

## SECTION 26 23 00

## SWITCHBOARDS AND SWITCHGEAR

07/06

## PART 1 GENERAL

## 1.1 REFERENCES

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

## ASTM INTERNATIONAL (ASTM)

ASTM A 123/A 123M	(2008) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 153/A 153M	(2009) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 167	(1999; R 2004) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM A 653/A 653M	(2007) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A 780	(2009) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM D 1535	(2007) Specifying Color by the Munsell System
ASTM D 709	(2001; R 2007) Laminated Thermosetting Materials

## INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C2	(2007; Errata 2007) National Electrical Safety Code
IEEE C37.90.1	(2002) Surge Withstand Capability (SWC) Tests for Relays and Relay Systems Associated with Electric Power Apparatus
IEEE C57.12.28	(2005) Standard for Pad-Mounted Equipment - Enclosure Integrity
IEEE C57.12.29	(2005) Pad-Mounted Equipment - Enclosure Integrity for Coastal Environments

IEEE C57.13	(1993; R 2003) Standard Requirements for Instrument Transformers
IEEE Std 100	(2000) The Authoritative Dictionary of IEEE Standards Terms
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)	
NEMA C12.1	(2001) Electric Meters; Code for Electricity Metering
NEMA ICS 6	(1993; R 2006) Standard for Industrial Controls and Systems Enclosures
NEMA LI 1	(1998) Industrial Laminated Thermosetting Products
NEMA PB 2	(2006) Deadfront Distribution Switchboards
NEMA PB 2.1	(2002) General Instructions for Proper Handling, Installation, Operation and Maintenance of Deadfront Distribution Switchboards Rated 600 Volts or Less
NEMA ST 20	(1992; R 1997) Standard for Dry-Type Transformers for General Applications

## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2007; AMD 1 2008) National Electrical Code - 2008 Edition
NFPA 70E	(2004) Electrical Safety in the Workplace

## UNDERWRITERS LABORATORIES (UL)

UL 467	(2007) Standard for Grounding and Bonding Equipment
UL 489	(2002; Rev thru Jun 2006) Standard for Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
UL 891	(2005) Dead-Front Switchboards

## 1.2 RELATED REQUIREMENTS

Section 26 08 00 APPARATUS INSPECTION AND TESTING applies to this section, with the additions and modifications specified herein.

## 1.3 DEFINITIONS

- a. Unless otherwise specified or indicated, electrical and electronics terms used in these specifications, and on the drawings, shall be as defined in IEEE Std 100.

## 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation;

submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

#### SD-02 Shop Drawings

##### Switchboard Drawings; G

Include dimensioned elevation drawings, fabrication drawings, single line diagrams, wiring diagrams and installation details of equipment to ensure a coordinated installation. Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices. Submittals shall include the nameplate data, size, and capacity. Submittals shall also include applicable federal, industry, and technical society publication references. Include additional information as specified in Article 1.5.2 Switchboard Drawings.

##### Bill of Materials; G

#### SD-03 Product Data

##### Switchboard; G

##### Circuit Breakers; G

##### Electronic Metering; G

##### Instrument Transformers; G

#### SD-06 Test Reports

##### Switchboard design tests; G

##### Switchboard production tests; G

##### Acceptance checks and tests; G

#### SD-10 Operation and Maintenance Data

##### Switchboard Operation and Maintenance, Data Package; G

#### SD-11 Closeout Submittals

##### Assembled Operation and Maintenance Manuals; G

##### Equipment Test Schedule; G

##### Final Protective Device Settings; G

### 1.5 QUALITY ASSURANCE

#### 1.5.1 Switchboard Product Data

Each submittal shall include manufacturer's information for each component,

device and accessory provided with the switchboard including:

- a. Circuit breaker type, interrupting rating, and trip devices, including available settings
- b. Manufacturer's instruction manuals and published time-current curves (on full size logarithmic paper) of the main breaker and all secondary feeder devices.
- c. [Instrument transformers](#), performance curves, ratings, dimensional Drawings.
- d. [Electronic metering](#), model number, available features, programming software, data cables, options included.

#### 1.5.2 [Switchboard Drawings](#)

Drawings shall include, but are not limited to the following:

- a. One-line diagram including breakers, current transformers, and meters
- b. Outline drawings including front elevation, section views, footprint, and overall dimensions
- c. Bus configuration including dimensions and ampere ratings of bus bars
- d. Markings and NEMA nameplate data
- e. Circuit breaker type, interrupting rating, and trip devices, including available settings
- f. Three-line diagrams and elementary diagrams and wiring diagrams with terminals identified, and indicating prewired interconnections between items of equipment and the interconnection between the items.
- g. Manufacturer's instruction manuals and published time-current curves (on full size logarithmic paper) of the main breaker and all feeder devices. These shall be used by the Contractor's Engineer in performing the coordination study and developing the recommended protective device settings ensuring protection and coordination are achieved.

