA217+	ARE INSTRUCTIONS FOR COVERED UNITS READABLE WITH THE COVER OPEN?
EA218 C1/23-16/T23-2.6H	ARE COVERS/CASES DESIGNED WITH TOP SURFACES SMOOTH AND SLOPED TO REDUCE THE ACCUMULATION OF DUST/DIRT?
EA218+	ARE RACKS UNIFORM IN SIZE, DIVISION AND USE CHARACTERISTICS?
EA219 C1/23-16/T23-2.7H	ARE RACK DISPLAYS LOCATED BETWEEN 40 AND 70 INCHES FROM THE FLOOR?
EA219+	ARE RACK CONTROLS LOCATED BETWEEN 40 AND 55 INCHES FROM THE FLOOR?
EA220 C1/23-16/T23-2.9H	ARE REPLACEABLE ITEMS THAT WEIGH OVER 25 POUNDS LOCATED 51 INCHES OR LESS ABOVE THE FLOOR?
EA220+	CAN DOORS AND DRAWERS BE OPENED WITH ONE HAND AND WITH LESS THAN 40 POUNDS FORCE?
EA221 C1/23-16/T23-2.10H	DO ADJACENT HINGED DOORS/COVERS OPEN IN OPPOSITE DIRECTIONS?
EA221+	ARE GUIDES, SUPPORTS, AND LABELS PROVIDED AS AIDS
EA222 C1/23-16/T23-2.11H	
EA222+	
EA223 C1/23-16/T23-2.12H	
EA223+	
EA224 C1/23-16/T23-2.9H	
EA224+	
EA225 I1/157/1	
EA225+	
EA226 I1/157/12	
EA226+	
EA227 I1/157/11	
EA227+	
EA228 I1/157/14	
EA228+	
EA229 I1/157/17	
EA229+	
EA230 I1/157/18	
EA230+	
EA231 I1/157/20	
EA231+	
EA232 I1/168/1	
EA232+	
EA233 I1/168/2	
EA233+	
EA234 I1/168/3	
EA234+	
EA235 I1/168/4	
EA235+	
EA236 I1/168/5	
EA236+	
EA237 I1/168/6	
EA237+	
EA238 I1/168/15	

EA238*	IN REMOVING/REPLACING HEAVY ITEMS?
EA239 11/168/13	ARE INTERLOCKS PROVIDED TO DISCONNECT HAZZARDOUS
EA239*	ITEMS ON RACKS OR CHASSIS?
EA240 11/168/18	ARE ALL DOORS, DRAWERS, AND ACCESSES TO RACKS
EA240*	CLOSED DURING NORMAL OPERATIONS?
EA241 11/168/19	ARE ALL UNITS LAHELED WITH FULL IDENTIFYING
EA241*	INFORMATION?
EA242 11/168/21	ARE STATUS LIGHTS AND LAMP TEST FEATURES PROVIDED?
EA243 11/168/22	ARE ALL MAINTENANCE CONTROLS/DISPLAYS LOCATED
EA243*	BEHIND THE ACCESS DOORS?
EA244 11/168/25	ARE METERS/CLOCKS PROVIDED FOR REPORTING OPERATING
EA244*	TIME?
EA245 A1/8-9/1	ARE RACKS DESIGNED WITH MOVEABLE DRAWERS OR SHELVES
EA245*	TO FACILITATE MAINTENANCE?
EA246 A1/8-9/5	ARE DRAWERS AND RACKS DESIGNED TO OPEN WITHOUT
EA246*	BREAKING INTERNAL CONNECTIONS REQUIRED FOR
EA246*	MAINTENANCE?
EA247 A1/8-9/16	ARE DRAWERS AND RACKS DESIGNED WITH HINGES OR
EA247*	ROTATION POINTS FOR EASE OF ACCESS?
EA248 A1/8-10/4	ARE LARGE PLUG-IN ITEMS SECURED WITH EASY-TO-
EA248*	RELEASE HOLDING CLAMPS?
EA249 A1/8-10/5	ARE HEAVY PARTS LOCATED AS CLOSE AS POSSIBLE TO
EA249*	THE LOAD-BEARING STRUCTURE?
EA250 A3/DN2G3/P2.4.3.E	ARE BULKY UNITS WEIGHING 100 POUND AND OTHER UNITS
EA250*	WEIGHING MORE THAN 150 POUNDS PROVIDED WITH
EA250*	SUITABLY MARKED LIFTING EYES?
EA251 A3/DN2G3/P2.4.3.I	ARE NONSLIP GRASPING SURFACES PROVIDED ON THE
EA251*	BOTTOM OF UNITS WHERE THAT SURFACE IS USED AS A
EA251*	HANDHOLD DURING REMOVAL OR INSTALLATION?
EA252 A3/DN2G3/P2.4.3.J	DO HINGED OR FOLDING HANDLES HAVE A STOP POSITION
EA252*	FOR RETAINING THEM IN THE "USE" POSITION?
EA253 L6/15/PC.7	ARE HINGED COVERS USED TO REDUCE THE NUMBER OF
EA253*	REQUIRED FASTENERS, WHERE APPROPRIATE?
EA254 L4/5-46	ARE FIELD-REPLACEABLE PARTS, MODULES, AND SUB-
EA254*	ASSEMBLIES PLUG-IN TYPE RATHER THAN SOLDERED?
EA255 L4/5-46	ARE OPENINGS IN CASES, COVERS, RACKS, ETC SHIELDED
EA255*	TO PREVENT LEAKAGE?
EA256 L4/5-52	HAVE GLARE HAZZARDS BEEN MINIMIZED IN THE DESIGN
EA256*	OF THE EQUIPMENT?

PACKAGING/MODULARIZATION

EA301 C1/23-15/T23-2.1	ARE PLUG-IN COMPONENTS USED WHERE FEASIBLE?
EA302 C1/23-15/T23-2.2	HAVE METHODS BEEN PROVIDED TO PREVENT THE WRONG
EA302*	INSTALLATION OF A UNIT?
EA303 C1/23-15/T23-2.3	ARE MODULES AND MOUNTING PLATES IDENTIFIED?
EA304 C1/23-15/T23-2.4	ARE GUIDES PROVIDED FOR MODULE INSTALLATION?
EA305 C1/23-15/T23-2.5	CAN IN-SERVICE ADJUSTMENTS BE MADE ON PULL-OUT/
EA305*	SLIDE-OUT UNITS WITHOUT REMAKING ELECTRICAL
EA305*	CONNECTIONS?
EA306 C1/23-15/T23-2.6	ARE UNITS MOUNTED SO THAT REPLACING ONE DOES NOT
EA306*	REQUIRE THE REMOVAL OF OTHERS?
EA307 C1/23-15/T23-2.9	ARE EASILY DAMAGED COMPONENTS ADEQUATELY PROTECTED?
EA308 C1/23-15/T23-2.10	ARE ALL REPLACEABLE PARTS EASILY ACCESSIBLE?
EA309 C1/23-15/T23-2.12	ARE BRACES PROVIDED TO HOLD HINGED ASSEMBLIES IN
EA309*	THE OPEN POSITION WHILE BEING MAINTAINED?
EA310 C1/23-15/T23-2.15	ARE INTERNAL DISPLAYS ILLUMINATED AS NECESSARY?
EA311 C1/23-15/T23-2.16	ARE INTERNAL CONTROLS LOCATED AWAY FROM DANGEROUS
EA311*	VOLTAGES?
EA312 C1/23-15/T23-2.19	ARE UNITS DESIGNED WITH ADEQUATE SPACE FOR THE USE
EA312*	OF TOOLS?
EA313 C1/23-15/T23-2.20	ARE UNITS DESIGNED WITH ADEQUATE CLEARANCE SO THAT
EA313*	STRUCTURAL MEMBERS DO NOT PREVENT ACCESS?
EA314 C1/23-15/T23-2.21	ARE ALL THROWAWAY ITEMS READILY ACCESSIBLE?
EA315 C1/23-15/T23-2.22	ARE UNITS DESIGNED SUCH THAT TROUBLESHOOTING OF A
EA315*	MAJOR COMPONENT DOES NOT REQUIRE ITS REMOVAL?
EA316 C1/23-15/T23-2.28	ARE UNITS REMOVEABLE ALONG A STRAIGHT OR MODERATELY
EA316*	CURVED LINE?
EA317 L6/12/PA.1	ARE A MAXIMUM NUMBER OF UNITS DESIGNED FOR REMOVAL

FA317+	AND REPLACEMENT BY ONE PERSON?
FA318 L6/12/PA.3	ARE UNITS SERVING THE SAME FUNCTION IN DIFFERENT APPLICATIONS DESIGNED TO BE INTERCHANGEABLE?
FA318+	ARE FUNCTIONS GROUPED SO THAT IT IS POSSIBLE TO CHECK AND ADJUST EACH UNIT SEPARATELY?
FA319 L6/12/PA.5	ARE ALL TEST POINTS EASILY ACCESSIBLE?
FA319+	ARE THE UNITS DESIGNED WITH SELF-CHECKING FEATURES OR ARE TEST POINTS PROVIDED FOR CHECKING WITH AUXILIARY EQUIPEMNT?
FA320 A3/DN2G1/P3.C	ARE MODULES DESIGNED TO PERFORM A SINGLE FUNCTION?
FA321 A3/ND2G1/P3.D	ARE MODULES PACKED TO THE GREATEST PRACTICAL DENSITY BUT WITH ADEQUATE WORKSPACE FOR BENCH MAINTENANCE?
FA321+	DOES MODULE DESIGN COMPLY WITH PLANNED DIAGNOSTIC CAPABILITIES?
FA321+	ARE MODULES TESTED AS UNITS ON A GO/NO-GO BASIS?
FA322 11/165/4	HAS ENCAPSULATION OR POTTING BEEN AVOIDED AROUND UNRELIABLE PARTS ON REPAIRABLE MODULES?
FA323 11/165/5-16	ARE LIKE MODULES INTERCHANGEABLE WITHOUT REALIGNMENT?
FA323+	ARE SIMILIAR MODULES WITH DIFFERENT FUNCTIONS NOT INTERCHANGEABLE?
FA324 11/165/7	HAS A SYSTEM-CONSISTENT COLOR CODE BEEN ESTABLISHED TO DISCRIMINATE BETWEEN SIMILIAR MODULES?
FA324+	HAVE CODES/LABELS BEEN PROVIDED TO IDENTIFY AND OUTLINE FUNCTIONAL GROUPS OF ITEMS?
FA325 11/165/8	ARE TEST AND SERVICE POINTS, AND THEIR VALUES AND LIMITS ALL LAHELED?
FA326 11/165/9	ARE STANDARDIZED, PREFERRED CIRCUITS USED FOR ALL ROUTINE FUNCTIONS?
FA326+	ARE DELICATE ITEMS PROTECTED AGAINST DAMAGE OR MISUSE?
FA327 11/165/11	ARE COMPONENTS SEGRIGATED BY MAINTENANCE TASKS AND SKILLS?
FA327+	ARE LIKE ITEMS GROUPED TOGETHER AND MOUNTED IN A UNIFORM FASHION?
FA328 11/165/12	IS THE MANNER IN WHICH A MODULE IS MOUNTED ALWAYS ORVIOUS?
FA328+	ARE ITEMS CLEANED BY DIFFERENT METHODS SEPARATED SO THAT THEY CAN RE PROTECTED?
FA329 11/165/19	ARE HIGH FAILURE RATE AND SERVICABLE ITEMS READILY ACCESSIBLE?
FA329+	HAS THE SEQUENTIAL ASSEMBLY/DISASSEMBLY OF UNITS BEEN AVOIDED?
EA330 11/165/20	ARE ALL PLUGIN SOCKETS AND KEYS ORIENTED IN THE SAME DIRECTION?
EA330+	ARE MODULES DESIGNED IN UNIFORM SIZES AND SHAPES WHERE PRACTICAL?
FA331 11/165/22	ARE GUIDE PINS PROVIDED TO PERMIT EASY INSERTION OF MODULES INTO CONNECTORS?
FA331+	ARE QUICK DISCONNECT HOLD-DOWN DEVICES USED ON MODULES TO PERMIT EASY REMOVAL?
FA332 11/165/25	ARE REPAIRABLE MODULES DESIGNED FOR EASY ACCESS?
EA332+	ARE MODULES DESIGNED WITH INTERCONNECTING CIRCUITS LOCATED IN THE SAME PACKAGE FOR EASE IN PERFORMING MAINTENANCE?
FA333 11/166/3	
EA333+	
FA334 11/166/4	
EA334+	
FA335 11/166/8	
EA335+	
FA336 11/166/10	
EA336+	
FA337 11/166/12	
EA337+	
FA338 11/166/13	
EA338+	
FA339 11/166/16	
EA339+	
FA340 11/166/17	
EA340+	
FA341 A1/8-13/1	
EA341+	
FA342 A1/8-13/9	
EA342+	
FA343 A1/8-13/10	
EA343+	
FA344 A1/8-13/11	
EA344+	
FA345 L4/5-45	
EA345+	
FA345+	

STANDARDIZATION

FA401 B2/15/P4.2	ARE CONTROLS, DISPLAYS, MARKING, CODING, EQUIPMENT LAYOUT, ETC. UNIFORM FOR ALL COMMON FUNCTIONS PERFORMED BY THE EQUIPMENT?
EA401+	
EA401+	
FA402 B2/151P5.9.1.1	ARE STANDARD PARTS INCORPORATED INTO THE EQUIPMENT DESIGN TO THE MAXIMUM FEASIBLE EXTENT?
EA402+	HAVE STANDARDIZATION EFFORTS BEEN ACCOMPANIED BY PROVISIONS TO PRECLUDE IMPROPER MOUNTING AND INSTALLATION OF STANDARD EQUIPMENT?
EA403 B2/151P5.9.1.10	HAS UNIFORMITY BEEN MAINTAINED AMONG LIKE UNITS MANUFACTURED BY DIFFERENT CONTRACTORS?
EA403+	
EA403+	
FA404 L6/1/PA.6	
EA404+	

EA405 L4/5-38  
EA405+  
EA406 L4/5-38  
EA407 L4/5-55  
EA407+  
EA408 L4/5-55  
EA408+  
EA408+  
EA409 L4/5-55  
EA409+

WOULD REDESIGN PERMIT THE REPLACEMENT OF A NON-  
STANDARD PART WITH A STANDARD PART?  
ARE ALL NONSTANDARD PARTS COMPLETELY IDENTIFIED?  
HAS THE DESIGN BEEN COMPARED WITH SIMILAR DESIGNS  
TO OBTAIN OPTIMUM BENEFIT FROM PAST EXPERIENCE?  
HAS THE LOWEST COST STANDARD EQUIPEMNT BEEN USED  
THAT WILL MEET THE REQUIRED OPERATING  
CHARACTERISTICS?  
HAS THE USE OF EACH NONSTANDARD ITEM BEEN  
ADEQUATELY JUSTIFIED?

