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DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

1. TITLE – TITRE NWS C&E Maint	2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION
TECHNICAL ENGINEERING SUSTAINMENT INSPECTION (TESI) PLAN	**DID 5.7.3.1**

3. DESCRIPTION / PURPOSE – DESCRIPTION / OBJET

The purpose of the Technical Engineering Sustainment Inspection (TESI) Plan is to provide a detailed description of the inspections to be conducted on all Radar, Communication and Ancillary equipment in the North Warning System.

4. APPROVAL DATE DATE D'APPROBATION	5. OFFICE OF PRIMARY INTEREST (OPI) BUREAU DE PREMIERE RESPONSABILITÉ (BPR)	6. GIDEP APPLICABLE D'ÉCHANGE DE DONNÉES PERTINENT
TBD	NWSO Technical Authority (TA)	N/A

7. APPLICATION / INTERRELATIONSHIP – APPLICATION / INTERDÉPENDANCE

CDRL 5.7.3.1 and SOW paragraph 5.7.3.1 refer.
This DID contains the format and content preparation instructions for the data generated under the Work tasks described in the NWS O&M SOW.

8. ORIGINATOR - AUTEUR	9. APPLICABLE FORMS - FORMULES PERTINENTES
NWSO TA	NIL

10. PREPARATION INSTRUCTIONS – INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES

10.1 Source Document
NWS SOW Section 5, paragraph 5.7.3.1

10.2 Content and Format

10.2.1 The Technical Engineering Sustainment Inspection (TESI) Plan must be prepared and delivered in Contractor format.

10.2.2 The Technical Services Management Plan must include inspections of:

a. Radar, communications and ancillary equipment;
b. Condition of equipment;
c. Tools and test equipment;
d. Work areas;
e. Technical documentation;
f. Parts (storage and packaging);
g. Safety (signage and personal protection equipment); and
h. Grounding and bonding of Radar, Communication and Ancillary equipment.
    1) The grounding and bonding inspection must include the following requirements:
        i. REFERENCES:
            1. AFI 21-116, 10 Dec 00;
            2. AFI 32-1063,31 Mar 94;
            3. AFI 32-1065, 1 Oct 98;
            4. MIL-STD 188-124B, 1 Feb 92;
            5. MIL-HDBK 419A Vol II, 29 Dec 87; and

6. TO 31-10-24, Chg 4, 30 Nov 01.

ii. **A. RECORDS, TEST EQUIPMENT, TOs, ETC**:

A.1. Are facility grounding system historical records complete and current? (AFI 21-116, para 6.10; AFI 32-1065, para 4; MILHDBK 419A Vol II Para 2.3.1, 2.3.2);

A.2. Is all required test equipment available and properly maintained in the Work center and is the calibration current? (AFI 32-1065, Para 8; TO 31-10-24, Attachment B-1e); and

A.3. Have all required inspections been scheduled? (AFI 32-1063, Para 7.5; AFI 32-1065, Table 1-1; MIL-STD 188-124B, para 5.1.1.1.7; MIL-HDBK-419A Vol II, Para 2.3.1)

iii. **B. PHYSICAL CONDITION AND MODIFICATIONS**:

B.1. Are all exposed interior fastenings, ground clamps, welded joints, air terminals and supporting members free of mechanical failure? (AFI32-1065, Para 9);

B.2. Are all exposed conductors free of excessive wear? (AFI 32-1065, Para 10);

B.3. Are all conductors and connectors free of corrosion? (MIL-STD188-124B, Para 5.2.3, 5.2.9);

B.4. Are all exposed conductors free of sharp kinks or bends? (AFI32-1065, para A4.1.5; MIL-STD 188-124B, para 5.1.1.3.3, 5.1.1.3.8.5; TO 31-10-24, Para 7-6a);

B.5. Are all lightning protection ground connectors of the bolted, crimped, brazed, or exothermically welded type (not soldered)? (AFI32-1065, para 10; MIL-STD 188-124B, para 5.1.1.3.4; MIL-HDBK 419A Vol II, Para 1.3.3.9, 1.7.1; TO 31-10-24, Para 7-4c);

B.6. If ground wires are exposed to mechanical damage, are they protected by a suitable protective conduit or device? (AFI 32-1065, Para A4.1.8; MIL-HDBK 419A Vol II, Para 1.3.3.10; MIL-STD 188-124B, Para 5.2.3, 5.1.1.3.8.4);