#### 1.5.3 [Regulatory Requirements](#)

In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officer. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of [NFPA 70](#) and [NFPA 70E](#) unless more stringent requirements are specified or indicated.

#### 1.5.4 [Standard Products](#)

Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year

period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in this section.

#### 1.5.4.1 Alternative Qualifications

Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.

#### 1.5.4.2 Material and Equipment Manufacturing Date

Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

### 1.6 MAINTENANCE

#### 1.6.1 Switchboard Operation and Maintenance Data

Submit Operation and Maintenance Manuals in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

#### 1.6.2 Assembled Operation and Maintenance Manuals

Manuals shall be assembled and bound securely in durable, hard covered, water resistant binders. The manuals shall be assembled and indexed in the following order with a table of contents. The contents of the assembled operation and maintenance manuals shall be as follows:

- a. Manufacturer's O&M information required by the paragraph entitled "SD-10, Operation and Maintenance Data".
- b. Catalog data required by the paragraph entitled, "SD-03, Product Data".
- c. Drawings required by the paragraph entitled, "SD-02, Shop Drawings".
- d. Prices for spare parts and supply list.
- e. Design test reports
- f. Production test reports
- g. Final Bill of Materials

#### 1.6.3 Spare Parts

Spare parts shall be furnished as specified below. All spare parts shall be of the same material and workmanship, shall meet the same requirements, and shall be interchangeable with the corresponding original parts furnished.

- a. 2 - Fuses of each type and size for each switchboard supported.
- b. 1 - Heater.

- c. 1 quart of touch-up paint for each switchboard supplied, and each color.

## 1.7 WARRANTY

The equipment items shall be supported by service organizations which are reasonably convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

## PART 2 PRODUCTS

### 2.1 PRODUCT COORDINATION

Products and materials not considered to be switchboards and related accessories are specified in Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM.

### 2.2 SWITCHBOARD

NEMA PB 2 and UL 891.

#### 2.2.1 Ratings

The voltage rating of the switchboard shall be as indicated. The continuous current rating of the main bus shall be as indicated. The short-circuit current rating shall be as indicated. The switchboard shall be UL listed and labeled for its intended use. Individual protective device short circuit current rating shall not be less than the available short circuit interrupting current indicated. All sections shall have ArcFlash safety warning labels attached as required by NEC and NFPA 70E.

#### 2.2.2 Construction

Switchboard shall consist of vertical sections bolted together to form a rigid assembly and shall be front and rear aligned. All circuit breakers and cable terminations shall be front accessible. Where indicated, "space for future" or "space" shall mean to include bus, device supports, and connections. Provide insulating barriers in accordance with NEMA LI 1, Type GPO-3, 0.25 inch minimum thickness. Apply moisture resistant coating to all rough-cut edges of barriers. Switchboard shall be completely factory engineered and assembled, including protective devices and equipment indicated with necessary interconnections, instrumentation, and control wiring.

##### 2.2.2.1 Enclosure

The switchboard enclosure shall be a NEMA ICS 6 Type as indicated. NEMA 3R enclosure shall be aisleless enclosing a NEMA Type 1, enclosed switchboard. Enclosure shall be bolted together with removable bolt-on side and rear covers. Front doors on NEMA 3R enclosures shall be provided with padlockable vault handles with a three point latching system and continuous stainless steel hinge. Bases, frames and channels of enclosure shall be corrosion resistant and shall be fabricated of ASTM A 167 type 304 or 304L stainless steel for outdoor NEMA 3R enclosures and galvanized steel for indoor NEMA 1 enclosures. Base shall include any part of enclosure that is within 3 inches of concrete pad. Galvanized steel shall be ASTM A 123/A 123M, ASTM A 653/A 653M G90 coating, and ASTM A 153/A 153M, as applicable. Galvanize after fabrication where practicable. Paint enclosure, including bases, ASTM D 1535 light gray No. 61 or No. 49. Paint

coating system shall comply with IEEE C57.12.28 for galvanized steel and IEEE C57.12.29 for stainless steel.

