University of Missouri (UM) Procurement

BID REQUEST NO.: 22118
TITLE: 2000kVA PAD MOUNTED TRANSFORMER
ISSUE DATE: APRIL 4, 2022

SOURCING CONTACT: Wade A. Jadwin
PHONE NO.: 573-341-4049
E-MAIL: jadwinw@mst.edu

BID DUE DATE: APRIL 20, 2022 AT 2:00 PM CST

MAILING INSTRUCTIONS: Print or type Bid Request No. and Due Date on the envelope. Bids are to be contained in a sealed envelope and mailed or hand delivered to the address below by the due date and time noted above. FAXED OR E-MAILED BID RESPONSES WILL NOT BE CONSIDERED. The University assumes no responsibility for any bidder’s on-time receipt at the designated location for bid opening.

RETURN BID TO: University of Missouri Procurement
Attention: Wade A. Jadwin – Strategic Sourcing Specialist
1201 North State Street – Suite G5C
Rolla, MO 65409

You are invited to submit a bid on the items or services specified. All bids must be made on this form and shall be subject to the terms and conditions included herein. Bidder offers and agrees to furnish and deliver the items or perform the services upon which prices are quoted herein. Any quotations sent to the University of Missouri prior to this request for bid are void and will not be considered.

The bidder agrees the language of this bid document shall govern in the event of a conflict with supplier’s bid response. The bidder further agrees that upon receipt of an authorized purchase order from the University of Missouri or when a Notice of Award is signed and issued by an authorized official of the University of Missouri, a binding contract shall exist between the bidder and The Curators of the University of Missouri.

If you have any questions regarding the RFB, please send them to:
Wade A. Jadwin, Strategic Sourcing Specialist
University of Missouri Procurement
1201 North State Street – Suite G5C
Rolla, MO 65409
jadwinw@mst.edu

All questions regarding the RFB must be received no later than April 13, 2022 at 2:00 PM CST.

The University reserves the right to waive any informalities in Request for Bids and to reject any or all bids.
# AUTHORIZED BIDDER REPRESENTATION

<table>
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<th>Authorized Signature</th>
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<tr>
<td>Printed Name</td>
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Number of calendar days delivery after receipt of order: ______________________________

Payment Terms: __________________________ Note: Net 30 is default. Early pay discounts encouraged.

Select Payment Method: SUA ACH Check

Circle one: Individual Partnership Corporation

If a corporation, incorporated under the laws of the State of ________________________

Licensed to do business in the State of Missouri? _____yes _____no

Maintain a regular place of business in the State of Missouri? _____yes _____no

*This signature sheet must be returned with your bid.*
BID REQUEST AND BID CONDITIONS

This Bid Request and Bid is made upon and subject to the following conditions, all of which are accepted by bidder. Upon acceptance by University, this Bid Request and Bid and the University Purchase Order issued thereon shall constitute the contract for furnishing the items described in the bid in strict conformity with the contract instruments.

1. No oral explanation regarding the meaning of the specifications will be made, and no oral interpretation will be given before the award of the contract. If any person contemplating submitting a bid for this contract is in doubt as to the true meaning of any part of the specifications or any other proposed contract documents, they may submit to the University a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made by addendum duly issued or delivered to each person receiving a set of such documents. The University will not be responsible for any other explanation or interpretations of the proposed documents.

2. The University reserves the right to reject any and all bids and to waive any informality in bids.

3. Whenever the name of a manufacturer or vendor is mentioned herein and words "or equal" do not follow, it shall be deemed that the words "or equal" shall follow such designation unless the context specifies "no substitution". University assumes that items bid as equal are equal. University reserves the right to return at the bidder's expense all items that are furnished which are not acceptable as equals to items specified by the Bid Request and Specifications, and supplier agrees to replace such items with satisfactory items at the original bid price.

4. Unless it is so noted on the bid it will be deemed that the article furnished is that designated. If the supplier proposes to furnish an item of a different manufacturer or supplier other than the one specified on the face hereof, the manufacturer or supplier of the substituted items shall be noted and complete descriptive literature describing the items to be substituted must accompany the bid.

