



**THIS IS NOT  
AN ORDER**

**REQUEST FOR BIDS/PROPOSALS COVERSHEET  
THE UNIVERSITY OF SOUTHERN MISSISSIPPI**

**Procurement and Contract Services  
118 College Drive #5003, Hattiesburg, Mississippi 39406-0001**

**Date:** \_\_\_\_\_

**Bid No. 25-29**

THE UNIVERSITY OF SOUTHERN MISSISSIPPI is considering the purchase of the following item(s). We ask that you submit your bid and retain one copy for your files. Right is reserved to accept or reject any part of your bid. Your quotation will be given consideration if received in Bond Hall, Room 214 on or before:

**January 31, 2025 2:00 p.m. CDT**

**Buyer: Millissa Stork**

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

Company: \_\_\_\_\_

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

City/State/Zip: \_\_\_\_\_

TERMS - Bidder should state terms of sale. Our terms are 2% ten days, net 45 days. These terms will apply per Mississippi law.  
AWARDING CONTRACT - Cash terms will not be used as a basis for awarding contracts; however, the University will accept cash discounts when earned.

**NOTE: If you cannot quote on the exact material shown, please indicate any exception giving brand name and complete specifications of any alternate. If additional space is required, use a separate sheet or letter of transmittal.**

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL NET PRICE
		<b>DESCRIPTION</b>  <b>RFP Bid# 25-29</b> <b>Transformer for the new Oyster Hatchery building on GCRL's Cedar Point Campus</b>  <b>RFx 3160007120</b>		
		<small>PROPOSAL MUST BE RETURNED TO THE UNIVERSITY IN ACCORDANCE WITH THE SPECIFICATIONS. RFP NUMBER AND DATE OF BID OPENING MUST BE SHOWN ON THE OUTSIDE OF THE ENVELOPE IF USING THAT METHOD.</small>		

We quote you as above-F.O.B. The University of Southern Mississippi. Shipment can be made in \_\_\_\_\_ days from receipt of order. DATE \_\_\_\_\_ TERMS \_\_\_\_\_  
Return quotation to Procurement Services at above address.

**Signature Required** \_\_\_\_\_

SECTION 261200 - THREE PHASE PAD-MOUNTED TRANSFORMERS

1. GENERAL

1.1. **The scope of this section is for USM to purchase the building transformer directly from the manufacturer. The transformer will be shipped to the site where it will be off-loaded by the contractor. The contractor shall locate the transformer in a safe place out of the way of construction and will be required to move it to its final location at the appropriate time. If transformer is damaged AFTER it is delivered to the site, the contractor will have to repair / replace the transformer at the direction of USM. The transformer will be installed by the electrical contractor.**

1.2. **USM will carry all warranties on the transformer.**

1.3. This specification covers the electrical and mechanical characteristics of 45-3750 kVA Three-Phase Step-Down Pad-Mounted Distribution Transformers with secondary voltages not exceeding 700V.

1.4. All characteristics, definitions, and terminology, except as specifically covered in this specification, shall be in accordance with the latest revision of the following ANSI and NEMA standards.

C57.12.00 - IEEE Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers.

C57.12.26 - IEEE Standard for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers for Use with Separable Insulated High-Voltage Connectors (34500GrdY/19920 Volts and Below; 2500 kVA and Smaller).

C57.12.28 - Pad-Mounted Equipment - Enclosure Integrity.

C57.12.34 - IEEE Standard Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers (2500 kVA and Smaller) - High Voltage: 34500GrdY/19920 Volts and Below; Low-Voltage: 480 Volt 2500 kVA and Smaller. (*issued in March 2005 - combines C57.12.22 and C57.12.26*)

C57.12.90 - IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers and IEEE Guide for Short-Circuit Testing of Distribution and Power Transformers.

C57.91 - Guide for Loading Mineral-Oil-Immersed Transformers.