#### 2.2.2.2 Bus Bars

Bus bars shall be copper with tin-plated contact surfaces. Plating shall be a minimum of 0.0002 inch thick. Make bus connections and joints with hardened steel bolts. The through-bus shall be rated at the full ampacity of the main throughout the switchboard. Provide minimum one-quarter by 2 inch copper ground bus secured to each vertical section along the entire length of the switchboard. Bolts for ground bus connections shall be Silicon Bronze. Neutral bus: None Required.

#### 2.2.2.3 Underground Pull Section and Metering Section (SB-DS1 only)

Service Entrance Switchboard, SB-DS1 shall include a separate underground pull section and metering cubicle (auxiliary section). The metering cubicle shall be complete with meter socket in accordance with Southern California Edison (SCE) Electric Service Requirements (ESRs) and necessary instrument transformers. Provide current transformers (CTs). The revenue meter will be provided and installed by others. Pull section shall contain a neutral bus (for landing neutral conductors) SCE standards. Contractor shall coordinate all requirements with Owner.

#### 2.2.2.4 Main Section

The main section shall consist of main lugs only or an individually mounted insulated-case circuit breaker or molded-case circuit breaker as shown. Circuit breakers rated 1000 amperes and above shall be insulated-case power circuit breakers. Circuit breakers rated below 1000 amperes shall be molded case circuit breakers. Provide 100 percent rated circuit breakers as indicated. Breakers shall be padlockable.

#### 2.2.2.5 Distribution Sections

The distribution sections shall consist of group mounted insulated-case circuit breakers or molded-case circuit breakers. Circuit breakers rated 1000 amperes and above shall be insulated-case power circuit breakers. Circuit breakers rated below 1000 amperes shall be molded case circuit breakers. Provide 100 percent rated circuit breakers as indicated. Breakers shall be padlockable.

#### 2.2.2.6 Auxiliary Sections

Auxiliary sections shall consist of indicated instruments, metering equipment, control equipment, transformer, and current transformer compartments as required to provide a complete switchboard as specified herein and as shown on the drawings.

#### 2.2.2.7 Handles

Handles for individually mounted devices shall be of the same design and method of external operation. Label handles prominently to indicate device ampere rating, color coded for device type. Identify ON-OFF indication by handle position and by prominent marking.

#### 2.2.3 Protective Device

Provide main and branch protective devices as indicated.

### 2.2.3.1 Insulated-Case Breaker

UL listed, 100 percent rated, stationary, manually operated, low voltage, insulated-case circuit breaker, with a short-circuit current rating as indicated at 480 volts. Circuit breaker frame size shall be as indicated. Series rated circuit breakers are unacceptable.

### 2.2.3.2 Molded-Case Circuit Breaker

**UL 489.** UL listed and labeled, stationary manually operated, low voltage molded-case circuit breaker, with a short-circuit current rating as indicated at 480 volts. Breaker frame size shall be as indicated. Series rated circuit breakers are unacceptable.

### 2.2.4 Electronic Trip Units

Equip breakers rated 400 amperes and above with a solid-state tripping system consisting of three current sensors and a microprocessor-based trip unit that will provide true rms sensing adjustable time-current circuit protection. The ampere rating of the current sensors shall be the same as the breaker frame rating. The trip unit ampere rating shall be as indicated. Ground fault protection shall be residual type sensing. The electronic trip units shall have the following features.

- a. All breakers shall have short delay pick-up and time settings, long delay pick-up and time settings, instantaneous settings ground fault settings and LED indication of cause of circuit breaker trip.

### 2.2.5 Watthour and Digital Meters

#### 2.2.5.1 Digital Programmable Meters (DPM)

**IEEE C37.90.1** for surge withstand. Provide true rms, plus/minus one percent accuracy, programmable, microprocessor-based meter enclosed in sealed cases with a simultaneous three line, twelve value LED display. Meters shall have **0.56 inch**, minimum, LEDs. The meters shall accept input from standard 5A secondary instrument transformers and direct voltage monitoring range to 600 volts, phase to phase. Programming shall be via a front panel display and a communication interface with a computer. Password secured programming shall be stored in non-volatile EEPROM memory. Digital communications shall be Modbus RTU protocol via a RS485 serial port and an independently addressable RS485 serial port. The meter shall calculate and store average max/min demand values for all readings based on a user selectable sliding window averaging period. The meter shall have programmable hi/low set limits with two Form C dry contact relays when exceeding alarm conditions. Meter shall provide Total Harmonic Distortion (THD) measurement to the thirty-first order. Historical trend logging capability shall include ability to store up to 100,000 data points with intervals of 1 second to 180 minutes. The unit shall also store and time stamp up to 100 programmable triggered conditions. Event waveform recording shall be triggered by the rms of 2 cycles of voltage or current exceeding programmable set points. Waveforms shall be stored for all 6 channels of voltage and current for a minimum of 10 cycles prior to the event and 50 cycles past the event. 12-VAC supply voltage, if required shall be provided by/from a control power transformer within the switchboard.

