



**MISSISSIPPI STATE**  
UNIVERSITY™

## **INVITATION FOR BIDS**

### **OFFICE OF PROCUREMENT & CONTRACTS**

#### **1. INSTRUCTIONS FOR BIDDERS**

- a. Sealed bids will be received in the Office of Procurement & Contracts, Mississippi State University, for the purchase of the items listed herein.
- b. All bids must be received in the Office of Procurement & Contracts on or before the bid opening time and date listed herein. Delivery of bids must be during normal working hours, 8:00 a.m. to 5:00 p.m. CST, except on weekends and holidays when no delivery is possible.
- c. Bidders shall submit their bids either electronically or in a sealed envelope. To submit electronically, follow the instructions below. Bids CANNOT be emailed.
  - i. Sealed bids should include the bid number on the face of the envelope as well as the bidders' name and address. Bids should be sent to: 245 Barr Avenue, 610 McArthur Hall, Mississippi State, MS 39762.
  - ii. At this time we only accept non-ITS bids electronically. For electronic submission of bids, go to: [portal.magic.ms.gov](https://portal.magic.ms.gov) and use the RFX number on the next page as your reference number.
- d. All questions regarding this bid should be directed to the Office of Procurement & Contracts at 662-325-2550.

#### **2. TERMS AND CONDITIONS**

- a. All bids should be bid "FOB Destination"
- b. Bidders must comply with all rules, regulations, and statutes relating to purchasing in the State of Mississippi, in addition to the requirements on this form. General Bid Terms and Conditions can be found here:  
[https://www.procurement.msstate.edu/procurement/bids/Bid\\_General\\_Terms\\_May\\_2019\\_V2.pdf](https://www.procurement.msstate.edu/procurement/bids/Bid_General_Terms_May_2019_V2.pdf)
- c. Any contract resulting from this Invitation for Bid shall be in substantial compliance with Mississippi State University's Standard Contract Addendum:  
<https://www.procurement.msstate.edu/contracts/standardaddendum.pdf>

**Bid Number/RFX Number: 23-68/RFX #3160005895**

**Opening Date: June 13, 2023 at 2:00 p.m.**

**Description: Switchgear**

Vendor Name: \_\_\_\_\_

Vendor Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Days the Offer is Firm: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Item	Quantity	Description	Unit Price	Total Price
1		Underground Switchgear and Fibered Concrete Box Pad for Switchgear		

SECTION 337719 - MEDIUM VOLTAGE PAD MOUNTED SWITCHGEAR

PART 1 - GENERAL

1.1 GENERAL

A. All work shall conform to the latest editions of the National Electrical Code (NEC) [National Fire Protection Association (NFPA) 70], the Standard for Electrical Safety in the Workplace (NFPA 70E), ANSI C2, the National Electrical Safety Code (NESC), the Life-Safety Code (NFPA 101), the International Building Code, the Americans with Disabilities Act, and all other applicable federal, state, and local codes and regulations.

B. All work shall be performed in strict compliance with NFPA 70E. Submission of bid shall stand as an agreement by the Contractor to indemnify and hold harmless the Engineer and Owner from all liability related to damage and/or injury to personnel and equipment during the installation of the project.

C. The contract documents are schematic in nature and are intended to convey the intent of the electrical work to be performed on this project. Provide all material, labor, equipment, etc., necessary to provide complete and operable electrical systems.

D. The General Conditions, Supplementary Conditions, General Requirements, Information to

Bidders, and all other parts of this set of Contract Documents are hereby adopted and are applicable to the Division 26 & 33 Contractor.

#### 1.2 ACCEPTABLE MANUFACTURERS

Acceptable Manufacturers (Pad-Mounted): S&C "Vista Pad-Mounted Style" and G&W Electric "RPFI Style".

#### 1.3 RELATED SPECIFICATIONS

There are other Division 26 & 33 sections of the project manual that contain other electrical specifications applicable to the project. The Electrical Contractor is responsible for all work in Division 26 & 33.

#### 1.4 SYSTEM COORDINATION

Switchgear units shall have fault interrupters set for coordination with the University's power distribution system. All fault interrupter settings shall conform to FM relaying standards and shall be approved by FM prior to the switchgear being energized. Coordination data and standard settings may be obtained from FM upon request. Information obtain from FM shall be used in the Contractor's performance of his own short circuit study, coordination study, and arc flash hazard analyses.

### **PART 2 - PRODUCTS**

#### 2.1 STANDARD PRODUCT

Medium voltage switchgear shall be in accordance with NEMA Publication No. 37.72 and ANSI Standard C57.12.28. All switchgear shall be new. In general, switchgear units shall consist of two (2) three-phase load-interrupter switches for switching two (2) 600-ampere main feeders and four (4) three phase fault interrupters for switching and protection of four (4) 200-ampere three phase taps. The two 600-ampere switches and the two 200-ampere fault interrupters shall be connected to a common 600-ampere bus when all switches/interrupters are closed. Other switchgear configurations may be accepted depending on the particular requirements of the project and the University's future-use plans. Confirm system characteristics with FM for present and future use. All components of vault-mounted switchgear units shall be elbow connected as specified herein and shall be enclosed in a submersible, SF6 insulated, welded stainless steel tank that is completely protected from the environment. All components of pad-mounted switchgear units shall be elbow connected as specified herein and shall be enclosed in an SF6 insulated, welded stainless steel tank and pad-mounted enclosure that is completely protected from the environment.