INTERCHANGEABILITY

FA001 C1/14-2/T14-1.1	DOES FUNCTIONAL INTERCHANGEABILITY EXIST WHERE
FA001+	PHYSICAL INTERCHANGEABILITY IS POSSIBLE?
FA002 C1/14-2/T14-1.2	DOES COMPLETE INTERCHANGEABILITY EXIST WHEREVER
FA002+	PRACTICAL?
FA003 C1/14-2/T14-1.3	HAS SUFFICIENT INFORMATION BEEN PROVIDED TO ENABLE
FA003+	A USER TO ADEQUATELY DETERMINE WHETHER TWO SIMILAR
FA003+	PARTS ARE INTERCHANGEABLE?
FA004 C1/14-2/T14-1.4	ARE CHANGES IN SIZE, SHAPE AND MOUNTING UTILIZED TO REFLECT
FA004+	FUNCTIONAL DIFFERENCES BETWEEN SIMILAR UNITS?
FA005 C1/14-2/T14-1.5	DOES COMPLETE INTERCHANGEABILITY EXIST FOR ALL
FA005+	ITEMS SERVING THE SAME FUNCTION IN DIFFERENT
FA005+	APPLICATIONS?
FA006 C1/14-2/T14-1.6	DO MOUNTING HOLES AND BRACKETS ACCOMMODATE UNITS
FA006+	OF THE SAME TYPE BUILT BY DIFFERENT MANUFACTURERS?
FA007 C1/14-2/T14-1.7	ARE IDENTICAL PARTS USED WHEREVER POSSIBLE IN
FA007+	SIMILAR EQUIPMENT OR A SERIES OF A GIVEN TYPE?
FA008 C1/14-2/T14-1.8	ARE PARTS, FASTENERS, CONNECTORS, ETC. STANDARDIZED
FA008+	THROUGHOUT THE SYSTEM?
FA009 C1/14-2/T14-1.9	ARE CABLE HARNESSSES DESIGNED SO THAT THEY CAN BE
FA009+	PREFABRICATED AND INSTALLED AS A UNIT?
FA010 C1/14-2/T14-1.10	IS COMPLETE ELECTRICAL AND MECHANICAL INTERCHANGE-
FA010+	ABILITY PROVIDED ON ALL LIKE REMOVEABLE COMPONENTS?
FA011 C1/14-2/T14-1.13	WHEN COMPLETE INTERCHANGEABILITY IS NOT PRACTICAL,
FA011+	ARE UNITS DESIGNED FOR FUNCTIONAL INTERCHANGE-
FA011+	ABILITY AND ADAPTERS PROVIDED FOR PHYSICAL
FA011+	INTERCHANGEABILITY, WHEREVER PRACTICAL?
FA012 A1/8-20/T8-13.2	ARE ALL COMPONENTS HAVING THE SAME PART NUMBER
FA012+	DIRECTLY AND COMPLETELY INTERCHANGEABLE?
FA013 A1/8-20/T8-13.5	ARE ALL BOLTS, SCREWS, FASTENERS, ETC. THE SAME
FA013+	SIZE FOR COVERS/CASES FOR A GIVEN EQUIPMENT?
FA014 A1/8-20/T8-13.7	CAN PARTS REPLACEMENT BE ACCOMPLISHED WITH STANDARD
FA014+	TOOLS?
FA015 L4/5-46	ARE PLUGS/RECEPTACLES KEYED TO PREVENT IMPROPER
FA015+	CONNECTIONS?
FA016 L4/5-46	ARE PLUG-IN BOARDS KEYED TO PREVENT IMPROPER
FA016+	INSTALLATION?
FA017 L4/5-42	ARE PRINTED CIRCUIT BOARDS KEYED TO PREVENT THEIR
FA017+	INTERCHANGE IN A UNIT?

IDENTIFICATION/MARKING

GA001 C1/13-9/T13-4.1	ARE ALL UNITS MARKED WITH FULL IDENTIFYING DATA?
GA002 C1/13-9/T13-4.2	ARE PARTS MARKED WITH RELEVANT CHARACTERISTICS DATA?
GA002+	
GA003 C1/13-9/T13-4.3	ARE STRUCTURAL MEMBERS MARKED WITH PHYSICAL COMPOSITION DATA?
GA003+	
GA004 C1/13-9/T13-4.4	IS EACH TERMINAL MARKED WITH THE SAME CODE SYMBOL AS THE WIRE ATTACHED TO IT?
GA004+	
GA005 C1/13-9/T13-4.5	ARE LABELS ON COMPONENTS OR CHASSIS ETCHED OR EMBOSSED RATHER THAN STAMPED OR PRINTED?
GA005+	
GA006 C1/13-9/T13-4.6	ARE LABELS IN FULL UNOBSTRUCTED VIEW?
GA007 C1/13-9/T13-4.7	IS THE MEANING OF COLOR CODING PROVIDED IN MANUALS AND ON ONE OR MORE EQUIPMENT PANELS?
GA007+	
GA008 C1/13-9/T13-4.8	IS COLOR CODING CONSISTENT THROUGHOUT THE SYSTEM DESIGN?
GA009+	
GA009 C1/13-9/T13-4.9	ARE NUMERALS AND LETTERS OF SIMPLE CONFIGURATION UTILIZED FOR ALL MARKINGS?
GA009+	
GA010 C1/13-9/T13-4.10	ARE CAPITAL LETTERS USED ON ALL MARKING LABELS?
GA011 C1/13-9/T13-4.10	IS STANDARD CAPITALIZATION AND LOWER CASE LETTERS USED FOR EXTENDED TEXT MATERIAL?
GA011+	
GA012 C1/13-9/T13-4.11	IS THE QUALITY OF THE DISPLAY LABELS SUCH THAT THEY WILL NOT BE LOST, MUTILATED OR UNREADABLE?
GA012+	
GA013 C1/13-9/T13-4.12	DO LABELS CLEARLY INDICATE THE FUNCTIONAL RELATIONSHIPS OF DISPLAYS AND CONTROLS?
GA013+	
GA014 C1/13-9/T13-4.12	ARE DISPLAYS LABELED BY FUNCTIONAL QUANTITY RATHER THAN OPERATIONAL CHARACTERISTICS?
GA014+	
GA015 C1/13-9/T13-4.13	DOES DISPLAYED PRINTED MATTER ALWAYS APPEAR UPRIGHT TO THE OPERATOR FROM HIS NORMAL VIEWING POSITION?
GA015+	
GA016 C1/13-9/T13-4.14	DO LABELS APPEAR ON EVERY ITEM THE OPERATOR MUST RECOGNIZE, READ, OR MANIPULATE?
GA016+	
GA017 C1/13-9/T13-4.15	ARE NUMBERS DISPLAYED FOR THE SEQUENCE OF USE OF CONTROLS?
GA017+	
GA018 C1/13-9/T13-4.16	ARE LABELS ATTACHED TO EACH TEST POINT TO SHOW WHAT IS MEASURED AT THE POINT?
GA018+	
GA019 C1/13-9/T13-4.17	ARE SCHEMATICS AND INSTRUCTIONS FOR TROUBLE SHOOTING AVAILABLE ON OR NEAR EACH UNIT?
GA019+	
GA020 C1/13-9/T13-4.18	DO DISPLAY LABELS ON COVERS PROVIDE RELEVANT CHARACTERISTICS OF THE UNIT?
GA020+	
GA021 C1/13-9/T13-4.19	ARE DUPLICATE POSITION LABELS PROVIDED INTERNALLY WHEN UNITS ARE TO BE CHECKED WITH COVERS REMOVED?
GA021+	
GA022 C1/13-9/T13-4.20	ARE DISPLAY CODES EXPLICITLY IDENTIFIED ON OR NEAR THE LOCATIONS WHERE THEY ARE USED?
GA022+	
GA023 C1/13-9/T13-4.21	ARE DISPLAYS LABELED SO THAT THEY CORRELATE WITH TECHNICAL DOCUMENTATION?
GA023+	
GA024 C1/13-9/T13-4.22	DO DISPLAY SCHEMATICS CLEARLY SHOW ANY RELATIONSHIPS TO OTHER SCHEMATICS?
GA024+	
GA025 C1/13-9/T13-4.23	ARE COLOR CODES EASILY IDENTIFIABLE UNDER ALL ILLUMINATION CONDITIONS AND ARE THEY RESISTANT TO DAMAGE AND WEAR?
GA025+	
GA026 C1/13-9/T13-4.24	HAVE METHODS BEEN UTILIZED TO EMPHASIZE THE FUNCTIONAL ORGANIZATION FOR DISPLAYS AND CONTROLS?
GA026+	
GA027 C1/13-9/T13-4.25	ARE ALL POTTED ITEMS ADEQUATELY LABELED?
GA028 C1/13-9/T13-4.26	ARE ALL STORAGE SPACES ADEQUATELY IDENTIFIED AND LABELED?
GA028+	
GA029 C1/13-9/T13-4.27	ARE ALL REMOVEABLE COVERS LABELED WITH PERMANENT PART NUMBERS?
GA029+	
GA030 C1/13-9/T13-4.28	ARE ALL LUBRICATION POINTS PROPERLY IDENTIFIED?
GA031 C1/13-9/T13-4.29	ARE ALL CONTROLS LABELED TO SHOW DIRECTION OF MOVEMENT?
GA031+	
GA032 A3/DN263/P4.4.B	ARE ACCESSES LABELED AND IDENTIFIED ACCORDINGLY IN THE MAINTENANCE INSTRUCTIONS?
GA032+	
GA033 A3/DN263/P4.3.C	ARE WARNING LABELS PROVIDED AT ALL ACCESSES WHERE

GA033*	HAZARDS MAY BE ENCOUNTERED?
GA034 R2/91/P5.5.2.3	ARE ALL LABELS LOCATED IN A CONSISTENT MANNER THROUGHOUT THE EQUIPMENT/SYSTEM?
GA034*	ARE ONLY STANDARD ABBREVIATIONS USED ON ALL MARKINGS AND LABELS?
GA035 R2/92/P5.5.3.2	DOES ONLY RELEVANT INFORMATION APPEAR ON ALL PLACARDS AND LABELS?
GA035*	ARE ALL LABELS AS CONCISE AS POSSIBLE WITHOUT DISTORTING THE MEANING OR INFORMATION?
GA036 R2/92/P5.5.3.3	DO LABEL COLORS CONTRAST WITH THE SURROUNDING COLORS?
GA036*	ARE WORDS AND SYMBOLS ON LABELS/PLACARDS SELECTED FOR BREVITY AND FAMILIARITY TO THE GENERAL PUBLIC?
GA037 R2/92/P5.5.4.1	ARE TECHNICAL WORDS AND SYMBOLS SELECTED ON THE BASIS THAT THEY WILL BE UNDERSTOOD BY THE OPERATOR?
GA037*	ARE PLATES FOR LABELS/PLACARDS SECURELY AND PERMANENTLY AFFIXED WITH SCREWS OR RIVETS?
GA038 R2/92/P5.5.4.6	ARE ALL FLUID LINES IDENTIFIED IN ACCORDANCE WITH APPLICABLE MILITARY STANDARDS?
GA038*	ARE ALL SERVICE POINTS IDENTIFIED BY LEGIBLE AND DURABLE MARKINGS?
GA039 A2/DN2E1/P1.3	ARE PERMANENTLY ATTACHED WARNING PLATES THAT OUTLINE PRECAUTIONARY MEASURES PROVIDED?
GA039*	ARE SERVICING INSTRUCTION PLATES PROVIDED AS REQUIRED?
GA040 A2/DN2E1/P1.4	ARE TANKS, DRAINS, ETC. ADEQUATELY LABELED?
GA040*	ARE CONTAINERS PROPERLY AND ADEQUATELY MARKED?
GA041 A2/DN2E1/P1.33	ARE LOCATIONS FOR SUPPORTS, ATTACHMENTS, ETC. ADEQUATELY MARKED?
GA041*	ARE ALL GROUNDING JACKS ADEQUATELY MARKED?
GA042 A2/DN2E1/P2.14	ARE ALL BATTERY COMPARTMENTS ADEQUATELY IDENTIFIED?
GA042*	ARE BATTERY SERVICE RECORDS KEPT ON, IN, OR NEAR EACH COMPARTMENT?
GA043 A2/DN2E1/P3.1	
GA043*	
GA044 A2/DN2E1/P3.5	
GA044*	
GA045 A2/DN2E1/P3.6	
GA045*	
GA046 A2/DN2E1/P3.7	
GA047 A2/DN2E1/P3.22	
GA048 A2/DN2E2/P1.29	
GA048*	
GA049 A2/DN4F5/P2.12	
GA050 A2/DN4F2/P2.1	
GA051 A2/DN4F2/P2.1	
GA051*	