- a. Multi-Function Meter: Meter shall simultaneously display a selected

phase to neutral voltage, phase to phase voltage, percent phase to neutral voltage THD, percent phase to phase voltage THD; a selected phase current, neutral current, percent phase current THD, percent neutral current; selected total PF, kW, KVA, kVAR, FREQ, kVAh, kWh. Detected alarm conditions include over/under current, over/under voltage, over/under KVA, over/under frequency, over/under selected PF/kVAR, voltage phase reversal, voltage imbalance, reverse power, over percent THD. The meter shall have a Form C KYZ pulse output relay.

#### 2.2.6 Current Transformers

**IEEE C57.13.** Transformers shall be single ratio, 60 hertz, as indicated and suitable for use with the digital meters provided.

#### 2.2.7 Heaters

Provide 120-volt heaters in each switchboard section of outdoor units. Heaters shall be of sufficient capacity to control moisture condensation in the section, shall be 250 watts minimum, and shall be controlled by a thermostat located in the section. Thermostat shall be industrial type, high limit, to maintain sections within the range of 60 to 90 degrees F. Supply voltage for the heaters shall be obtained from a control power transformer within the switchboard. If heater voltage is different than switchboard voltage, provide transformer rated to carry 125 percent of heater full load rating plus any other loads requiring 120-volt power. Transformer shall have 220 degrees C insulation system with a temperature rise not exceeding 115 degrees C and shall conform to **NEMA ST 20**. Energize electric heaters in switchboard assemblies while the equipment is in storage or in place prior to being placed in service. Provide method for easy connection of heater to external power source. Provide temporary, reliable external power source if commercial power at rated voltage is not available on site.

#### 2.2.8 Terminal Boards

Provide with engraved plastic terminal strips and screw type terminals for external wiring between components and for internal wiring between removable assemblies. Terminal boards associated with current transformers shall be short-circuiting type. Terminate conductors for current transformers with ring-tongue lugs. Terminal board identification shall be identical in similar units. External wiring shall be color coded consistently for similar terminal boards.

#### 2.2.9 Wire Marking

Mark control and metering conductors at each end. Provide factory-installed, white, plastic tubing, heat stamped with black block type letters on factory-installed wiring. On field-installed wiring, provide white, preprinted, polyvinyl chloride (PVC) sleeves, heat stamped with black block type letters. Each sleeve shall contain a single letter or number, shall be elliptically shaped to securely grip the wire, and shall be keyed in such a manner to ensure alignment with adjacent sleeves. Provide specific wire markings using the appropriate combination of individual sleeves. Each wire marker shall indicate the device or equipment, including specific terminal number to which the remote end of the wire is attached. Switchboard wiring shall be Type SIS.

### 2.3 MANUFACTURER'S NAMEPLATE

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable. This nameplate and method of attachment may be the manufacturer's standard if it contains the required information.

### 2.4 FIELD FABRICATED NAMEPLATES

**ASTM D 709.** Provide laminated plastic nameplates for each switchboard, equipment enclosure, relay, switch, and device; as specified in this section or as indicated on the drawings. Each nameplate inscription shall identify the function and, when applicable, the position. Nameplates shall be melamine plastic, 0.125 inch thick, black with white center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be one by 2.5 inches. Lettering shall be a minimum of 0.25 inch high normal block style.

### 2.5 SOURCE QUALITY CONTROL

#### 2.5.1 Equipment Test Schedule

The Government reserves the right to witness tests. Provide equipment test schedules for tests to be performed at the manufacturer's test facility. Submit required test schedule and location, and notify the Contracting Officer 30 calendar days before scheduled test date. Notify Contracting Officer 15 calendar days in advance of changes to scheduled date.