B.7. Is conduit, armoured cable, and metal raceway properly connected to the common ground? (MIL-HDBK 419A Vol II, Para 1.4.5; MILSTD 188-124B, Para 5.1.1.2.4.2, 5.1.1.3.10.1; TO 31-10-24, Para 8-3);

B.8. Are all towers, poles, and other antenna structures grounded properly? (MIL-STD 188-124B, Para 5.1.1.3.2., 5.1.1.3.9);

B.9. Are lightning arrestors installed on all antenna structures? (AFI32-1065, Table 1-1, Para 9; MIL-STD 188-124B, Para 5.1.1.3.8);

B.10. Are telephone and overhead connectors entering or leaving structures provided with lightning arrestors? (AFI 32-1065, para 15; MIL-STD 188-124B, Para 5.3.2.6.);

B.11. Are all lightning arrestors free of mechanical failure? (AFI 32-1065, Para 9); and

B.12. Is NO-OX grease applied to welded, brazed and exothermic connections, as well as electrode connections, equipment cabinet or rack bonds, bus bar attachments, and associated hardware? (31-10-24, Para 4-10f).

iv. **C. CRITICAL PERFORMANCE STANDARDS – MANDATORY EVALUATION ITEMS**

C.1. Are maintenance inspections being performed on fixed facilities to include Base Civil Engineering providing copies of the completed forms to the facility user? (MIL-HDBK-419A Vol II, Para 2.3; AFI 32-1065, Para 5. and Table 1.9);

C.2. Has new equipment grounding, bonding and shielding conformance been evaluated prior to installation and acceptance? (MIL-HDBK-419 Vol II, Para 3.7);

C.3. Has Base Civil Engineering performed the MIL-STD-188-124A and NEC compliance evaluation? (MIL-HDBK-419A Vol II, Para 1.4.9);

C.4. Are there at least two lightning protection down conductors on the building or structure, and are they as widely separated as practical? (TO 31-10-24, Para 7-6b; AFI 32-1065, Para A4.1.3);

C.5. Is the semi-permanent grounding bond resistance, between equipment chassis and racks, 12 milliohms or less? (TO 31-10-24, Para 4-13C);

C.6. Is the voltage between the grounded portion of the equipment to the earth ground system terminal 1 VAC or DC or less? (TO 31-10-24, appendix B-5);

C.7. Is the site ground resistance for the facility 10 ohms or less? (AFI32-1065, Para A6.1; MIL-STD 188-124B, Para 5.1.1.1.3.1, 5.1.1.1.7; TO 31-10-24, Para 6-1a, appendix B-1);

C.8. Are all waveguides to the antennas properly grounded? (MILSTD 188-124B, Para 5.1.1.3.8.5, MIL-HDBK 419A Vol II, Para 1.3.3.3; TO 31-10-24, Para 7-9);

C.9. Do lightning protection air terminals provide a 1:1 (45 degree) cone of protection for C-E facilities? (TO 31-10-24, Para 7-2a, 7-8a);

C.10. Are all lightning protection down conductors electrically continuous from air terminals to ground connections? (MIL-STD 188-124B, Para 5.1.1.3.8.4);

C.11. Is the AC neutral insulated from the equipment chassis, case, and facility ground system except for one point at the facility power service entry? (MIL-STD 188-124B, Para 5.1.2.2.3, 5.1.1.2.5.1;

		MIL-HDBK-419A Vol II, Para 1.4.6b, 1.4.9.2f(4)); and C.12. With the circuit breaker open and the neutral disconnected, is a minimum of 1 megohm DC resistance measured between either side of the AC line and the equipment case (ground)? (MIL-STD 188-124B, Para 5.1.2.2.3; MIL-HDBK-419A Vol II, Para 1.4.9.2g).
10.2.3	The Technical Engineering Sustainment Inspection (TESI) Plan must include inspection schedules for all LRR and standalone LSSs as well as the bi-annual requirement of SRR sites and the NWSCC or NWSSC requirement for that year.	
10.2.4	The Technical Engineering Sustainment Inspection plan, complete with schedule must be submitted not later than 15 January for approval by the NWSO TA. The plan must be made available on-line five days after approval.	
10.2.5	The Contractor must create and manage Work orders to detail corrective actions for all sites in the current years plan. No Work orders to be open longer than one year.	
10.2.6	Site records drawings will be confirmed and redlined on site as required and one copy will be left on site. The original drawings must be amended as per redline changes.	
10.2.7	All Technical Engineering Sustainment Inspections must be carried out in accordance with the current approved plan.	