5. All items bid shall be new unless otherwise specified by the University.

6. Bidder agrees to unconditionally guarantee all items bid upon against defects in material and workmanship for a period of one year from the date of acceptance by the University unless otherwise specified.

7. Materials and services furnished the University are not subject to either Federal Excise Taxes or the Missouri Sales Tax. Exemption certificates will be furnished on request.

8. Prices quoted are to be firm and final, and prices shall be stated in units of quantity specified with packing and drayage charges included.

9. Shipments shall be marked as directed on the Purchase Order.

10. All deliveries shall be made FOB Destination with freight charges fully included and prepaid. C.O.D. shipments will not be accepted. The seller must pay and bear all freight charges.

11. The University will not be responsible for articles or services furnished without a Purchase Order.

12. Risk of loss or damage to the goods prior to the time of their receipt and acceptance by the University is upon the supplier.

13. All invoices and correspondence shall show the Purchase Order Number. All invoices must contain full descriptive information on items or service furnished. Separate invoices shall be rendered for each order and forwarded to the University.

14. Supplier agrees to defend, protect, and save the University harmless from all claims and actions arising out of patent infringement.

15. University reserves the right to cancel all or any part of orders if shipment is not made as promised. Supplier shall notify the University if shipment cannot be made as promised. Time of proposed delivery must be stated in definite terms in the space provided.

16. The bidder hereby guarantees that no article listed herein is adulterated or misbranded within the meaning of the Federal Food, Drug and Cosmetic Act or an article which may not, under the provisions of Federal Law, be introduced into interstate commerce.

17. Samples, when required, are to be furnished prior to the date specified for receipt of bids.

18. In case of any doubt or difference of opinion as to the items to be furnished hereunder or the quality thereof, the decision of the UM Chief Procurement Officer shall be final and binding upon both parties.
19. The University reserves the right to award an order to the lowest aggregate bidder for all items or on an item basis, or a group of like items, whichever is found to be in the best interest of the University. If a split award is not acceptable to a bidder, it must be stated in the bid response.

20. In awarding the contract, the University may take into consideration the skill, facilities, capacity, experience, ability, responsibility, previous work, the financial standing of the bidder or bidders; the amount of other work being carried on by the bidder; the quality, efficiency, and construction of the equipment proposed to be furnished; the period of time within which the equipment is to be furnished and delivered; and the necessity of prompt delivery of the items herein described. The inability of any bidder to meet the requirement mentioned above may be cause for rejection of his bid.

21. In the event time and materials are a portion of this bid, the University reserves the right to audit supplier's records concerning this bid.

22. All items or services to be furnished hereunder shall meet all applicable State and Federal requirements of the Occupational Safety and Health Standard. All alleged violations and deviations from said State and Federal regulations or standards of the items of services to be furnished hereunder, must be set forth on the Bid Form at the time of submission of the bid. Or if at any later date the items or services contained herein shall not meet all applicable state and federal requirements after the bidder is awarded the contract hereunder, the bidder must notify UM Procurement immediately in writing.

23. The University serves from time to time as contractor for the United States Government. Accordingly, the provider of goods and/or services shall comply with federal laws, rules, and regulations applicable to subcontractors of government contracts including those relating to equal employment opportunity and affirmative action in the employment of minorities (Executive Order 11246), women (Executive Order 11375), persons with disabilities (29 USC 706 and Executive Order 11758), and certain veterans (38 USC 4212 formerly [2012]) contracting with business concerns with small disadvantaged business concerns (Publication L. 95-507). Contract clauses required by the Government in such circumstances are incorporated herein by reference.

24. As required by Section 508 of the Rehabilitation Act (36 C.F.R., Pt. 1194) and other state and federal laws, the University requires that all products provide equivalent ease of use for individuals with disabilities as for non-disabled individuals. To fulfill this obligations, Bidder shall: (1) ensure that all products comply with the Web Content Accessibility Guidelines (WCAG); (2) provide the University with an Accessibility Conformance Report; (3) respond promptly to accessibility complaints or reported deficiencies at no cost to the University; and (4) indemnify and hold the University harmless in the event of any claims arising from inaccessibility.