##### a. Test Instrument Calibration

1. The manufacturer shall have a calibration program which assures that all applicable test instruments are maintained within rated accuracy.
2. The accuracy shall be directly traceable to the National Institute of Standards and Technology.
3. Instrument calibration frequency schedule shall not exceed 12 months for both test floor instruments and leased specialty equipment.
4. Dated calibration labels shall be visible on all test equipment.
5. Calibrating standard shall be of higher accuracy than that of the instrument tested.
6. Keep up-to-date records that indicate dates and test results of instruments calibrated or tested. For instruments calibrated by the manufacturer on a routine basis, in lieu of third party calibration, include the following:
  - (a) Maintain up-to-date instrument calibration instructions and procedures for each test instrument.
  - (b) Identify the third party/laboratory calibrated instrument to verify that calibrating standard is met.

### 2.5.2 Switchboard Design Tests

NEMA PB 2 and UL 891.

#### 2.5.2.1 Design Tests

Furnish documentation showing the results of design tests on a product of the same series and rating as that provided by this specification.

- a. Short-circuit current test
- b. Enclosure tests
- c. Dielectric test

### 2.5.3 Switchboard Production Tests

NEMA PB 2 and UL 891. Furnish reports which include results of production tests performed on the actual equipment for this project. These tests include:

- a. 60-hertz dielectric tests
- b. Mechanical operation tests
- c. Electrical operation and control wiring tests
- d. Ground fault sensing equipment test

## 2.6 APPROVED MANUFACTURERS

Design based on first named.

- a. Eaton (Cutler-Hammer).
- b. Schneider Electric (Square-D).
- c. General Electric (GE).
- d. Or approved equal.

## PART 3 EXECUTION

### 3.1 INSTALLATION

Electrical installations shall conform to NEMA ICS 6, IEEE C2, NFPA 70, and to the requirements specified herein.

### 3.2 GROUNDING

NFPA 70 and IEEE C2, except that grounds and grounding systems shall have a resistance to solid earth ground not exceeding 5 ohms.

Refer to Section 28 05 26.00 40, GROUNDING AND BONDING FOR ELECTRIC SAFETY AND SECURITY and the drawings for additional requirements.

#### 3.2.1 Grounding and Bonding Equipment

UL 467, except as indicated or specified otherwise.

### 3.3 INSTALLATION OF EQUIPMENT AND ASSEMBLIES

Install and connect equipment furnished under this section as indicated on project drawings, the approved shop drawings, and as specified herein.

#### 3.3.1 Switchboard

NEMA PB 2.1.

#### 3.3.2 Meters and Instrument Transformers

NEMA C12.1.

#### 3.3.3 Field Applied Painting

Where field painting of enclosures is required to correct damage to the manufacturer's factory applied coatings, provide manufacturer's recommended coatings and apply in accordance with manufacturer's instructions.

#### 3.3.4 Galvanizing Repair

Repair damage to galvanized coatings using ASTM A 780, zinc rich paint, for galvanizing damaged by handling, transporting, cutting, welding, or bolting. Do not heat surfaces that repair paint has been applied to.

#### 3.3.5 Field Fabricated Nameplate Mounting

Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets.

### 3.4 FOUNDATION FOR EQUIPMENT AND ASSEMBLIES

#### 3.4.1 Exterior Location

Mount switchboard on concrete slab as indicated. Provide conduit turnups and cable entrance space required by the equipment to be mounted. Seal voids around conduit openings in slab with water- and oil-resistant caulking or sealant. Cut off and bush conduits 3 inches above slab surface. Concrete work shall be as specified in Section 03 31 00.00 10 CAST-IN-PLACE STRUCTURAL CONCRETE.

#### 3.4.2 Interior Location

Mount switchboard on concrete house keeping pad as indicated. Provide conduit turnups and cable entrance space required by the equipment to be mounted. Seal voids around conduit openings in slab with water- and oil-resistant caulking or sealant. Cut off and bush conduits 3 inches above slab surface. Concrete work shall be as specified in Section 03 31 00.00 10 CAST-IN-PLACE STRUCTURAL CONCRETE.

### 3.5 FIELD QUALITY CONTROL

Contractor shall set the protective settings of breakers in accordance with the approved coordination study prior to testing. Submit final protective device settings based on actual equipment installed and settings actually applied.

3.5.1 Performance of [Acceptance Checks and Tests](#)

Perform in accordance with Section 26 08 00 APPARATUS INSPECTION AND TESTING.

3.5.2 Follow-Up Verification

Upon completion of acceptance checks, settings, and tests, the Contractor shall show by demonstration in service that circuits and devices are in good operating condition and properly performing the intended function. Circuit breakers shall be tripped by operation of each protective device. Test shall require each item to perform its function not less than three times. As an exception to requirements stated elsewhere in the contract, the Contracting Officer shall be given 5 working days advance notice of the dates and times for checks, settings, and tests.

-- End of Section --