**Preparing Activity: NAVFAC**

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**Superseding**
**UFGS-26 08 00 (November 2021)**

**UNIFIED FACILITIES GUIDE SPECIFICATIONS**

**References are in agreement with UMRL dated July 2023**
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DIVISION 26 - ELECTRICAL

SECTION 26 08 00

APPARATUS INSPECTION AND TESTING

**11/22**

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SECTION 26 08 00

APPARATUS INSPECTION AND TESTING
**11/22**

**NOTE: This guide specification covers the requirements for electrical inspection and testing.**

**Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.**

**Remove information and requirements not required in respective project, whether or not brackets are present.**

**Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).**

**NOTE: Use this specification on project specifications where NETA testing is required.**

**The following sections reference NETA for power distribution services and equipment.**

**--Section 26 32 15.00 ENGINE-GENERATOR SET STATIONARY 15-2500 KW, WITH AUXILIARIES**
**--Section 26 12 19.10 THREE-PHASE, LIQUID-FILLED PAD-MOUNTED TRANSFORMERS**
**--Section 26 12 21 SINGLE-PHASE PAD-MOUNTED TRANSFORMERS**
**--Section 33 71 01 OVERHEAD TRANSMISSION AND DISTRIBUTION**
**--Section 33 71 02 UNDERGROUND ELECTRICAL DISTRIBUTION**

**--Section 26 13 00 SF6/HIGH-FIREPOINT FLUID INSULATED PAD-MOUNTED SWITCHGEAR**
**--Section 26 11 16 SECONDARY UNIT SUBSTATIONS**
**--Section 26 11 13.00 20 PRIMARY UNIT SUBSTATION**
**--Section 26 36 23 AUTOMATIC TRANSFER SWITCHES AND BY-PASS/ISOLATION SWITCH**
**--Section 26 23 00 LOW VOLTAGE SWITCHGEAR**
**--Section 26 24 13 SWITCHBOARDS**
**--Section 26 33 53 STATIC UNINTERRUPTIBLE POWER SUPPLY (UPS)**
**--Section 26 35 43 400-HERTZ (HZ) SOLID STATE FREQUENCY CONVERTER**
**--Section 26 35 44 270 VDC SOLID STATE CONVERTER**

**This section will also be used for specification sections containing low-voltage or medium voltage generator control switchboards or switchgear, pad-mounted air switches, and medium voltage circuit breakers. Provide the section numbers and titles in this section, and add NETA testing requirements to the applicable section.**

**Coordinate the sections in your contract documents with this list and with paragraph ACCEPTANCE TESTS AND INSPECTION in PART 3 of this specification.**
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# PART 1 GENERAL

## 1.1 REFERENCES

**********
**NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.**

**Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.**

**References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.**
**********

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)

NETA ATS (2021) Standard for Acceptance Testing

## 1.2 RELATED REQUIREMENTS

Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM applies to this section with additions and modifications specified herein.

## 1.3 SUBMITTALS

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**NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G". Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item if the submittal is sufficiently important or complex in context of the project.**

**For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.**

**The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.**

**Choose the first bracketed item for Navy, Air Force, and NASA projects, or choose the second bracketed item for Army projects.**
**********

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Acceptance Tests and Inspections; G[, [_____]]

SD-07 Certificates

Qualifications of Organization, and Lead Engineering Technician; G [, [_____]]

Acceptance Test and Inspections Procedure; G[, [_____]]

## 1.4 QUALITY ASSURANCE

### 1.4.1 Qualifications

Engage the services of a qualified testing organization to provide inspection, testing, calibration, and adjustment of the electrical distribution system and generation equipment listed in paragraph ACCEPTANCE TESTS AND INSPECTIONS herein. Organization must be independent of the supplier, manufacturer, and installer of the equipment. The organization must be a first tier subcontractor. No work required by this section of the specification may be performed by a second tier subcontractor.

a. Submit name and qualifications of organization. Organization must have been regularly engaged in the testing of electrical materials, devices, installations, and systems for a minimum of 5 years. The organization must have a calibration program, and test instruments used must be calibrated in accordance with NETA ATS.

b. Submit name and qualifications of the lead engineering technician performing the required testing services. Include a list of three comparable jobs performed by the technician with specific names and telephone numbers for reference. Testing, inspection, calibration, and adjustments must be performed by an engineering technician, certified by NETA (Level III) or the National Institute for Certification in Engineering Technologies (NICET) with a minimum of 5 years' experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices.