## SAFETY

HA001	C1/15-9/T15-3.1	ARE GUARDS PROVIDED OVER ALL MOVING PARTS OF MACHINERY THAT MIGHT CAUSE INJURY?
HA001*		
HA002	C1/15-9/T15-3.2	ARE EDGES OF COMPONENTS AND ACCESS OPENINGS ROUNDED OR PROTECTED TO PREVENT INJURY?
HA002*		
HA003	C1/15-10/T15-3.18	ARE JACKING AND HOISTING POINTS CLEARLY IDENTIFIED?
HA004	C1/15-10/T15-3.22	ARE LIMIT STOPS PROVIDED ON DRAWERS AND PULLOUT ASSEMBLIES?
HA004*		
HA005	C1/15-10/T15-3.20	DO LATCHES HAVE A STRONG, POSITIVE, SIMPLE TO OPERATE LOCK FOR THE OPEN POSITION?
HA005*		
HA006	C1/15-10/T15-3.21	ARE STRUTS OR LATCHES PROVIDED TO SECURE HINGED OR SLIDING COMPONENTS AGAINST ACCIDENTAL MOVEMENT?
HA006*		
HA007	C1/15-10/T15-3.29	ARE COMPONENTS WITH HEAVY SPRINGS DESIGNED SO THAT THE SPRING CAN NOT BE INADVERTENTLY DISLODGED?
HA007*		
HA008	L6/4/PD.6	ARE SELF-LOCKING OR OTHER SAFETY DEVICES INCORPORATED INTO STANDS AND WORK PLATFORMS TO PREVENT ACCIDENTAL COLLAPSE?
HA008*		
HA008*		
HA009	L6/4/PD.7	ARE ANCHORS OR OUTRIGGERS PROVIDED ON STANDS WITH HIGH CENTERS OF GRAVITY?
HA009*		
HA010	L6/4/PD.9-.10	ARE HANDRAILS, CHAINS, SAFETY BARS, ETC. PROVIDED ON PLATFORMS, STAIRS, ETC. TO PREVENT FALLING?
HA010*		
HA011	L6/5/PD.17	ARE "NO STEP" MARKINGS PROVIDED WHERE APPLICABLE?
HA012	L6/6/PD.18	ARE WEIGHT CAPACITIES FOR STANDS, HOISTS, JACKS, ETC. CLEARLY INDICATED?
HA012*		
HA013	I1/169/8	ARE SAFETY DEVICES PROVIDED ON HOISTS, LIFTS, JACKS TO PREVENT LOADS BEING DROPPED IF POWER FAILS?
HA013*		
HA013*		
HA014	I1/169/7	ARE LIMIT SWITCHES AND INTERLOCKS PROVIDED TO PREVENT OVERTRAVEL ON LOAD CARRYING EQUIPMENT?
HA014*		
HA015	I1/169/13	ARE HEAVY ITEMS MOUNTED WITH A LOW CENTER OF GRAVITY FOR EASE OF HANDLING AND TO PREVENT TIPPING?
HA015*		
HA015*		
HA016	I1/169/14	ARE HEAVY ITEMS MOUNTED OVER OR NEAR LOAD BEARING STRUCTURES?
HA016*		
HA017	I1/169/15	ARE SUPPORTS, RETAINERS, SCREENS, ETC. PROVIDED TO PROTECT AGAINST FALLING OBJECTS?
HA017*		
HA018	L6/6/PD.21	ARE LINES CARRYING LIQUIDS AND GASSES CLEARLY MARKED AS TO CONTENTS, PRESSURE, TEMPERATURE, ETC.?
HA018*		
HA019	L6/6/PD.24	IS SKID PROOF MATERIAL PROVIDED ON ALL APPLICABLE SURFACES?
HA019*		
HA020	L6/5/PD.11	ARE AUTOMATIC SHUT-OFF DEVICES PROVIDED ON FUEL AND SERVICING EQUIPMENT TO PREVENT OVERFLOW AND SPILLAGE?
HA020*		
HA020*		
HA021	L6/5/PD.12	ARE PORTABLE FIRE EXTINGUISHERS PROVIDED IN AREAS WHERE FIRE HAZARDS MAY EXIST?
HA021*		
HA022	L6/5/PD.16	ARE AREAS OF OPERATION AND MAINTENANCE REQUIRING SPECIAL CLOTHING, TOOLS, OR EQUIPMENT ADEQUATELY IDENTIFIED?
HA022*		
HA022*		
HA023	L6/5/PD.14	IS FIRST AID EQUIPMENT READILY AVAILABLE IN AREAS WHERE TOXIC OR HARMFUL MATERIALS ARE HANDLED?
HA023*		
HA024	L6/5/PD.15	ARE PROVISIONS MADE TO NEUTRALIZE OR FLUSH HARMFUL MATERIALS SPILLED ON PERSONNEL OR EQUIPMENT?
HA024*		
HA025	L6/4/PD.4	ARE ALERTING DEVICES PROVIDED TO WARN PERSONNEL OF IMPENDING OR EXISTING HAZARDS?
HA025*		
HA026	C1/15-9/T15-3.5	ARE AUDIBLE WARNING SIGNALS DISTINCTIVE AND UNLIKELY TO BE OBSCURED BY OTHER NOISES?
HA026*		
HA027	C1/15-9/T15-3.6	ARE FAULT LOCATION SYSTEMS DESIGNED TO DETECT WEAK OR FAILING PARTS BEFORE AN EMERGENCY OCCURS?
HA027*		
HA027*		
HA027	C1/15-9/T15-3.7	ARE CRITICAL WARNING LIGHTS ISOLATED FROM OTHER LESS IMPORTANT LIGHTS FOR BEST EFFECTIVENESS?
HA027*		
HA028	C1/15-10/T15-3.8	ARE WARNING LIGHTS COMPATIBLE WITH THE EXPECTED AMBIENT ILLUMINATION LEVELS?
HA028*		
HA029	C1/15-10/T15-3.9	DO DISPLAYS THAT REQUIRE CONTINUOUS MONITORING BUT CAN NOT BE WATCHED CONTINUOUSLY HAVE A SUITABLE
HA029*		



HA029+	AUDITORY BACKUP WARNING DEVICE?
HA030 C1/15-10/T15-3.10	ARE REMOVEABLE COVERS OR WINDOWS PROVIDED OVER FUSES SO THAT THEY CAN BE EASILY CHECKED?
HA030+	ARE OPERATING AND DANGER RANGES ADEQUATELY DEFINED ON DISPLAYS TO SIMPLIFY CHECKREADINGS?
HA031 C1/15-10/T15-3.11	ARE CONTROL CIRCUITS AND WARNING CIRCUITS DESIGNED SO THAT THEY ARE NEVER COMBINED?
HA031+	ARE ON-OFF OR FAIL-SAFE CIRCUITS UTILIZED WHEREVER POSSIBLE TO MINIMIZE FAILURES WITHOUT THE OPERATORS KNOWLEDGE?
HA032 C1/15-10/T15-3.12	ARE BLEEDING DEVICES PROVIDED ON ALL HIGH-ENERGY CAPACITORS INVOLVED IN MAINTENANCE/REPAIRS?
HA032+	ARE ALL NEUTRAL PARTS OF ELECTRICAL SYSTEMS GROUNDED FOR PERSONNEL PROTECTION?
HA033 C1/15-10/T15-3.13	ARE ELECTRICAL/ELECTROMECHANICAL SYSTEMS DESIGNED TO BE EXPLOSION PROOF WHERE APPLICABLE?
HA033+	ARE TOOLS AND EQUIPMENT USED AROUND COMBUSTIBLES NONSPARKING AND EXPLOSION PROOF?
HA034 C1/15-10/T15-3.14	ARE HAZARDS ADEQUATELY IDENTIFIED BY CONSPICUOUS LABELS/PLACARDS?
HA034+	DO SWITCHES OR CONTROLS WHICH INITIATE HAZARDOUS OPERATIONS REQUIRE PRELIMINARY ACTIONS BY THE OPERATOR BEFORE THEY CAN BE UTILIZED?
HA035 C1/15-10/T15-3.15	ARE SAFETY INTERLOCKS USED WHEREVER NECESSARY?
HA035+	ARE ADJUSTMENTS AND COMMONLY REPLACED PARTS LOCATED AWAY FROM HIGH VOLTAGES OR HOT UNITS?
HA036 C1/15-10/T15-3.16	HAVE MATERIALS BEEN USED THAT DO NOT PRODUCE HAZARDOUS ENVIRONMENTS UNDER SEVERE OPERATING CONDITIONS (E.G., TAFLOX PRODUCES A POISONOUS GAS UNDER HIGH TEMPERATURE CONDITIONS)?
HA036+	ARE WARNING LIGHTS PROVIDED TO INDICATE FIRE OR EXCESSIVE HEAT IN AREAS NOT VISIBLE TO OPERATORS?
HA037 C1/15-10/T15-3.17	ARE INTERNAL CONTROLS/SWITCHES LOCATED AWAY FROM HAZARDS?
HA037+	ARE ELECTRICAL RECEPTICLES "HOT" AND PLUGS "COLD" WHEN DISCONNECTED?
HA038 C1/15-10/T15-3.23	CAN SOURCES OF DANGER BE SHUT OFF AND LOCKED UNDER CONTROL OF THE TECHNICIAN?
HA038+	ARE TOOL GUIDES PROVIDED IN WORK AREAS DANGEROUS TO REACH?
HA039 C1/15-10/T15-3.24	ARE PROTECTIVE DEVICES (FUSES, CIRCUIT BREAKERS, ETC) INCORPORATED INTO ALL CIRCUITS WHERE DAMAGE MAY OCCUR IN CASE OF A MALFUNCTION?
HA039+	HAVE LOCAL SAFETY SWITCHES BEEN PROVIDED AT ALL ROTATING ANTENNAS?
HA040 C1/15-10/T15-3.27	HAS PROTECTION BEEN PROVIDED AGAINST THE POSSIBLE IMPLOSION OF CATHODE-RAY TUBES?
HA041 C1/1K-10/T15-3.31	HAVE SHOCK MOUNTS BEEN BYPASSED WITH GROUNDING STRAPS?
HA041+	HAS INSULATION/PROTECTIVE FINISH BEEN REMOVED WHERE METAL TO METAL CONTACT IS REQUIRED?
HA042 C1/15/10/T15-3.35	ARE WARNING DEVICES ACTIVATED BY THE CRITICAL POSITION OF SWITCHES OR CONTROLS WHICH INITIATE HAZARDOUS OPERATIONS?
HA043 C1/15-10/T15-3.37	ARE AREAS FOR THE TRANSFER AND HANDLING OF COMBUSTIBLES ISOLATED FROM OTHER WORK AREAS?
HA043+	HAS ADEQUATE PROTECTION AGAINST NUCLEAR HAZARDS BEEN PROVIDED?
HA044 I1/169/2	ARE BATTERY COMPARTMENTS VENTED AS REQUIRED?
HA044+	ARE UNITS LOCATED AND MOUNTED SO THAT ACCESS TO THEM MAY BE ACHIEVED WITHOUT DANGE TO PERSONNEL FROM ELECTRICAL CHARGE, HEAT, SHARP EDGES, POINTS, MOVING PARTS, CHEMICALS AND OTHER CONTAMINANTS?
HA045 I1/169/3	HAS ADEQUATE PROTECTION BEEN PROVIDED AGAINST TOXIC FUMES?
HA045+	
HA046 I1/169/12	
HA046+	
HA047 I1/169/22	
HA047+	
HA048 L1/81/18	
HA048+	
HA049 A1/8-19/F8-12.4	
HA049+	
HA050 A1/8-19/F8-12.2	
HA050+	
HA051 L4/5-46	
HA051+	
HA052 L4/5-46	
HA052+	
HA053 L6/4/PD.3	
HA053+	
HA053+	
HA054 C1/16-9/T16-3.4	
HA054+	
HA055C1/3-4/T3-1.52	
HA055+	
HA056 C1/3-4/T3-1.45	
HA057 L6/22/P22	
HA057+	
HA057+	
HA057+	
HA058 C1/3-4/T3-1.49	