2. RATINGS

2.1. The transformer shall be designed in accordance with this specification and the kVA rating shall be **1,000 kVA**.

- 2.2. The primary voltage, configuration, and the basic lightning impulse insulation level (BIL) shall be 12,470-volt DELTA @ 95 kV BIL. **The contractor MUST field verify primary voltage and provide voltage available at site.**

The secondary voltage, configuration, and the basic insulation level (BIL) shall be 480Y/277 WYE @ 30 kV BIL.

- 2.3. The transformer shall be furnished with full capacity high-voltage taps. The taps shall be +/- 2 - 2½% above and below nominal voltage The tap changer shall be clearly labeled to reflect that the transformer must be de-energized before operating the tap changer as required in Section 3.3 of ANSI C57.12.26. Taps shall be provided on the higher voltage of dual voltage primary units. The tap changer switch shall be an externally operated, snap action switch with a hotstick-operable handle.
- 2.4. The average winding temperature rise above ambient temperature, when tested at the transformer rating, shall not exceed 65°C at the base transformer rating, shall not exceed 55°C, and when tested at 112% of the base rating, shall not exceed 65°C.
- 2.5. The percent impedance voltage, as measured on the rated voltage connection, shall be per Table 2. For target impedances, the tolerance on the impedance shall be +/- 7.5% of nominal value for impedance values greater than 2.5%. The tolerance on the impedance shall be +/- 10.0% for impedance values less than or equal to 2.5%.

**Table 2 - Percent Impedance Voltage**

<b>KVA Rating</b>	<b>Impedance</b>
75	3.00 -- 5.75
112.5-300	5.00 – 5.75
500	5.00 – 5.75
750-3750	5.75 nominal

- 2.6. **The contractor MUST submit this item for review by the engineer. The contractor MUST provide a letter signed by the responsible agent of the electrical contractor stating the following:**

**PLEASE BE ADVISED THAT I HAVE REVIEWED THE DRAWINGS AND HAVE FIELD VERIFIED THAT THE PRIMARY VOLTAGE ON THE PROJECT IS: \_\_\_\_\_ . I HAVE ALSO REVIEWED THE SECONDARY VOLTAGE FOR THIS PROJECT AND IT IS: \_\_\_\_\_ . I UNDERSTAND THAT IF THE TRANSFORMER IS APPROVED BY THE ENGINEER AT THIS VOLTAGE AND IT IS DETERMINED THAT THIS IS NOT CORRECT THAT I WILL BE RESPONSIBLE FOR REPLACING THIS TRANSFORMER AT NO COST TO THE OWNER OR ENGINEER.**

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE

**The transformer submittal will be REJECTED without this form.**

**3. HIGH VOLTAGE BUSHINGS AND TERMINALS**

**3.1. Bushing Style:**

**FOR 15/25 KV DEADFRONT, FOR CURRENTS BELOW 200 AMPS:** The high voltage bushings shall be 15/25 kV 200A bushing wells with bushing well inserts installed. The bushings shall be externally removable and be supplied with a removable stud.

**15 KV LOOP FEED DEADFRONT:** The transformer shall be provided with six (6) high voltage bushings in accordance of ANSI C57.12.34 for loop feed configurations. The bushing heights shall be in accordance with of ANSI C57.12.34.

**4. SECONDARY VOLTAGE BUSHINGS AND TERMINALS**

**4.1. Bushing Style:**

The transformer shall be provided with tin-plated spade-type bushings. The spacing of the connection holes shall be 1.75" on center, per ANSI C57.12.34 figure 13. The quantity of connection holes shall be 4.

**4.2. Bushing Configuration:**

The transformer shall be provided with bushings in a staggered arrangement in accordance with of ANSI C57.12.34.