25. Bidder certifies to the best of its knowledge and belief that it and its principals are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency in accordance with Executive Order 12549 (2/18/86).

26. If this bid involves health care services or products, the Bidder agrees to maintain, and will further assure such compliance by its employees or subcontractors, the confidential nature of all information which may come to Bidder with regard to patients of the University. All services provided pursuant to this bid shall be provided in accordance with all applicable federal and state laws, including The Health Insurance Portability and Accountability Act of 1996, Public Law 104-191, sections 261-264, the Administrative Simplification sections and the regulations promulgated pursuant thereto and regulations of the Joint Commission on Administration. Bidder represents that Bidder is not currently excluded or threatened with exclusion from participating in any federal or state funded health care program, including Medicare and Medicaid. Bidder agrees to notify the University of any imposed exclusions or sanctions covered by this representation.

27. If the contract resulting from this bid involves the acquisition of disposal of services, supplies, information technology, or construction and has a total potential value of $100,000 or more, and if awarded supplier is a company with ten (10) or more employees, then Supplier certifies that it, and any company affiliated with it, does not boycott Israel and will not boycott Israel during the term of this Contract. In this paragraph, the terms “company” and “boycott Israel” shall have the meanings described in Section 34.600 of the Missouri Revised Statutes.

28. Any contract issued as a result of this RFB shall be construed according to the laws of the State of Missouri. Additionally, the awarded supplier shall comply with all local, state, and federal laws and regulations related to the performance of the contract to the extent that the same may be applicable.
29. In accordance with University policy, preference shall be given to Missouri products, materials, services, and firms when the goods or services to be provided are equally or better suited for the intended purpose. In assessing overall value, consideration will be given to the extent to which proximity or Missouri preference of the supplier provides potential advantages or reduction of risks. Firms are considered “Missouri firms” if they maintain a regular place of business in the State of Missouri.

30. In connection with the furnishing of equipment, supplies, and/or services as a result of this bid, the contractor and all subcontractors shall agree not to discriminate against any recipients of services, or employees or applicants for employment on the basis of race, color, religion, national origin, sex, age, disability or veteran status. The contractor shall comply with federal laws, rules, and regulations applicable to subcontractors of government contracts, including those relating to equal employment of minorities, women, persons with disabilities, and certain veterans. Contract clauses required by the United States Government in such circumstances are incorporated herein by reference.

31. Due to the changing nature of the COVID-19 pandemic, awarded supplier will monitor and comply with CDC and other federal, state and local guidance; modifications to University operating procedures; and directives of University relating to protection of the health and safety of the University community.

NOTIFICATION TO UNIVERSITY IN EVENT OF POSITIVE COVID-19 CASE: In the event any of the successful Contractor’s personnel who have or are presently performing services for the University of Missouri (a) tests positive for COVID-19, or (b) has been in close contact with someone that tests positive for COVID-19, the successful Contractor shall immediately notify the University designated contact, and take immediate action to quarantine such person and any other Contractor Personnel who may have come in contact with the person testing positive for COVID-19, and assist University in identifying any other persons on the University campus who may have come in contact with such person. Contractor must clean and disinfect all areas any infected person may have contacted on University’s campus, and any cleaning or sanitation costs resulting from a positive COVID-19 test of Contractor personnel are the sole cost and responsibility of Contractor.

32. Suppliers shall refrain in offering any offers of gifts to the University and all University of Missouri employees in accordance with University of Missouri Policy, #26301, Suppliers.

33. The University reserves the right, in its best interest as determined by the University, to cancel the contract by giving written notice to the Supplier thirty (30) days prior to the effective date of such cancellation.