### 1.4.2 Acceptance Tests and Inspections Reports

Submit certified copies of inspection reports and test reports. Include certification of compliance with specified requirements, identify deficiencies, and recommend corrective action when appropriate. Type and neatly bind test reports to form a part of the final record. Submit test reports documenting the results of each test not more than 10 days after test is completed.

### 1.4.3 Acceptance Test and Inspections Procedure

Submit test procedure reports for each item of equipment to be field tested at least 45 days prior to planned testing date. Do not perform testing until after test procedure has been approved.

# PART 2 PRODUCTS

Not used.

# PART 3 EXECUTION

## 3.1 ACCEPTANCE TESTS AND INSPECTIONS

Testing organization will perform acceptance tests and inspections. Test

methods, procedures, and test values must be performed and evaluated in accordance with NETA ATS, the manufacturer's recommendations, and paragraph FIELD QUALITY CONTROL of each applicable specification section. Tests identified as optional in NETA ATS are not required unless otherwise specified. Place equipment in service only after completion of required tests and evaluation of the test results have been completed. Supply to the testing organization complete sets of shop drawings, settings of adjustable devices, and other information necessary for an accurate test and inspection of the system prior to the performance of any final testing. Notify Contracting Officer at least 14 days in advance of when tests will be conducted by the testing organization. Perform acceptance tests and inspections on applicable equipment and systems specified in the following sections:

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**NOTE: Select applicable sections for each project. Ensure each equipment section includes the following information. These changes should be found in NAVFAC LANT's Interim Specification Revision.**

**1. NETA ATS listed in the references.**

**2. The words "and Section 26 08 00 APPARATUS INSPECTION AND TESTING apply" added to paragraph RELATED REQUIREMENTS.**

**3. SD-06 submittals with "Acceptance checks and tests" added in PART 1.**

**4. Appropriate paragraphs from the NETA manual added under "Field Quality Control" in PART 3.**

**5. Add any job section numbers and titles containing low-voltage or medium voltage generator control switchgear or switchboards, pad-mounted air switches, or medium voltage circuit breakers. Provide the NETA tests required in the applicable section.**

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[ a. Section 26 32 15.00 ENGINE-GENERATOR SET STATIONARY 15-2500 KW, WITH AUXILIARIES. Functional engine shutdown tests, vibration base-line test, and load bank test will not be performed by the testing organization, but by the start-up engineer.

][b. Section 26 12 19.10 THREE-PHASE, LIQUID-FILLED PAD-MOUNTED TRANSFORMERS

][c. Section 26 12 21 SINGLE-PHASE PAD-MOUNTED TRANSFORMERS

][d. Section 33 71 01 OVERHEAD TRANSMISSION AND DISTRIBUTION

][e. Section 33 71 02 UNDERGROUND ELECTRICAL DISTRIBUTION. Medium voltage cables and grounding systems only.

][f. Section 26 13 00 SF6/HIGH-FIREPOINT FLUID INSULATED PAD-MOUNTED SWITCHGEAR

][g. Section 26 11 16 SECONDARY UNIT SUBSTATIONS

][h. Section 26 11 13.00 20 PRIMARY UNIT SUBSTATION

][i. Section 26 36 23 AUTOMATIC TRANSFER SWITCHES AND BY-PASS/ISOLATION SWITCH

][j. Section 26 23 00 LOW VOLTAGE SWITCHGEAR

][k. Section 26 24 13 SWITCHBOARDS

][l. Section 26 35 43 400 HERTZ ((HZ) SOLID STATE FREQUENCY CONVERTER. The NETA ATS representative must coordinate with the Contractor and the Converter Manufacturers' representative to witness, document, and validate the Converter Field Quality Control, Inspection and Testing. These tests will be performed by the converter manufacturers' representative, however include the documentation in the overall NETA report as well.

][m. Section 26 35 44 270 VDC SOLID STATE CONVERTER. The NETA ATS representative must coordinate with the Contractor and the Converter Manufacturers' representative to witness, document, and validate the Converter Field Quality Control, Inspection and Testing. These tests will be performed by the converter manufacturers' representative, however include the documentation in the overall NETA report as well.

]3.2 SYSTEM ACCEPTANCE

Final acceptance of the system is contingent upon satisfactory completion of acceptance tests and inspections.

3.3 PLACING EQUIPMENT IN SERVICE

A representative of the approved testing organization must be present when equipment tested by the organization is initially energized and placed in service.

-- End of Section --