TEST EQUIPMENT

IA001 L5/119	ARE TEST EQUIPMENT INSTRUCTIONS STORED WITHIN THE UNIT?
IA001+	
IA002 L5/118	ARE WINDOWS FOR TEST EQUIPMENT DIALS BREAK AND SCRATCH RESISTANT?
IA002+	
IA003 L5/118	IS A SIGNAL PROVIDED THAT INDICATES WHEN TEST EQUIPMENT HAS WARMED UP?
IA003+	
IA004 L5/118	HAS WARMUP TIME FOR THE UNIT BEEN CLEARLY STATED?
IA005 L5/118	IS A SIMPLE CHECK PROVIDED TO DETERMINE WHEN THE TEST EQUIPMENT IS MALFUNCTIONING OR IS OUT OF CALIBRATION?
IA005+	
IA006 L5/118	IS THERE A SIMPLE METHOD FOR PUTTING THE TEST EQUIPMENT INTO CALIBRATION?
IA006+	
IA007 L5/118	ARE ALL REMOVEABLE PARTS OF TEST EQUIPMENT INCLUDING THE OUTER CASE CLEARLY LABELED WITH THEIR OFFICIAL NOMENCLATURE?
IA007+	
IA008 L5/118	IS EVERY ITEM LABELED THAT THE TECHNICIAN MUST RECOGNIZE READ OR MANIPULATE?
IA008+	
IA009 L5/118	ARE PROTECTIVE DEVICES PROVIDED THAT SAFEGUARD AGAINST DAMAGE IF THE WRONG SWITCH OR JACK POSITION IS USED?
IA009+	
IA010 L5/114	HAVE THE NUMBER OF CONTROLS AND DISPLAYS BEEN MINIMIZED ON THE TEST EQUIPMENT?
IA010+	
IA011 L5/114	ARE THE OPERATING INSTRUCTIONS CLEAR, CONCISE, AND EASY TO FOLLOW?
IA011+	
IA012 L5/115	HAVE THE NUMBER AND COMPLEXITY OF STEPS REQUIRED FOR TEST EQUIPMENT OPERATION BEEN MINIMIZED?
IA012+	
IA013 L5/115	DO TEST EQUIPMENT DISPLAYS PRESENT EXACT VALUES?
IA014 L5/115	IF TRANSFORMATION OF DISPLAY VALUES IS REQUIRED, ARE CONVERSION TABLES/FACTORS PROVIDED BY EACH SWITCH POSITION/DISPLAY SCALE?
IA014+	
IA015 L5/115	WHEN MORE THAN ONE SCALE IS IN THE TECHNICIAN'S VIEW, ARE THEY CLEARLY DIFFERENTIATED BY LABELING, COLOR CODING, ETC?
IA015+	
IA016 L5/116	ARE PHYSICAL AND VISUAL MEANS PROVIDED TO ENSURE THAT TEST EQUIPMENT IS DEENERGIZED WHEN TESTING IS COMPLETED?
IA016+	
IA017 L5/116	ARE SELECTOR SWITCHES PROVIDED IN LIEU OF A SERIES OF PLUG-IN CONNECTORS?
IA017+	
IA018 L5/116	IS ALL PORTABLE TEST EQUIPMENT RECTANGULAR IN SHAPE FOR EASE OF STORAGE?
IA018+	
IA019 L5/116	ARE HANDLES RECESSED OR HINGED TO REDUCE STORAGE SPACE REQUIREMENTS?
IA019+	
IA020 L5/117	HAS ADEQUATE STORAGE SPACE BEEN PROVIDED IN THE LID OR COVER FOR REMOVEABLE ITEMS/ACCESSORIES?
IA020+	
IA021 L5/117	HAVE THE PROPER LOCATIONS FOR THE VARIOUS ITEMS TO BE STORED BEEN ADEQUATELY IDENTIFIED?
IA021+	
IA022 L5/117	ARE FASTENERS/HOLDING DEVICES PROVIDED TO SECURE ACCESSORIES IN STORAGE COMPARTMENTS TO PREVENT DAMAGE TO THE TEST EQUIPMENT?
IA022+	
IA022 L5/118	IF ADAPTERS MUST BE USED, ARE THEY A PART OF THE REMOVEABLE ITEMS OF THE TEST EQUIPMENT?
IA022+	
IA023 C1/23-34/T23-5.7	HAS ADEQUATE SUPPORT BEEN PROVIDED FOR TEST EQUIPMENT ON OR NEAR THE UNIT BEING TESTED?
IA023+	
IA024 C1/23-35/T23-5.11	DO PLUGS, JACKS, ETC. USED FOR TESTING THE TEST EQUIPMENT APPEAR ON THE OUTER CASE SO THAT CASE REMOVAL IS NOT NECESSARY?
IA024+	
IA025 C1/23-35/T23-5.11	IF INTERNAL REPAIRS REQUIRE CASE REMOVAL ARE DUPLICATE JACKS, PLUGS, ETC. PROVIDED ON THE CHASSIS?
IA025+	
IA026 C1/23-35/T23-5.14	IS THE PURPOSE AND OPERATING PRECAUTIONS FOR THE TEST EQUIPMENT DISPLAYED ON ITS OUTER SURFACE?
IA026+	
IA027 C1/23-35/T23-5.9	DOES TEST EQUIPMENT PACKAGING REFLECT THE MANNER

IA027*	IN WHICH IT WILL BE USED?
IA028 A3/DN2G5/P2.6.P	HAVE THE TEST LEADS BEEN DESIGNED TO REQUIRE ONLY A FRACTION OF A TURN FOR ATTACHMENT TO THE PRIME EQUIPMENT?
IA028*	ARE BENCH MOCKUPS PROVIDED FOR FAULT ISOLATION IN UNITS BROUGHT IN FROM THE FIELD FOR SHOP OR DEPOT MAINTENANCE?
IA028*	ARE EXTENSION CABLES PROVIDED SO THAT ALL UNITS CAN BE REMOVED FROM THE MOCKUP FOR CHECKING?
IA019 A3/DN2G5/P3.1	ARE QUICK DISCONNECT TYPE CONNECTORS USED ON ALL MOCKUP CABLES?
IA019*	ARE EXTRA-HEAVY PROTECTIVE COVERINGS PROVIDED ON ALL MOCKUP CABLES?
IA019*	ARE ALL MOCKUP CABLES PROVIDED WITH TEST POINTS FOR CHECKING SIGNAL FLOW THROUGH EACH WIRE?
IA030 A3/DN2G5/3.2.A	ARE CORRECT SIGNAL VALUES AND TOLERANCES PROVIDED FOR EACH TEST POINT IN THE MOCKUP OPERATING INSTRUCTIONS?
IA030*	IS THE MOCKUP INSTALLED SO THAT EVERY UNIT IS ACCESSIBLE WITHOUT REMOVING ANY OTHER UNIT?
IA031 A3/DN2G5/3.2.B	HAS SUFFICIENT ROOM BEEN PROVIDED IN THE MOCKUP LAYOUT FOR THE TECHNICIAN TO ACCESS ALL UNITS?
IA031*	HAS ALL STANDARD TEST EQUIPMENT FOR MAINTENANCE BEEN IDENTIFIED AND IS IT AVAILABLE?
IA032 A3/DN2G5/P3.2.C	HAS ALL SPECIAL TEST EQUIPMENT FOR MAINTENANCE BEEN IDENTIFIED AND IS IT AVAILABLE?
IA032*	HAVE THE PRIME EQUIPMENT DESIGN REQUIREMENTS FOR UNITS, COVERS AND CASES, CABLES, CONNECTORS, ETC. ALSO BEEN APPLIED TO THE DESIGN OF SPECIAL TEST EQUIPMENT (SEE ITEMS AA THROUGH HA INCLUSIVE FOR DETAILED DESIGN QUESTIONS)?
IA033 A3/DN2G5/P3.2.D	DOES SPECIAL TEST EQUIPMENT HAVE EITHER SELF-CHECKING FEATURES OR TEST POINTS FOR CHECKING BY AUXILIARY EQUIPMENT?
IA033*	CAN THE NEEDED TEST EQUIPMENT BE PROVIDED AND USED UNDER TYPICAL MAINTENANCE CONDITIONS?
IA034 A3/DN2G5/P3.2.5	CAN FAULT DETECTION/ISOLATION BE ACCOMPLISHED WITH THE STANDARD AND SPECIAL PURPOSE TEST EQUIPMENT PROVIDED?
IA034*	IS BUILT-IN TEST EQUIPMENT PROVIDED WHERE USE IS HEAVY AND ACCESS TO THE PRIME EQUIPMENT IS LIMITED?
IA034*	IS THE TEST EQUIPMENT DESIGNED TO PERMIT ONE-MAN TROUBLESHOOTING IN THE SHORTEST POSSIBLE TIME?
IA035 A3/DN2G5/3.2.G	ARE PROBE TIPS DESIGNED TO PROVIDE ADEQUATE CONTACT?
IA035*	ARE MAJOR TEST LEADS PERMANENTLY ATTACHED AND OF ADEQUATE LENGTH?
IA036 A3/DN2G5/P3.2.H	IS PORTABLE TEST EQUIPMENT SELF POWERED?
IA036*	ARE STANDARD WORK BENCHES AND ACCESSORIES PROVIDED AS NEEDED?
IA037 A3/DN2G2/P5.F	DO WORK BENCHES HAVE STORAGE SPACE FOR TESTERS, TOOLS, MANUALS, ETC?
IA037*	ARE PHONES, HEAD SETS, SIGNAL FLAGS, ETC PROVIDED AT APPROPRIATE WORK STATIONS?
IA038 A3/DN2G2/P5.G	ARE EQUIPMENT STANDS, RESTS AND DOLLIES PROVIDED WHERE NEEDED?
IA038*	ARE STANDS/DOLLIES COMPATIBLE WITH ACCESSSES TO THE EQUIPMENT TO BE MAINTAINED?
IA039 A3/DN2G5/P1	ARE SHELVES, HOLDERS, REELS, ETC. BUILT-IN WHEREVER PRACTICAL?
IA039*	IS SAFETY EQUIPMENT PROVIDED/STORED WHERE NEEDED?
IA039*	ARE PLATFORMS A MINIMUM OF 6 SQUARE FEET IN SIZE AND ARE ADEQUATE SUPPORTS PROVIDED TO ALLOW BOTH HANDS FREE TO PERFORM TASKS?
IA039*	ARE STAIRS/LADDERS/RAMPS OF ADEQUATE SIZE, SHAPE AND STRENGTH PROVIDED AS REQUIRED?
IA040 A3/DN2G1/P3.D	
IA040*	
IA040*	
IA041 A3/DN2G2/P6.R	
IA041*	
IA042 L4/5-45	
IA042*	
IA042*	
IA043 I1/171/4	
IA043*	
IA044 I1/17/7	
IA044*	
IA045 I1/171/10	
IA045*	
IA046 I1/171/11	
IA046*	
IA047 I1/171/24	
IA048 I1/170/1	
IA048*	
IA049 I1/170/2	
IA049*	
IA050 I1/170/3	
IA050*	
IA051 I1/170/4	
IA051*	
IA052 I1/170/5	
IA052*	
IA053 I1/170/7	
IA053*	
IA054 I1/170/8	
IA051 I1/170/19	
IA051*	
IA051*	
IA056 I1/170/22	
IA056*	

IA057	11/170/23	ARE SHELTERS/DECKS/COVERS PROVIDED TO PROTECT MEN AND EQUIPMENT AS NECESSARY?
IA057*		
IA051	11/170/24	ARE CRANES, HOISTS, AND ACCESSORIES PROVIDED AS NECESSARY?
IA051*		
IA059	A1/9-17/F9-6.3	DOES THE TEST EQUIPMENT MEET SPECIFIED DETECTABILITY REQUIREMENTS?
IA059*		
IA060	A1/9-17/F9-6.4	DOES THE TEST EQUIPMENT PROVIDE FAULT ISOLATION TO THE DESIRED REPLACEMENT LEVEL?
IA060*		
IA061	A1/9-17/F9-6.5	IS THE TEST EQUIPMENT COMPATIBLE WITH ENVIRONMENTAL EXTREMES UNDER DEPLOYED CONDITIONS?
IA061*		
IA062	A1/9-17/F9-6.12	HAVE ALL PARAMETERS AND MEASUREMENT LIMITS BEEN ESTABLISHED FOR THE TEST EQUIPMENT?
IA062*		
IA063	A1/9-17/F9-6.15	DO SENSORS OPERATE WITHOUT DISTURBING OR LOADING THE SYSTEM UNDER TEST?
IA063*		
IA064	A1/8-18/F8-11.5	HAS THE TEST EQUIPMENT BEEN DESIGNED TO MINIMIZE THE POSSIBILITY OF OPERATOR ERROR?
IA064*		
IA065	A1/8-18/F8-11.12	HAS THE TEST EQUIPMENT BEEN DESIGNED TO CHECK THE TEST ITEM AT THE HIGHEST POSSIBLE FUNCTIONAL LEVEL?
IA065*		