**5. TRANSFORMER PROTECTION AND SWITCHING**

**5.1. Overcurrent Protection:**

**Bayonet with current limiting fuses:** The high-voltage overcurrent protection scheme provided with the transformer shall be an externally removable loadbreak expulsion Bay-O-Net fuse assembly with a flapper valve to minimize oil spillage. The bayonet fuses shall be in series with ELSP under-oil partial-range current-limiting back-up fuses with an interrupting rating of 50,000 A.

**5.2. Overvoltage Protection:**

The high-voltage overvoltage protection scheme provided with the transformer shall protect the high-voltage winding.

Externally mounted, Distribution Class M.O.V.E. Deadfront elbow arresters shall be supplied. Arrester rating shall be 10kV

**5.3. Switching:**

The primary switching scheme provided with the transformer shall be one on/off loadbreak switch

**6. GENERAL DESIGN**

6.1. Core and coil

The core and coil shall be vacuum processed to ensure maximum penetration of insulating fluid into the coil insulation system. While under vacuum, the windings will be energized to heat the coils and drive out moisture, and the transformer will be filled with preheated filtered degassed insulating fluid. The core shall be manufactured from burr-free, grain-oriented silicon steel and shall be precisely stacked to eliminate gaps in the corner joints. The coil shall be insulated with B-stage, epoxy coated, diamond pattern, insulating paper, which shall be thermally cured under pressure to ensure proper bonding of conductor and paper.

**Copper windings shall be provided.**

6.2. Dielectric fluid

The dielectric coolant shall be listed less-flammable fluid meeting the requirements of National Electrical Code Section 450-23 and the requirements of the National Electrical Safety Code (IEEE C2-2002), Section 15. The dielectric coolant shall be non-toxic\*, non-bioaccumulating and be readily and completely biodegradable per EPA OPPTS 835.3100. The base fluid shall be 100% derived from edible seed oils and food grade performance enhancing additives. The fluid shall not require genetically altered seeds for its base oil. The fluid shall result in zero mortality when tested on trout fry \*(per OECD G.L. 203). The fluid shall be certified to comply with the US EPA Environmental Technology Verification (ETV) requirements, and tested for compatibility with transformer components. The fluid shall be Factory Mutual Approved, UL Classified Dielectric Medium (UL-EOUV) and UL Classified Transformer Fluid (UL-EOVK), Envirotemp FR3™ fluid.

6.3. Tank and Cabinet Enclosure

6.3.1. The high-voltage and low-voltage compartments, separated by a metal barrier, shall be located side-by-side on one side of the transformer tank. When viewed from the front, the low-voltage compartment shall be on the right. Each compartment shall have a door that is constructed so as to provide access to the high-voltage compartment only after the door to the low-voltage compartment has been opened. There shall be one or more additional fastening devices that must be removed before the high-voltage door can be opened. Where the low-voltage compartment door is of a flat panel design, the compartment door shall have three-point latching with a handle provided for a locking device. Hinge pins and associated barrels shall be constructed of corrosion-resistant material, passivated AISI Type 304 or the equivalent.

6.3.2. A recessed, captive, penta-head bolt that meets the dimensions per ANSI C57.12.28 shall secure all access doors.

6.3.3. The enclosure integrity of the tank and cabinet shall meet the requirements for tamper resistance set forth in ANSI C57.12.28 including but not limited to the pry test, pull test, and wire probe test.

6.3.4. The compartment depth shall be in accordance with C57.12.34, unless additional depth is specified.

6.3.5. The tank base must be designed to allow skidding or rolling in any direction. Lifting provisions shall consist of four lifting lugs welded to the tank.