Switchgear supplied and installed on this project shall have the following ratings:

- ☐ Voltage rating shall be 15.5 KV.
- ☐ Unit shall be rated for alternating current at a frequency of 60 Hertz.
- ☐ Switchgear shall have a BIL rating of 95 KV.
- ☐ The load interrupter switches shall have a continuous and loadbreak current rating of 600-amperes.
- ☐ Load interrupter switches shall have a one-second current rating of 12,500 amperes symmetrical.

□ Fault interrupter switches on three-phase taps shall have a continuous current rating of 200-amperes.

□ Fault interrupter switches shall have a one-second current rating of 12,500 amperes symmetrical.

#### A. Load Interrupter Switches

Load interrupter switches shall be three-position (closed-open-ground) type. The load interrupter switches shall provide three-pole live switching of 600-ampere three phase circuits. Load interrupter switches shall provide a visible gap when open. Operating shafts shall be pad lockable in any position. The operating shaft shall be capable of being locked to prevent operation to the ground position. The load interrupter switches shall be furnished with a manual handle to charge the switch operating mechanism or to actuate the operating mechanism. Operating mechanism shall be capable of providing quick-make, quick break operation in either switching direction. The operating mechanism shall be designed to prevent inadvertent operation from the closed position directly to the ground position and vice versa. Load interrupter switch terminals shall be equipped with three single pole 600-ampere bushings designed to ANSI/IEEE 386 Standards to accept all standard 600-ampere insulated deadbreak elbows.

#### B. Fault Interrupters

1. Three-phase resettable fault interrupters shall be provided in the switchgear for live switching of tap circuits and for fault interruption of tap circuits. Fault interrupters shall be vacuum or arc spinning contact type. The fault interrupters shall be operated by a spring operating mechanism that is recharged with a manually operated handle. The operating mechanism shall operate independently of the speed of the manual handle. Trip indicators shall be provided on the fault interrupters that indicate the contact position is open. This indicator shall be fully visible through viewing windows in the switchgear tank. Fault interrupters shall provide three-pole fault interruption and three-pole load switching. Fault interrupter switch terminals shall be equipped with three single-pole 200-ampere universal bushing wells and inserts designed to meet ANSI/IEEE 386 Standards. For pad-mounted switchgear units, provide parking stands for each of the outgoing 200-ampere elbow connectors on the front of the switchgear tank.

2. Fault interrupters shall be set for coordination with the University's power distribution system. All fault interrupter settings shall conform to FM relaying standards and shall be approved by FM prior to the switchgear being energized. Coordination data and standard settings may be obtained from FM upon request.

#### C. Gas Fill Valve

Switchgear units shall come equipped with a pressure gauge and a gas fill valve.

#### D. Grounding Lugs

Pad-mounted switchgear units shall be furnished with provisions for two ground pads installed

on the switchgear unit tank and one ground pad on the switchgear cabinet enclosure. Ground pads shall be NEMA two-hole type.

#### E. Compartmental Locking

For pad-mounted switchgear units, all hinged or removable cabinet access lids or doors shall have a three-point latch and shall be provided with a 9/16" stainless steel or silicon bronze pentahead captive bolt locking device and provisions for padlocking. The pentahead bolt shall be coordinated so that it must be engaged before a padlock can be inserted into or removed from the hasp.

#### F. Labeling

For pad-mounted switchgear units, a danger label, complying with ANSI Z535, shall be located on the inside of the pad-mounted switchgear unit and readily visible whenever the first equipment door is opened.

#### G. Paint Finish

For pad-mounted switchgear units, the cabinet shall have a corrosion resistant finish that meets or exceeds paint requirements of ANSI C57.12.28. The outside shall be properly prepared, primed and painted with a highly weather resistant paint. All pad-mounted switchgear units shall have the manufacturer's premium paint system. Color of padmounted switchgear unit shall be Carboline F235 Dark Bronze, Valspar KMB0082 Dark Bronze or as accepted.

### 2.2 NAMEPLATES

A. Each major component of this specification shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a nameplate securely attached to the equipment.

B. Sectionalizer switch nameplates shall have a schematic with all switch positions shown and labeled.

## PART 3 EXECUTION

### 3.1 CABLE CONNECTIONS

Connect all medium voltage primary cables.

### 3.2 CAPS

Install insulated caps on all unoccupied (spare) 600-ampere deadbreak and all 200-ampere loadbreak bushings.

### 3.3 GROUNDING AND BONDING

Install driven ground rods in switchgear box pad. Refer to Section 33-79-19 for specific grounding and bonding requirements.

### 3.4 LOADBREAK ELBOWS

Install elbow type arrestors on one set of three-phase 200-ampere loadbreak bushings of medium voltage switchgear units (on the available spare circuit). Refer to Section 33-71-49 for specific requirements.

### 3.5 PAD-MOUNTED SWITCHGEAR INSTALLATION

Pad-mounted switchgear location with respect to buildings shall meet requirements of NESC.

Ensure a minimum of 10' clear workspace in front of pad-mounted switchgear units for stick work.

Install pad-mounted switchgear units in accordance with manufacturers' installation instructions.

Install pad-mounted switchgear on polymer concrete box pads sized for the switchgear unit, minimum 36" depth. Box pads shall be manufactured by Quazite or Concast. Box pads shall be placed on well-compacted 6" bed of limestone aggregate. Terminate medium-voltage ducts in the switchgear box pad with a bell end fitting set 30" below the top of the box pad.