TEST POINTS

JA001 C1/23-30/T23-4.1	ARE TEST POINTS LOCATED ON FRONT PANELS WHEREVER POSSIBLE?
JA001+	
JA002 C1/23-30/T23-4.2	IS ACCESSIBILITY TO EXTERNAL TEST POINTS ASSURED UNDER USE CONDITIONS?
JA002+	
JA003 C1/23-30/T23-4.3	ARE TEST POINTS GROUPED FOR ACCESSIBILITY AND CONVENIENCE OF SEQUENTIAL TESTING?
JA003+	
JA004 C1/23-30/T23-4.4	IS EACH TEST POINT FULLY IDENTIFIED?
JA004+	
JA005 C1/23-30/T23-4.5	IS EACH TEST POINT LABELED WITH ITS IN-TOLERANCE SIGNAL OR LIMITS WHICH SHOULD BE MEASURED?
JA005+	
JA006 C1/23-30/T23-4.6	ARE TEST POINTS LABELED WITH THE DESIGNATION OF AVAILABLE OUTPUTS?
JA006+	
JA007 C1/23-30/T23-4.7	ARE ALL TEST POINTS UNIQUELY COLOR CODED?
JA007+	
JA008 C1/23-30/T23-4.8	ARE TEST POINTS PROVIDED IN ACCORDANCE WITH THE SYSTEM MAINTENANCE AND TEST PLANS?
JA008+	
JA009 C1/23-30/T23-4.9	ARE TEST LEAD CONNECTORS USED THAT REQUIRE ONLY A FRACTION OF A TURN TO CONNECT?
JA009+	
JA010 C1/23-30/T23-4.10	ARE TEST POINTS LOCATED CLOSE TO ASSOCIATED CONTROLS AND DISPLAYS?
JA010+	
JA011 C1/23-30/T23-4.11	IS EACH TEST POINT USED IN ADJUSTMENT PROCEDURES ASSOCIATED WITH ONLY ONE ADJUSTMENT CONTROL?
JA011+	
JA012 C1/23-30/T23-4.12	IS AN UNAMBIGUOUS SIGNAL PROVIDED AT A TEST POINT WHEN THE ASSOCIATED CONTROL HAS BEEN MOVED?
JA012+	
JA013 C1/23-30/T23-4.14	ARE TEST POINTS PROVIDED FOR DIRECT CHECK OF ALL REPLACEABLE PARTS?
JA013+	
JA014 C1/23-30/T23-4.15	CAN FAN-OUT CABLES IN JUNCTION BOXES BE USED FOR CHECKING IF STANDARD TEST POINTS ARE NOT PROVIDED?
JA014+	
JA015 C1/23-30/T23-4.16	ARE TEST POINTS LOCATED IN ONE PLACE TO THE MAXIMUM EXTENT POSSIBLE?
JA015+	
JA016 C1/23-30/T23-4.17	ARE TEST POINTS CODED TO THEIR ASSOCIATED UNITS TO INDICATE LOCATION OF FAULTY CIRCUITS?
JA016+	
JA017 C1/23-30/T23-4.18	HAVE ADEQUATE TEST POINTS BEEN PROVIDED TO MINIMIZE THE STEPS INVOLVED IN TROUBLESHOOTING?
JA017+	
JA018 C1/23-30/T23-4.19	ARE TEST POINT LOCATIONS EASY TO FIND, ACCESSIBLE, AND OBSERVABLE FROM THE WORKING POSITION?
JA018+	
JA019 C1/23-30/T23-4.20	HAVE TEST POINTS THAT PROVIDE TEST PROBE RETENTION BEEN UTILIZED WHERE REQUIRED?
JA019+	
JA020 C1/23-30/T23-4.22	ARE ROUTINE TEST POINTS READILY AVAILABLE TO THE TECHNICIAN WITHOUT THE REMOVAL OF COVERS, CASES, ETC.?
JA020+	
JA020+	
JA021 C1/23-30/T23-4.23	ARE TEST POINTS ADEQUATELY PROTECTED AND ILLUMINATED?
JA021+	
JA022 C1/23-30/T23-4.24	ARE ROUTINE TEST POINTS AVAILABLE TO THE TECHNICIAN WITHOUT REMOVAL OF THE CHASSIS FROM RACKS OR CABINETS?
JA022+	
JA022+	
JA023 L4/5-46	ARE TEST POINTS DESIGNED TO PROTECT THE CIRCUITRY BEING CHECKED?
JA023+	
JA024 L4/5-46	HAVE VOLTAGE DIVIDERS BEEN PROVIDED AT TEST POINTS FOR CIRCUITS CARRYING MORE THAN 300 VOLTS?
JA024+	
JA025 L6/29/PK.3	ARE PRIMARY TEST POINTS READILY DISTINGUISHED FROM SECONDARY TEST POINTS?
JA025+	
JA026 L6/29/PK.6	ARE TEST POINTS PROVIDED AT THE INPUT AND OUTPUT OF EACH THROW-AWAY COMPONENT WHERE FEASIBLE?
JA026+	
JA027 L1/79/P7.E	HAVE TERMINAL BOARD CONNECTIONS THAT ARE TO BE USED AS TEST POINTS BEEN IDENTIFIED?
JA027+	
JA028 I1/172/3	ARE A MINIMUM NUMBER OF DIFFERENT TYPES/SIZES OF TEST POINTS USED?
JA028+	
JA029 I1/172/6	ARE TEST POINTS PROVIDED IN ALL CONNECTORS, JACKS, AND TERMINALS?
JA029+	
JA030 I1/172/8	ARE TEST POINTS EXPOSED EXCEPT WHERE CONCEALMENT IS REQUIRED?
JA030+	
JA031 I1/172/10	ARE TEST POINTS GROUPED ON THE MOST ACCESSIBLE FACE OF EACH UNIT?
JA031+	

JA032 11/172/11  
JA032+  
JA033 11/172/16  
JA033+  
JA034 11/172/21  
JA034+  
JA034+  
JA035 11/172/22  
JA035+  
JA036 11/172/23  
JA037 11/172/25  
JA037+  
JA038 L5/78  
JA038+  
JA039 L5/81  
JA039+  
JA039+

ARE TEST POINTS GROUPED WITHIN NORMAL LIMITS OF  
TEST LEAD LENGTHS?  
HAS ADEQUATE WORK SPACE BEEN PROVIDED AROUND  
TEST POINTS?  
HAVE LUMINESCENT MARKINGS BEEN PROVIDED TO AID IN  
TEST POINT LOCATION WHERE LOW ILLUMINATION MAY  
EXIST?  
ARE THE TEST POINTS DESIGNED TO WITHSTAND LONG  
USAGE?  
ARE TEST POINTS ADEQUATELY INSULATED?  
ARE TEST POINTS LOCATED/PROTECTED FROM MOISTURE,  
DIRT AND CORROSIVES?  
ARE TEST POINTS GROUPED ON TEST PANELS WHERE  
APPROPRIATE?  
ARE TEST POINTS PROVIDED SO THAT TROUBLESHOOTING  
OF COMPONENTS DOES NOT REQUIRE THEIR REMOVAL FROM  
A MAJOR ASSEMBLY?

TOOL REQUIREMENTS

KA001 11/173/1	IS THE DESIGN SUCH THAT EACH SPECIALIST CARRIES A MINIMUM NUMBER AND WEIGHT OF TOOLS?
KA001*	
KA002 11/173/2	ARE A MINIMUM NUMBER OF TOOLS REQUIRED FOR EACH MAINTENANCE TASK?
KA002*	
KA003 11/173/3	HAVE THE REQUIRED TOOLS BEEN SELECTED FROM STANDARD TOOL LISTS?
KA003*	
KA004 11/173/5	ARE TOOL KITS SMALL, LIGHT, DURABLE, AND EASY TO HANDLE?
KA004*	
KA005 11/173/4	DO TOOL ALLOWANCES COVER ALL MAINTENANCE PROCEDURES AND TASK?
KA005*	
KA006 11/173/6	ARE TOOL KITS PROVIDED WITH HANDLES AND STRAPS?
KA007 11/173/6	HAS ADEQUATE STORAGE SPACE BEEN PROVIDED IN EACH TOOL KIT?
KA007*	
KA008 11/173/7	ARE SPECIAL TOOLS REQUIRED ONLY IF NO STANDARD TOOL WILL DO?
KA008*	
KA009 11/173/8	ARE SPECIAL TOOLS PROVIDED WITH AND STORED IN THE EQUIPMENT?
KA009*	
KA010 11/173/9	ARE UNUSUAL SHAPED STANDARD TOOLS AVOIDED?
KA011 11/173/10	ARE SPEED AND RATCHET TYPE TOOLS PROVIDED TO REDUCE TASK TIME?
KA011*	
KA012 11/173/11	ARE A MINIMUM VARIETY OF SIZES OF STANDARD TOOLS NEEDED?
KA012*	
KA013 11/173/12	ARE ALL TOOLS DURABLE, RUGGED, AND PROVIDED WITH A DULL FINISH?
KA013*	
KA014 11/173/13	ARE METAL HANDLED TOOLS AVOIDED FOR USE UNDER EXTREME TEMPERATURES AND NEAR HIGH VOLTAGES?
KA014*	
KA015 11/173/15	ARE INSULATED, NONSPARKING TOOLS PROVIDED FOR USE NEAR COMBUSTABLE MATERIALS?
KA015*	
KA016 11/173/16	UNDER NORMAL USE ARE MODULE PULLERS DESIGNED SO THAT THEY CAN NOT DAMAGE/SHORT MODULES?
KA016*	
KA017 11/173/17	ARE EXTENDERS, ADAPTERS, CLIPS, ETC. PROVIDED AS REQUIRED?
KA017*	
KA018 11/173/18	ARE EXTENSION CABLES, HOSES, ETC PROVIDED AS NEEDED?
KA018*	
KA019 11/173/19	HAVE PRECISION OR CALIBRATED TOOLS BEEN AVOIDED FOR FIELD USE?
KA019*	
KA020 11/173/20	ARE TASKS REQUIRING MANY SPECIAL OR DELICATE TOOLS PERFORMED ONLY IN THE SHOP?
KA020*	
KA021 11/173/21	ARE TOOL TIPS AND WEARING SURFACES REPLACEABLE?
KA022 A3/0N267/P5.D	HAVE GUIDES BEEN PROVIDED FOR TOOLS IN THE EQUIPMENT WHEN AN ADJUSTMENT WOULD OTHERWISE BE DIFFICULT TO LOCATE?
KA022*	
KA022*	
KA023 A3/0N267/P5.E	ARE GUARDS PROVIDED FOR TOOLS IN THE EQUIPMENT WHEN AN ADJUSTMENT COULD BE DANGEROUS TO LOCATE?
KA023*	
KA024 C1/11-4/P11-3.2.14	ARE REMOTELY CONTROLLED TOOLS PROVIDED WHERE FEASIBLE, TO REDUCE MAINTENANCE TIME?
KA024*	
KA025 C1/11-4/P11-3.2.19	HAVE ADEQUATE GRIPPING SURFACES BEEN PROVIDED ON HAND TOOL HANDLES?
KA025*	
KA026 C1/11-4/P11-3.2.21	ARE HOLDING TOOLS (PLIERS, CLAMPS, ETC.) PROVIDED WITH SKID-PROOF HOLDING SURFACES?
KA026*	
KA027 C1/11-5/P11-3.2.24	ARE TEMPLATES PROVIDED FOR MAKING SURFACE CONTROL ADJUSTMENTS?
KA027*	
KA028 C1/11-5/P11-3.2.24	ARE TEMPLATES PROVIDED FOR MOUNTING LINKS, ARMS, RODS, ETC. ON FLAT SURFACES?
KA028*	
KA029 C1/11-5/P11-3.2.25	ARE HIGH SPEED SOLDERING DEVICES PROVIDED THAT WILL MELT THE CONNECTIONS BEING SERVICED WITHOUT DAMAGE TO ADJACENT ELEMENTS?
KA029*	
KA029*	
KA030 C1/11-5/P11-3.2.26	ARE CLAMPING DEVICES PROVIDED TO REMOVE SMALL PLUG-IN ASSEMBLIES?
KA030*	
KA031 C1/11-5/P11-3.2.30	HAVE PRINTED CIRCUIT CARD EXTENDERS, CARD EXTRACTORS AND HEAT SINKS FOR SOLDERING PURPOSES BEEN PROVIDED?
KA031*	
KA031*	

TRUBLE SHOOTING AIDS

LA001 L1/78/6.A	HAVE SUFFICIENT INDICATORS BEEN PROVIDED FOR ACCURATE AND EASY DETERMINATION OF EQUIPMENT PERFORMANCE?
LA001*	
LA001*	
LA002 L1/78/6.B	HAVE GO-NO-GO INDICATORS BEEN PROVIDED WHEREVER POSSIBLE?
LA002*	
LA003 L1/79/6.C	HAVE AUDITORY SIGNALS BEEN PROVIDED TO SUPPLEMENT FAULT INDICATORS FOR EQUIPMENT MALFUNCTIONS?
LA003*	
LA004 L1/79/6.D	HAS MAXIMUM USE OF BUILT-IN TEST EQUIPMENT BEEN MADE CONSISTENT WITH OPERATIONAL REQUIREMENTS AND THE MAINTENANCE CONCEPT?
LA004*	
LA005 L1/79/6.F	HAVE SELF-TEST FEATURES BEEN PROVIDED WHEREVER PRACTICAL?
LA005*	
LA006 B2/151/P5.9.1.6	IS RAPID AND POSITIVE FAULT DETECTION AND ISOLATION OF DEFECTIVE EQUIPMENT PROVIDED TO PERMIT THEIR PROMPT REMOVAL AND REPLACEMENT?
LA006*	
LA006*	
LA007 L4/5-52	DO THE CODING AND SYMBOLS ON EQUIPMENT COINCIDE WITH INSTRUCTIONS IN THE MAINTENANCE MANUAL?
LA007*	
LA008 L4/5-52	ARE THE MAINTENANCE MANUALS ORGANIZED SO THAT INFORMATION CAN BE QUICKLY FOUND?
LA008*	
LA009 L4/5-52	ARE TROUBLESHOOTING INSTRUCTIONS CLEAR, CONCISE, AND EASY TO FOLLOW?
LA009*	
LA010 L6/22/PF.22	ARE LIGHTS USED ONLY FOR MAINTENANCE AND ADJUSTMENTS COVERED, BUT READILY ACCESSIBLE AND VISIBLE WHEN NEEDED BY THE TECHNICIAN?
LA010*	
LA010*	
LA011 R2/15/P4.2	HAS COLOR CODING BEEN UTILIZED FOR POSITIVE IDENTIFICATION OF WIRES, TERMINALS, MODULES, ETC?
LA011*	
LA012 L6/58/PC	HAS ADEQUATE ILLUMINATION BEEN PROVIDED FOR TROUBLESHOOTING THE EQUIPMENT?
LA012*	
LA013 A2/DM2A1/P1	HAS ADEQUATE SPACE BEEN PROVIDED AROUND UNITS FOR TOOLS AND TEST EQUIPMENT UTILIZED FOR TROUBLESHOOTING?
LA013*	
LA013*	