**PROJECT NO.: 23022 UNIVERSITY OF SOUTHERN MISSISSIPPI OCEAN SPRINGS, MS**  
**IHL #210-248 CEDAR POINT OYSTER HATCHERY**  
**BID 25-29 AND RESEARCH LAB**

- 6.3.6. The tank shall be constructed to withstand 7 psi without permanent deformation, and 15 psi without rupture. The tank shall include a 15psig pressure relief valve with a minimum flow rate of 35 SCFM.
- 6.3.7. The tank and cabinet coating shall meet all the requirements of ANSI C57.12.28 including:
- Salt Spray Test
  - Crosshatch Adhesion Test
  - Humidity Test
  - Impact Test
  - Oil Resistance Test
  - Ultraviolet Accelerated Weathering Test
  - Abrasion Resistance - Taber Abraser
- 6.3.8. The exterior of the unit shall be painted Munsell 7GY3.29/1.5 green in color. The cabinet interior and tank face shall be painted gray for ease of viewing the inside the compartment.
- 6.3.9. The tank shall be complete with an anodized aluminum laser engraved nameplate. This nameplate shall meet Nameplate B per ANSI C57.12.00.

**7. ACCESSORIES**

The following accessories shall be provided

- Bolted main tank cover (1000 kVA and below)
- Welded Main Tank Cover with bolted handhole (1500 kVA and above)
- 1.0” upper fill plug
- 1.0” drain plug in LV compartment (45-500 kVA)
- 1.0” drain valve w/ sampling device in LV compartment (750-3750 kVA)
- Automatic pressure relief valve
- Metal drip shield with bayonets
- 20” deep cabinet
- Ground provisions per C57.12.34 section 9.11.
- Meet NEMA TR-1 sound levels
- Liquid level gauge
- Dial-type thermometer gauge
- Pressure vacuum gauge
- **“Transformers shall conform to DOE 2010 standard efficiency levels for liquid immersed distribution transformers, as specified in Table I.1 of the Department of Energy ruling, “ 10 CFR Part 431 Energy Conservation Program for Commercial Equipment: Distribution Transformers Energy Conservation Standards; Final Rule; October 12, 2007.” Manufacturer shall comply with the intent of all regulations set forth in noted ruling.”**

8. SHIPPING

Units 1000 kVA and larger shall be loaded and unloaded with overhead cranes, so a pallet is not to be provided for these transformers. **The contractor will be responsible to unload the transformer and store it in a safe location until the final location become available. Any relocation required will be done by the contractor at his expense.**

9. TESTING & TOLERANCES

9.1. All units shall be tested for the following:

- No-Load losses at rated current
- Total (85°C) losses at rated current
- Percent Impedance (85°C) at rated current
- Excitation current (100% voltage) test
- Winding resistance measurement tests
- Ratio tests using all tap settings
- Polarity and phase relation tests
- Induced potential tests
- Full wave and reduced wave impulse test

9.2. In addition, the manufacturer shall provide certification upon request for all design and other tests listed in C57.12.00, including verification that the design has passed short circuit criteria per ANSI C57.12.00 and C57.12.90.

10. APPROVED MANUFACTURERS

Cooper Power Systems—Waukesha WI, or approved equal. As represented locally by Vol Power Sales, Inc. (Knoxville, TN) – 865-769-4337. Howard Industries 601-425-3151. Other manufacturers will be reviewed with USM and may be allowed based on their recommendation.

END OF SECTION 261200

Clarion Ledger

## NOTICE TO BIDDERS

Sealed bids will be received on the Gulf Coast Research Laboratory's Cedar Point Campus in the Physical Plant Building at 127 McIlwain Drive, Ocean Springs, Mississippi, until **Friday, January 31st, 2:00 p.m.** for the purchase of the following:

**Bid 25-29 Transformer for Cedar Point Oyster Hatchery**  
**RFx: 3160007120**

Detailed specifications and electronic bid submission instructions may be secured from the above office upon request or our website <https://www.usm.edu/procurement-contract-services/current-bids-and-sole-source-notices.php>

Right is hereby reserved to reject any or all bids.

Millissa Stork  
Procurement Coordinator  
The University of Southern Mississippi  
Gulf Coast Research Laboratory  
(228) 818-8001

Publish 2 times and charge to The University of Southern Mississippi:

01/10/2025

01/17/2025