HUMAN FACTORS-GENERAL

MA001	R2/115/P5.7.1.1	HAS A KICK SPACE OF AT LEAST FOUR INCHES HIGH AND FOUR INCHES DEEP BEEN PROVIDED AT THE BASE OF EACH CABINET, CONSOLE, ETC?
MA001+		
MA002	R2/115/P5.7.1.2	ARE HANDLES ON CABINETS AND CONSOLES RECESSED OR DESIGNED SUCH THAT THEY NEITHER INJURE PERSONNEL NOR ENTANGLE EQUIPMENT AND CLOTHING?
MA002+		
MA003	R2/115/P5.7.1.3	HAS AT LEAST FOUR FEET OF FREE FLOOR SPACE BEEN PROVIDED WHEREVER FEASIBLE?
MA003+		
MA004	R2/115/P5.7.1.3.1	IS THE WORK AREA AT LEAST 42 INCHES DEEP IN FRONT OF RACKS?
MA004+		
MA005	R2/115/P5.7.1.3.2	IS THE MINIMUM LATERAL WORK SPACE FOR RACKS HAVING DRAWERS WEIGHING LESS THAN 45 POUNDS, 18 INCHES ON ONE SIDE AND 4 INCHES ON THE OTHER, AND FOR DRAWERS OVER 45 POUNDS, 18 INCHES ON EACH SIDE?
MA005+		
MA006	R2/115/P5.7.1.3.3	HAS ADEQUATE AND SUITABLE STORAGE SPACE BEEN PROVIDED IN OR NEAR CONSOLES FOR MANUALS, WORK SHEETS, MATERIALS, ETC., REQUIRED BY OPERATOR AND MAINTENANCE PERSONNEL?
MA006+		
MA007	R2/115/P5.7.1.4	DOES THE SLOPE OF THE CONTROL-DISPLAY PANEL BEGIN AT SHELF LEVEL FOR NORMAL CONSOLE OPERATION?
MA007+		
MA008	L6/8/P R.4	HAS ADEQUATE ROOM BEEN PROVIDED TO ACCOMMODATE THE HAND FOR GRASPING ALL HANDLES?
MA008+		
MA009	L6/8/P R.3	HAS ADEQUATE SPACE BEEN PROVIDED FOR THE OPERATOR/TECHNICIAN TO PERFORM HIS FUNCTIONS WHEN WEARING PROTECTIVE CLOTHING/DEVICES?
MA009+		
MA010	R2/117/P5.7.4	HAS ADEQUATE SPACE BEEN PROVIDED FOR THE TECHNICIAN TO PERFORM IN UNUSUAL POSITIONS SUCH AS STOOPING, SQUATTING, KNEELING, ETC?
MA010+		
MA011	R2/16/P4.4.L	HAVE PROVISIONS BEEN MADE TO MINIMIZE PHYSICAL AND MENTAL STRESS AND FATIGUE?
MA011+		
MA012	L1/R2/21	HAVE ENDURANCE AND ENERGY OF THE TECHNICIAN BEEN CONSIDERED IN DEVELOPING THE MAINTENANCE APPROACH?
MA012+		
MA013	L1/R2/22	HAVE EYE-HAND COORDINATION AND MANUAL DEXTERITY BEEN CONSIDERED IN IDENTIFYING MAINTENANCE ACTIONS?
MA013+		
MA015	L1/R2/26	HAS ARM, LEG AND BACK STRENGTH OF THE TECHNICIAN BEEN CONSIDERED IN DETERMINING MAINTENANCE ACTIONS?
MA015+		
MA016	L4/5-51	DO VISUAL INDICATORS AND DISPLAYS PROVIDE CLEAR, CONCISE AND ACCURATE INFORMATION UNDER ALL OPERATING/MAINTENANCE CONDITIONS?
MA016+		
MA017	L4/5-52	DOES THE EQUIPMENT DESIGN ARRANGEMENT ALLOW SPACE FOR SEVERAL OPERATORS TO WORK WITHOUT INTERFERING WITH EACH OTHER?
MA017+		
MA018	L4/5-52	DO ARRANGEMENTS AND LAYOUTS BALANCE THE WORK LOAD BETWEEN THE TWO HANDS?
MA018+		
MA019	B2/59/P5.4.1.1	HAVE CONTROLS BEEN SELECTED SO THAT NONE OF THE OPERATOR'S LIMBS WILL BE OVERBURDENED?
MA019+		
MA020	B2/59/P5.4.1.1	HAS OPERATION UNDER VARIABLE G-LOADS BEEN CONSIDERED IN THE SELECTION OF CONTROLS?
MA020+		
MA021	B2/26/P5.2.1.3	ARE DISPLAYS THAT ARE USED MOST FREQUENTLY GROUPED TOGETHER AND PLACED IN THE OPTIMUM VISUAL ZONE?
MA021+		
MA022	B2/26/P5.2.1.3	ARE VERY IMPORTANT OR CRITICAL DISPLAYS PLACED IN THE OPTIMUM VISUAL ZONE OR OTHERWISE HIGHLIGHTED?
MA022+		
MA023	B2/26/P5.2.1.3	IS THE ARRANGEMENT OF DISPLAYS CONSISTANT FROM APPLICATION TO APPLICATION THROUGHOUT THE SYSTEM?
MA023+		
MA024	B2/30/P5.2.2.1	FOR CRITICAL FUNCTIONS, ARE INDICATOR LIGHTS LOCATED WITHIN 15 DEGREES OF THE OPERATOR'S NORMAL LINE OF SIGHT?
MA024+		
MA025	B2/19/P5.1.1.1	ARE CONTROL-DISPLAY RELATIONSHIPS FUNCTIONALLY EFFECTIVE?

STANDING TASKS

MA101 R2/115/P5.7.2.1	HAVE CONVENIENT WORK SURFACES BEEN PROVIDED TO SUPPORT MANUALS, WORK SHEETS, ETC. FOR STANDING OPERATIONS?
MA101+	
MA102 R2/116/P5.7.2.2	HAVE VISUAL DISPLAYS ON VERTICAL SURFACES BEEN PLACED BETWEEN 41 INCHES AND 74 INCHES ABOVE THE STANDING SURFACE?
MA102+	
MA103 R2/116/P5.7.2.3	HAVE INDICATORS THAT MUST BE READ FREQUENTLY BEEN PLACED BETWEEN 50 INCHES AND 69 INCHES ABOVE THE STANDING SURFACE?
MA103+	
MA104 R2/116/P5.7.2.4	HAVE CONTROLS MOUNTED ON A VERTICAL SURFACE BEEN PLACED BETWEEN 34 AND 74 INCHES ABOVE THE STANDING SURFACE?
MA104+	
MA105 R2/116/P5.7.2.5	HAVE CONTROLS REQUIRING FREQUENT OPERATION AND EMERGENCY CONTROLS BEEN PLACED BETWEEN 34 AND 57 INCHES ABOVE THE STANDING SURFACE?
MA105+	
MA106 L6/9/P C.5	ARE WORK SURFACES/BENCHES 36 INCHES ABOVE THE FLOOR FOR STANDING OPERATIONS?
MA106+	

SEATED TASKS

MA201 R2/116/P5.7.3.1	ARE WORK SURFACES 30 INCHES WIDE AND 16 INCHES DEEP WHEREVER PRACTICAL FOR SEATED OPERATIONS?
MA201+	
MA202 R2/116/P5.7.3.2	ARE WRITING SURFACES/DESK TOPS 29 TO 31 INCHES ABOVE THE FLOOR?
MA202+	
MA203 R2/116/P5.7.3.3	ARE WRITING SURFACES AT LEAST 24 INCHES WIDE AND 16 INCHES DEEP?
MA203+	
MA204 R2/116/P5.7.3.4.1	DOES SEATING PROVIDE ADEQUATE BODY SUPPORT RELATIVE TO THE ACTIVITIES TO BE PERFORMED?
MA204+	
MA205 R2/116/P5.7.3.4.2	HAVE PROVISIONS BEEN MADE FOR VERTICAL SEAT ADJUSTMENTS BETWEEN 16 AND 21 INCHES?
MA205+	
MA206 R2/116/P5.7.3.4.3	HAS A BACKREST BEEN PROVIDED THAT RECLINES BETWEEN 103 AND 115 DEGREES AND SUPPORTS THE TORSO SUCH THAT THE "EYE LINE" CAN BE ACHIEVED WITH NO MORE THAN 3 INCHES OF FORWARD BODY MOVEMENT?
MA206+	
MA207 R2/117/P5.7.3.4.4	IS CUSHIONING PROVIDED THAT IS AT LEAST ONE INCH THICK OF COMPRESSIBLE MATERIAL COVERED WITH A SMOOTH SURFACE?
MA207+	
MA208 R2/117/P5.7.3.4.5	ARE ARM RESTS PROVIDED EITHER AS AN INTEGRAL PART OF THE CHAIR OR PART OF THE CONSOLE?
MA208+	
MA209 R2/117/P5.7.3.5	HAS KNEE AND FOOT ROOM BEEN PROVIDED BENEATH WORK SURFACES?
MA209+	
MA210 R2/117/P5.7.3.6	ARE VISUAL DISPLAYS MOUNTED ON VERTICAL PANELS PLACED BETWEEN 6 AND 48 INCHES ABOVE THE SITTING SURFACE?
MA210+	
MA211 R2/117/P5.7.3.7	ARE INDICATORS THAT MUST BE READ FREQUENTLY PLACED BETWEEN 14 AND 37 INCHES ABOVE THE SITTING SURFACE?
MA211+	
MA212 R2/117/P5.7.3.8	ARE WARNING DISPLAYS MOUNTED AT LEAST 22 INCHES ABOVE THE SITTING SURFACE?
MA212+	
MA213 R2/117/P5.7.3.9	ARE CONTROLS MOUNTED ON A VERTICAL SURFACE LOCATED BETWEEN 8 AND 35 INCHES ABOVE THE SITTING SURFACE?
MA213+	
MA214 R2/117/P5.7.3.10	ARE CONTROLS REQUIRING FREQUENT OPERATION MOUNTED BETWEEN 8 AND 30 INCHES ABOVE THE SITTING SURFACE?
MA214+	

ENVIRONMENT

MA301 R2/137/P5.8.1.1	HAVE ADEQUATE PROVISIONS FOR HEATING IN WORK AREAS BEEN MADE?
MA301*	
MA302 R2/137/P5.8.1.2	HAVE ADEQUATE PROVISIONS FOR VENTILATION IN WORK AREAS BEEN MADE?
MA302*	
MA303 R2/137/P5.8.1.3	HAVE ADEQUATE PROVISIONS FOR AIR CONDITIONING IN WORK AREAS BEEN MADE?
MA303*	
MA304 R2/137/P5.8.1.4	HAVE ADEQUATE HUMIDITY CONTROLS BEEN PROVIDED?
MA305 R2/137/P5.8.1.5	HAS TEMPERATURE UNIFORMITY BEEN PROVIDED IN WORK AREAS?
MA305*	
MA306 R2/137/P5.8.1.6	HAS ADEQUATE THERMAL CONTROL BEEN PROVIDED FOR ALL SPECIAL PROTECTIVE CLOTHING AND PERSONNEL EQUIPMENT?
MA306*	
MA307 R2/140/P5.8.2	IS ADEQUATE ILLUMINATION PROVIDED FOR PERFORMING MAINTENANCE TASKS?
MA307*	
MA308 R2/140/P5.8.2	HAS A CAPABILITY FOR DIMMING BEEN PROVIDED?
MA309 R2/140/P5.8.2	HAS SUPPLEMENTARY LIGHTING BEEN PROVIDED WHERE GENERAL LIGHTING IS INADEQUATE FOR TASK PERFORMANCE?
MA309*	
MA310 R2/140/P5.8.2	HAVE GLARE AND SPECULAR REFLECTION BEEN MINIMIZED?
MA311 R2/140/P5.8.2	HAVE PORTABLE LIGHTS BEEN PROVIDED AS NECESSARY?
MA312 R2/140/P5.8.3.2	ARE NOISE LEVELS THAT PERSONNEL ARE SUBJECTED TO ALWAYS BELOW 150 DB REGARDLESS OF THE NOISE ATTENUATION PROVIDED BY PROTECTIVE DEVICES?
MA313 R2/140/P5.8.3.9	ARE WORK SPACE NOISES AT A LEVEL THAT PERMITS ALL DIRECT AND TELEPHONE COMMUNICATIONS AND WITHIN AN ACCEPTABLE ACOUSTICAL WORK ENVIRONMENT?
MA313*	
MA314 L6/7/P A.3	HAS THE AMOUNT OF TRANSMITTED NOISE BEEN HELD TO ACCEPTABLE LEVELS?
MA314*	
MA315 L6/7/P A.2	HAS THE AMOUNT OF NOISE PRODUCED BY EQUIPMENT BEEN HELD TO ACCEPTABLE LEVELS?
MA315*	
MA316 L6/7/P A.4	ARE PROTECTIVE DEVICES PROVIDED FOR PERSONNEL THAT WORK IN HIGH INTENSITY NOISE LEVELS?
MA316*	
MA317 R2/146/P5.8.3.4.1	HAVE NOISE LEVELS BEEN CONTROLLED TO THE MAXIMUM EXTENT POSSIBLE?
MA317*	
MA318 R2/146/P5.8.3.4.2	HAVE ADEQUATE ACOUSTIC MATERIALS BEEN UTILIZED IN THE DESIGN AND LAYOUT OF WORK AREAS?
MA318*	

MAINTENANCE DESIGN CRITERIA

VA001	C1/3-2/T3-1.1	HAS THE NEED FOR MAINTENANCE BEEN MINIMIZED?
VA002	C1/3-2/T3-1.2	HAS THE AMOUNT, FREQUENCY AND COMPLEXITY OF REQUIRED MAINTENANCE TASKS BEEN MINIMIZED?
VA002+		
VA003	C1/3-2/T3-1.4	HAS THE REQUIRED SKILL LEVELS FOR MAINTENANCE AND TRAINING REQUIREMENTS BEEN MINIMIZED?
VA003+		
VA004	C1/3-2/T3-1.5	HAS THE MAXIMUM FREQUENCY AND EXTENT OF PREVENTIVE MAINTENANCE TO BE PERFORMED BEEN ESTABLISHED?
VA004+		
VA005	C1/3-2/T3-1.8	HAVE COMPONENTS BEEN PROVIDED THAT CAN BE ADJUSTED FOR WEAR AND IS THE ADJUSTMENT READILY ACCESSIBLE?
VA005+		
VA006	C1/3-2/T3-1.9	IS THE UNIT AND ITS COMPONENTS DESIGNED FOR MINIMUM DOWNTIME?
VA006+		
VA007	C1/3-2/T3-1.10	HAS SIMPLE, ACCURATE AND SATISFACTORY TECHNICAL DATA BEEN DELIVERED WITH THE EQUIPMENT?
VA007+		
VA008	C1/3-2/T3-1.13	HAS OPTIMUM ACCESSIBILITY BEEN PROVIDED TO ALL UNITS REQUIRING FREQUENT MAINTENANCE, INSPECTION, REMOVAL OR REPLACEMENT?
VA008+		
VA008+		
VA009	C1/3-2/T3-1.14	HAVE METHODS BEEN PROVIDED FOR RAPID AND POSITIVE IDENTIFICATION OF EQUIPMENT MALFUNCTION OR MARGINAL PERFORMANCE?
VA009+		
VA009+		
VA010	C1/3-2/T3-1.15	ARE HUMAN FACTORS ASPECTS SATISFACTORY FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT?
VA010+		
VA011	C1/3-2/T3-1.16	HAS ADEQUATE CAPABILITY TO VERIFY PERFORMANCE, LOCATE MALFUNCTIONS AND PERFORM CALIBRATIONS BEEN PROVIDED?
VA011+		
VA011+		
VA012	C1/3-2/T3-1.17	HAVE MEANS BEEN PROVIDED FOR CLEAR AND RAPID IDENTIFICATION OF ALL PARTS AND COMPONENTS?
VA012+		
VA013	C1/3-2/T3-1.18	HAVE THE TYPES AND QUANTITIES OF TOOLS FOR MAINTENANCE BEEN MINIMIZED?
VA013+		
VA014	UJUL1/R2/23	HAS VISUAL ACUITY BEEN CONSIDERED IN DEVELOPING DISPLAYS, SCALES, LABELING, LIGHTING, ETC?
VA014+		
VA014	C1/3-2/T3-1.19	HAS THE USE OF EXISTING MAINTENANCE FACILITIES AND EQUIPMENT BEEN MAXIMIZED?
VA014+		
VA015	C1/3-2/T3-1.20	HAVE THE TYPES AND NUMBERS OF REPAIR PARTS FOR MAINTENANCE BEEN MINIMIZED?
VA015+		
VA016	C1/3-2/T3-1.21	HAVE MILITARY STANDARD PARTS, MATERIALS, ETC BEEN UTILIZED TO THE FULLEST EXTENT POSSIBLE?
VA016+		
VA017	C1/3-3/T3-1.22	HAS THE USE OF CRITICAL MATERIALS AND COSTLY PROCESSES BEEN MINIMIZED?
VA017+		
VA018	C1/3-3/T3-1.23	HAS INTERCHANGEABILITY BEEN MAXIMIZED?
VA018+		
VA019	C1/3-3/T3-1.24	HAVE SAFETY FEATURES FOR EQUIPMENT AND PERSONNEL BEEN MAXIMIZED?
VA019+		
VA020	C1/3-3/T3-1.25	HAVE ADEQUATE TOWING, HOISTING, LIFTING AND JACKING FACILITIES BEEN PROVIDED?
VA020+		
VA021	C1/3-3/T3-1.26	HAS MAXIMUM STORAGE LIFE WITH MINIMUM STORAGE REHABILITATION FOR HARDWARE BEEN PROVIDED?
VA021+		
VA022	C1/3-3/T3-1.27	HAS THE AMOUNT OF SUPPLY SUPPORT BEEN MINIMIZED?
VA022+		
VA023	C1/3-3/T3-1.28	ARE UNITS QUICKLY REPLACEABLE WITH MINIMUM TIME AND PERSONNEL?
VA023+		
VA024	C1/3-3/T3-1.29	HAVE THE HAZARDS TO EQUIPMENT AND PERSONNEL BEEN MINIMIZED?
VA024+		
VA025	C1/3-3/T3-1.30	HAS NECESSARY ENVIRONMENTAL COMPATIBILITY BEEN DESIGNED INTO THE EQUIPMENT?
VA025+		
VA026	C1/3-3/T3-1.31	HAVE UNDESIRABLE OPERATING AND MAINTENANCE CHARACTERISTICS (NOISE, VIBRATION, RADIATION, ETC.) BEEN MINIMIZED?
VA026+		
VA026+		
VA027	C1/3-3/T3-1.32	HAVE BEARINGS AND SEALS BEEN SELECTED THAT MINIMIZE SERVICING AND REPLACEMENT TASKS?
VA027+		
VA028	C1/3-3/T3-1.33	HAVE GEARS OF ADEQUATE SIZE AND TYPE THAT SATISFY ALL OVERLOAD REQUIREMENTS BEEN PROVIDED?
VA028+		
VA029	C1/3-3/T3-1.35	HAVE MECHANICAL, ELECTRICAL, ELECTRONIC, ETC COMPONENTS BEEN SUFFICIENTLY DERATED TO WITHSTAND UNEXPECTED OVERLOADS?
VA029+		
VA029+		
VA030	C1/3-3/T3-1.37	ARE COMPONENTS REQUIRING FREQUENT MAINTENANCE

NA030*	LOCATED TO PRECLUDE REMOVAL OF OTHER COMPONENTS?
NA031 C1/3-3/T3-1.38	HAS LINE-OF-SIGHT BEEN PROVIDED TO COMPONENTS
NA031*	WHEREVER POSSIBLE?
NA032 C1/3-3/T3-1.39	ARE ADJUSTMENT CONTROLS READILY ACCESSIBLE?
NA033 C1/3-3/T3-1.40	ARE LOCKING DEVICES PROVIDED ON ALL ADJUSTMENT
NA033*	CONTROLS?
NA034 C1/3-3/T3-1.41	HAVE SUFFICIENT AND ADEQUATE TEST POINTS AND TEST
NA034*	FEATURES BEEN PROVIDED?
NA035 C1/3-3/T3-1.42	IS ALL TEST EQUIPMENT AND CALIBRATION EQUIPMENT
NA035*	REQUIRED FOR THE HARDWARE AVAILABLE?
NA036 C1/3-4/T3-1.43	HAS GO-NO-GO, AUTOMATIC AND BUILT-IN FAULT
NA036*	ISOLATION EQUIPMENT BEEN PROVIDED WHEREVER
NA036*	FEASIBLE, PRACTICAL OR COST EFFECTIVE?
NA037 C1/3-4/T3-1.44	HAS ADEQUATE STORAGE BEEN PROVIDED IN THE EQUIPMENT
NA037*	FOR EXPENDABLES (FUSES, THROW-AWAY UNITS, ETC.)?
NA038 C1/3-4/T3-1.45	ARE BATTERY COMPARTMENTS LOCATED FOR RAPID
NA038*	EGRESS AND SERVICING?
NA039 C1/3-4/T3-1.45	ARE BATTERY COMPARTMENTS VENTED, AS REQUIRED?
NA040 C1/3-4/T3-1.46	IS REPAIRABLE EQUIPMENT IN ACCORD WITH THE
NA040*	MAINTENANCE CONCEPT?
NA041 C1/3-4/T3-1.47	HAVE ADEQUATE GUARDS BEEN INSTALLED OVER DANGEROUS
NA041*	MOVING PARTS?
NA042 C1/3-4/T3-1.48	HAS ADEQUATE PROTECTION BEEN PROVIDED FROM
NA042*	DANGEROUS ELECTRICAL VOLTAGES?
NA043 C1/3-4/T3-1.49	HAS ADEQUATE PROTECTION BEEN PROVIDED FROM
NA043*	TOXIC FUMES?
NA044 C1/3-4/T3-1.50	HAVE EXPLOSION PROOF DESIGNS BEEN UTILIZED
NA044*	WHEREVER REQUIRED?
NA045 C1/3-4/T3-1.51	HAS ADEQUATE FIRE EXTINGUISHING EQUIPMENT BEEN
NA045*	PROVIDED?
NA046 C1/3-4/T3-1.52	HAS ADEQUATE PROTECTION AGAINST NUCLEAR HAZARDS
NA046*	BEEN PROVIDED?
NA047 C1/3-4/T3-1.53	ARE WARNING DEVICES PROVIDED AS NECESSARY?
NA048 C1/3-4/T3-1.54	HAVE METHODS FOR RAPID REFUELING, RELUBRICATION,
NA048*	AND THE FILLING OF RESERVOIRS AND CONTAINERS
NA048*	BEEN PROVIDED?
NA049 C1/3-4/T3-1.55	HAVE ADEQUATE INSPECTION DOORS, PORTS, COVERS, ETC.
NA049*	BEEN PROVIDED?
NA050 C1/3-4/T3-1.56	HAVE QUICK DISCONNECT DEVICES FOR RAPID REMOVAL/
NA050*	REPLACEMENT OF COMPONENTS BEEN PROVIDED?
NA051 C1/3-4/T3-1.57	HAVE A MINIMUM NUMBER OF FASTENERS BEEN USED
NA051*	WHEREVER FEASIBLE?
NA052 C1/3-4/T3-1.58	ARE ALL PLUGS AND LUBRICATION FITTINGS READILY
NA052*	ACCESSIBLE?
NA053 C1/3-4/T3-1.59	ARE DRAINS FOR TANKS RESERVOIRS AND SUMPS PROPERLY
NA053*	LOCATED AND READILY ACCESSIBLE?
NA054 C1/3-4/T3-1.61	CAN MAINTENANCE BE ACCOMPLISHED ON THE EQUIPMENT
NA054*	WHILE TECHNICIANS ARE WEARING PROTECTIVE CLOTHING?
NA055 C1/3-4/T3-1.62	IS THE EQUIPMENT DESIGNED FOR MAINTENANCE UNDER
NA055*	ADVERSE WEATHER CONDITIONS?
NA056 C1/3-4/T3-1.63	ARE SPECIAL TOOLS AND ADAPTER KITS STORED IN OR
NA056*	NEAR THE EQUIPMENT ON WHICH THEY WILL BE USED?
NA057 C1/3-5/T3-1.64	ARE ALL LABELS CLEARLY LEGIBLE AND PROPERLY LOCATED
NA057*	FOR EASE OF PERFORMING INSPECTIONS/MAINTENANCE?
NA058 C1/3-5/T3-1.65	ARE OPERATIONAL AND MAINTENANCE MANUALS STORED IN
NA058*	OR NEAR THE EQUIPMENT THEY DESCRIBE?
NA059 C1/3-5/T3-1.66	HAS THE EQUIPMENT BEEN ADEQUATELY PROTECTED FOR
NA059*	HANDLING, STORAGE, TRANSPORTATION, ETC?
NA060 C1/3-5/T3-1.67	IS THE EQUIPMENT DESIGNED TO BE SELF-PACKAGING
NA060*	WHENEVER PRACTICAL?
NA061 C1/3-5/T3-1.68	ARE INSTRUMENT PANELS HINGED OR READILY REMOVEABLE
NA061*	FOR RAPID SERVICING, TESTING AND CALIBRATION?
NA062 C1/3-5/T3-1.69	IS ALL ELECTRONIC GEAR READILY REMOVEABLE FOR
NA062*	RAPID SERVICING, TESTING AND CALIBRATION?
NA063 C1/3-5/T3-1.70	HAS A COMPONENT MODULARIZATION DESIGN BEEN USED?
NA064 C1/3-5/T3-1.72	HAS MINIATURIZATION IN DESIGN BEEN USED, WHEREVER

NA064*	APPROPRIATE?
NA065 C1/3-5/T3-1.73	HAS THE UNIT BEEN DESIGNED FOR MINIMUM WEIGHT
NA065*	COMMENSURATE WITH STRUCTURAL REQUIREMENTS?
NA066 C1/3-5/T3-1.78	HAVE MINIMUM AND MAXIMUM VALUES FOR MTBF, MTR, AND
NA066*	DOWNTIME BEEN ESTABLISHED FOR THE EQUIPMENT?
NA067 A3/DN2G3/P1	HAVE LARGE OR HEAVY EQUIPMENTS BEEN DESIGNED WITH
NA067*	REMOVEABLE/REPLACEABLE UNITS TO FACILITATE
NA067*	PERFORMING MAINTENANCE ACTIONS?
NA068 L4/5-48	HAS THE POSSIBILITY OF DAMAGE TO UNITS DURING
NA068*	HANDLING AND INSTALLATION BEEN MINIMIZED?
NA069 L4/5-50	IS THE DESIGN SUCH THAT REQUIREMENTS FOR SPECIAL
NA069*	MAINTENANCE SUPPORT (GROUND-POWER CARTS, COOLING,
NA069*	ETC.) HAVE BEEN MINIMIZED?
NA070 I1/167/1	HAS A COMPREHENSIVE PREVENTIVE MAINTENANCE PROGRAM
NA070*	BEEN ESTABLISHED?
NA071 I1/167/2-3	ARE CHECKLISTS, TOOLS, MATERIALS, ETC AVAILABLE
NA071*	FOR PERFORMING PREVENTIVE MAINTENANCE?
NA072 I1/167/10	HAVE CORROSION PREVENTION/CONTROL METHODS BEEN
NA072*	SPECIFIED?
NA073 I1/167/12	HAVE CLEANING PERIODS/METHODS BEEN SPECIFIED?
NA074 I1/167/11	HAVE CORROSION RESISTANT MATERIALS/FINISHES/SEALERS
NA074*	BEEN SPECIFIED?
NA075 I1/167/13	ARE A MINIMUM NUMBER OF STANDARD NONINTERCHANGEABLE
NA075*	FLUIDS USED?
NA076 I1/167/14	ARE FLUID LINES/DRAINS/PLUGS LOCATED TO MINIMIZE
NA076*	SPIILLS/LEAKS?
NA077 I1/167/15	ARE DRAINS AT LOW POINTS AND BLEED VALVES AT HIGH
NA077*	POINTS?
NA078 I1/167/16	CAN FLUID PRESSURE BE CHECKED WITHOUT DISCONNECTING
NA078*	LINES?
NA079 I1/167/17	ARE PRESSURE RELIEF AND CHECK VALVES PROVIDED
NA079*	WHEREVER THEY ARE NEEDED?
NA080 I1/167/19	ARE LUHRICATION SCHEDULES PROVIDED?
NA081 I1/167/20	ARE STANDARD LUBRICANTS APPLIED WITH STANDARD
NA081*	TOOLS AND DEVICES?
NA082 I1/167/22	IS ONE STANDARD COLOR CODED FITTING USED FOR EACH
NA082*	LUBRICANT?
NA083 I1/159/2	DOES THE FACILITY LAYOUT MINIMIZE PLACE-TO-PLACE
NA083*	MOVEMENT OF MEN AND EQUIPMENT?
NA084 I1/159/3	DOES THE LAYOUT PROVIDE ADEQUATE SHOP, BENCH, AND
NA084*	STORAGE SPACE?
NA085 I1/159/4	DOES THE LAYOUT ALLOW VISUAL AND VOICE-CONTACT
NA085*	BETWEEN TEAM MEMBERS?
NA086 I1/159/5	DOES THE LAYOUT ALLOW ACCESS TO MOST SIDES OF ALL
NA086*	ITEMS OF EQUIPMENT?
NA087 I1/167/7	IS THE STOCK ROOM/TOOL CRIB LOCATED CONVENIENT TO
NA087*	ALL WORK AREAS?
NA088 I1/159/8	IS SPECIAL STORAGE PROVIDED FOR HAZARDOUS OR
NA088*	CONTAMINABLE ITEMS?
NA089 I1/159/10	ARE PASSAGE WAYS ADEQUATE FOR ALL CARTS, STANDS,
NA089*	ETC. AND THEIR LOADS?
NA090 I1/159/11	WILL PASSAGES AND DOORS ALLOW ENTRY AND REMOVAL
NA090*	OF ALL LARGE ITEMS?
NA091 I1/159/15	ARE WORK SPACES FREE OF ALL HAZARDS?
NA092 I1/159/16	IS ADEQUATE SPACE PROVIDED IN ALL WORK AREAS?
NA093 I1/159/19	IS ILLUMINATION IN ALL WORK AREAS ADEQUATE?
NA094 I1/159/21	ARE SAFETY AND AUXILIARY LIGHTS PROVIDED?
NA095 I1/159/24	IS A CONTROLLED ENVIRONMENT PROVIDED?
NA096 I1/163/1	DO MANUALS IDENTIFY ALL UNITS BY LOCATION AND
NA096*	FUNCTIONS?
NA097 I1/163/2	DO MANUALS PROVIDE SCHEMATICS AND WIRING DIAGRAMS
NA097*	AT LEAST TO THE LRU LEVEL?
NA098 I1/163/3	DO MANUALS DESCRIBE ALL UNCOMMON PARTS, TOOLS,
NA098*	CODES, ETC.?
NA099 I1/163/4	DO MANUALS TELL HOW TO DETECT, LOCALIZE, ISOLATE,
NA099*	CORRECT AND CHECKOUT THE UNIT?

NA100	11/163/6	DO MANUALS DESCRIBE WHAT MAY GO WRONG, HOW TO PREVENT IT, AND HOW TO RECOVER IF IT HAPPENS?
NA100*		
NA101	11/163/7	DO MANUALS LIST TOOLS AND MATERIALS REQUIRED FOR EACH TASK?
NA101*		
NA102	11/163/9	DO MANUALS CLEARLY DESCRIBE ACCESS, BREAKDOWN AND ASSEMBLY METHODS?
NA102*		
NA103	11/163/11	ARE ALL ADJUSTMENT, ALIGNMENT, CALIBRATION, AND CHECKOUT PROCEDURES PROVIDED?
NA103*		
NA104	11/163/12	ARE SPECIAL INSTRUCTIONS PROVIDED FOR UNUSUAL CONDITIONS?
NA104*		
NA105	11/163/14	IS INFORMATION LOGICALLY ORGANIZED, QUICKLY FOUND, AND READILY USED?
NA105*		
NA106	11/163/20	DO DIAGRAMS DESCRIBE INTER CONNECTIONS AND RELATIONSHIPS BETWEEN ITEMS?
NA106*		
NA107	11/163/21	DO DIAGRAMS IDENTIFY INPUT/OUTPUT CONNECTIONS BETWEEN SUBASSEMBLIES?
NA107*		
NA108	11/163/22	DO DIAGRAMS IDENTIFY ALL TERMINALS, JACKS AND TEST POINTS?
NA108*		
NA109	11/163/23	DO DIAGRAMS SHOW VOLTAGE, CURRENT AND WAVEFORM AT EACH TEST POINT?
NA109*		

MAINTENANCE TASKS

0A001 L4/5-44	ARE MAINTENANCE AND TEST EQUIPMENT COMPATABLE WITH THE SYSTEM?
0A001+	
0A002 L4/5-44	ARE ALL SPECIAL HANDLING INSTRUCTIONS CLEAR, CONCISE, AND ADEQUATE?
0A002+	
0A003 L4/5-44	CAN ALL UNITS BE READILY INSTALLED AND CONNECTED TO THE SYSTEM?
0A003+	
0A004 L4/5-44	HAVE READJUSTMENTS AT INSTALLATION BEEN MINIMIZED FOR UNITS THAT ARE ADJUSTED AT THE FACTORY OR DEPOT?
0A004+	
0A005 L4/5-45	ARE MINIMUM ADJUSTMENTS NECESSARY AFTER A UNIT HAS BEEN INSTALLED?
0A005+	
0A006 L4/5-45	DO ADJUSTMENTS COMPENSATE FOR ALL TOLERANCE BUILDUPS?
0A006+	
0A007 L4/5-45	HAVE PERIODIC ALIGNMENTS/ADJUSTMENTS BEEN MINIMIZED?
0A007+	
0A008 L4/5-45	HAVE THE NUMBER OF FIELD ADJUSTMENTS BEEN MINIMIZED?
0A008+	
0A009 L4/5-45	IS THE UNIT DESIGNED SUCH THAT IT CAN NOT BE DAMAGED BY CARELESSLY MADE ADJUSTMENTS?
0A009+	
0A010 L4/5-45	ARE ALL SPECIAL TECHNIQUES REQUIRED FOR REPAIR, REPLACEMENT OR ALIGNMENT OF A UNIT ADEQUATELY IDENTIFIED AND DOCUMENTED?
0A010+	
0A011 L4/5-45	ARE UNITS AND ASSEMBLIES MOUNTED SO THAT REMOVAL OF ONE DOES NOT REQUIRE THE REMOVAL OF OTHERS?
0A011+	
0A012 L4/5-46	ARE ALL PANEL LIGHTS EASILY REPLACED?
0A012+	
0A013 L4/5-46	WILL CIRCUITS TOLERATE THE USE OF JUMPER CABLES DURING MAINTENANCE?
0A013+	
0A014 L1/81/P20.C	ARE ALL ADJUSTMENTS INDEPENDENT SUCH THAT THERE ARE NO INTERACTIONS?
0A014+	
0A015 L1/81/P20.D	DO ALL CLOCKWISE ADJUSTMENTS PRODUCE AN INCREASING VALUE AND VICE-VERSA?
0A015+	
0A016 L1/81/P20.E	HAS INDEXING BEEN PROVIDED ON ALL ADJUSTMENTS?
0A016+	
0A017 L1/81/P20.F	ARE ADJUSTMENT KNOBS PROVIDED WHEREVER POSSIBLE?
0A017+	
0A018 L1/97/P 8.3	ARE FIELD ADJUSTMENTS ACCESSIBLE WHEN THE UNIT IS PROPERLY INSTALLED?
0A018+	
0A019 L1/97/P 8.4	HAS SEQUENTIAL ASSEMBLY OF A UNIT BEEN AVOIDED?
0A019+	
0A020 A2/DN2A1/P1.11	HAVE SELF-TESTING AND SELF ADJUSTING FEATURES BEEN PROVIDED WHERE APPLICABLE?
0A020+	
0A021 A2/DN2G2/P1.25	HAS REPAIR WELDING BEEN LIMITED TO THOSE AREAS AND LOCATIONS IDENTIFIED IN THE DESIGN DOCUMENTS?
0A021+	
0A022 C1/16-9/T16-3.1	ARE LUBRICATION FITTINGS STANDARDIZED SO THAT NO SPECIAL TOOLS OR EXTENSIONS ARE REQUIRED?
0A022+	
0A023 C1/16-9/T16-3.3	DO LUBRICATION INSTRUCTIONS IDENTIFY THE TYPE AND FREQUENCY OF LUBRICANTS REQUIRED?
0A023+	
0A024 C1/16-9/T16-3.4	ARE AREAS FOR THE TRANSFER AND HANDLING OF COMBUSTIBLES ISOLATED FROM OTHER WORK AREAS?
0A024+	
0A025 C1/16-9/T16-3.5	ARE FLUID REPLENISHING POINTS LOCATED TO PRECLUDE SPILLAGE DURING SERVICING?
0A025+	
0A026 C1/16-9/T16-3.6	ARE ALL FILLER OPENINGS READILY ACCESSIBLE?
0A026+	
0A027 C1/16-9/T16-3.9	ARE ALL BLEED VALVES LOCATED IN AN EASILY OPERABLE AND ACCESSIBLE POSITION?
0A027+	
0A028 C1/16-9/T16-3.10	ARE ALL DRAINS LOCATED IN AN EASILY OPERABLE AND ACCESSIBLE POSITION?
0A028+	
0A029 C1/16-9/T16-3.11	ARE DRAIN FITTINGS STANDARDIZED THROUGH OUT THE SYSTEM?
0A029+	
0A030 C1/16-9/T16-3.12	ARE VALVES AND PETCOCKS USED IN PREFERENCE TO DRAIN PLUGS?
0A030+	
0A031 C1/16-9/T16-3.13	ARE VALVES AND PETCOCKS CLEARLY LABELED TO INDICATE OPEN AND CLOSED POSITIONS?
0A031+	
0A032 C1/16-9/T16-3.14	DO DRAIN COCKS ALWAYS CLOSE WITH CLOCKWISE MOTION?
0A032+	
0A033 C1/16-9/T16-3.16	ARE DRAIN POINTS LOCATED SO THAT FLUIDS WILL NOT DRAIN ON EQUIPMENT OR PERSONNEL?
0A033+	
0A034 C1/16-9/T16-3.17	ARE DRAINS LOCATED AT THE LOWEST POINT TO PROVIDE



QA034+	COMPLETE DRAINAGE?
QA035 C1/16-9/T16-3.18	CAN FLUIDS BE DRAINED INTO CONTAINERS WITHOUT THE USE OF ADAPTERS OR PIPING?
QA035+	
QA036 C1/16-9/T16-3.20	ARE INSTRUCTION PLATES PROVIDED ON ALL UNITS THAT MAY REQUIRE DRAINING?
QA036+	
QA037 C1/16-9/T16-3.23	ARE THE SAME FUELS AND LUBRICANTS USED IN AUXILIARY EQUIPMENT AS IN THE PRIME HARDWARE, WHERE PRACTICAL?
QA037+	
QA038 C1/16-9/T16-3.24	ARE DIFFERENT FITTINGS USED FOR POINTS REQUIRING DIFFERENT OR INCOMPATIBLE LUBRICANTS?
QA038+	
QA039 C1/16-9/T16-3.25	ARE PRESSURE FITTINGS PROVIDED ON ALL BEARINGS REQUIRING LUBRICATION?
QA039+	
QA040 C1/16-9/T16-3.29A	ARE SNAP ACTION OIL FILLER CAPS PROVIDED WHEREVER PRACTICAL?
QA040+	
QA041 C1/16-9/T16-3.29B	ARE OIL FILLER TUBES ADEQUATE IN SIZE AND SHAPE?
QA042 C1/16-9/T16-3.29D	ARE OIL FILLER CAPS LOCATED EXTERNAL TO THE UNIT?
QA043 A1/8-15/F8-9.3	ARE LIQUID LEVEL INDICATORS PROVIDED WHEREVER APPROPRIATE?
QA043+	
QA044 A1/8-15/F8-9.2	HAS THE REQUIREMENT FOR SPECIAL TOOLS FOR FILLING AND DRAINING BEEN MINIMIZED?
QA044+	
QA045 A1/8-15/F8-9.1	ARE SERVICING POINTS FOR FILLING AND DRAINING READILY ACCESSIBLE BUT PROTECTED?
QA045+	
QA046 A1/8-15/F8-9.6	ARE FLUID LEVEL PLUGS PROVIDED WHERE IT IS ESSENTIAL TO AVOID OVERFILLING?
QA046+	
QA047 A1/8-16/F8-9.13	ARE OIL SEALS EASILY REPLACED?
QA048 A1/8-16/F8-9.13	ARE GASKETS EASILY REPLACED?
QA049 A1/8-16/F8-9.4	ARE GASKETS FOR DIFFERENT APPLICATIONS READILY IDENTIFIABLE?
QA049+	
QA050 A1/8-16/F8-9.8	ARE SEALS EASILY REPLACED?
QA051 L4/5-49	HAVE LUBRICATION POINTS BEEN MINIMIZED?

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