34. Preferred settlement method is through the use of Electronic Accounts Payable solutions. Payment terms associated with these forms of payment will be issued as net 30 after the date of invoice. Payment terms associated with settlement by check will be net 30 days. Cash discounts for prompt payment may be offered but they will not be considered in determination of award unless specifically stated in the Detailed Specifications and Special Conditions. The University may withhold payment or make such deductions as may be necessary to protect the University from loss or damage on account of defective work, claims, damages, or to pay for repair or correction of equipment or supplies furnished hereunder. Payment may not be made until satisfactory delivery and acceptance by the University and receipt of correct invoice have occurred. For consulting services and/or contract labor services performed for MU Health Care, the hourly rate and the number of hours worked must be included in the agreement and/or on the invoice submitted. Payment may not occur unless this information has been provided. The University encourages suppliers to opt into its Single-Use Account (SUA) credit card program for payment of invoices. The SUA is an electronic, credit card-based payment solution that acts like a check. It provides a single 16-digit virtual account number for each payment. Similar to a check, the credit limit on each SUA is set to the specific payment amount. Payment terms for Suppliers who participate in the SUA program are Net 0 as opposed to the standard Net 30 terms. No additional fees shall be charged for the use of University credit cards.

35. The intended coverage of this RFB, and any contract resulting from this solicitation, shall be for the use by all faculty, staff, students, departments, locations, and affiliates of the University of Missouri, including MU Health Care. The University of Missouri System seeks to make the terms and prices of this bid available to other public entities and higher education institutions. Extension of the terms and prices to any or all other higher education institutions and public entities is at the discretion of bidders and shall not be considered in the award of this bid. The bidder shall further understand and agree that participation by other higher education institutions and public entities is discretionary on the part of these institutions, and the University of Missouri System bears no financial responsibility for any payments due the supplier by such entities, nor will the University be responsible for contract administration other institutions.
UNIVERSITY OF MISSOURI
SPECIAL CONDITIONS & DETAILED SPECIFICATIONS

University of Missouri Procurement is requesting bids for the furnishing and delivery of one (1) 2000kVA Pad Mounted Transformer for University of Missouri – Columbia – Energy Management.

All quantities are estimated based upon anticipated needs. The University reserves the right to order more or less as needed. Instructions for ordering will be provided at time of notice of award and/or issuance of purchase order.

AWARD:
The award will be based on lowest bid meeting all specifications. The University reserves the right to award an order to the lowest aggregate bidder for all items or on an item basis, or a group of like items, whichever is found to be in the best interest of the University. **If a split award is not acceptable to a bidder, it must be stated in the bid response.**

Note: The University of Missouri reserves the right to negotiate best and final terms with the bidder selected.

PAYMENT:

All proposals to be submitted on the basis of payment by MU check, shall have terms of Net 30 days. Payment shall be made within thirty days after receipt of properly certified vendor’s invoices, rendered in duplicate. MU may withhold payment or make deductions as may be necessary to protect MU from loss or damage on account of defective work, claims, damages, or to pay for repair or correction of products/services furnished hereunder.

Invoicing will reflect the work performed per completion of each testing event (mobilization).

Periodic reconciliation of project invoices will be made based on actual tests and services performed. Frequency of these reconciliations will be mutually agreed to by both MU and contractor.

INSURANCE REQUIREMENTS:

Contractor agrees to maintain, on a primary basis and at its sole expense, at all times during the life of any resulting contract the following insurance coverages, limits, including endorsements described herein. The requirements contained herein, as well as the University’s review or acceptance of insurance maintained by Contractor is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by Contractor under any resulting contract. Coverage to be provided as follows by a carrier with A.M. Best minimum rating of A- VIII.

**Commercial General Liability**

Contractor agrees to maintain Commercial General Liability at a limit of not less than $1,000,000 Each Occurrence, $2,000,000 Annual Aggregate. Coverage shall not contain any endorsement(s) excluding nor limiting Product/Completed Operations, Contractual Liability or Cross Liability. Contractor may satisfy the minimum liability limits required for Commercial General Liability or Business Auto Liability under an Umbrella or Excess Liability policy. There is no minimum per occurrence limit of liability under the Umbrella or Excess Liability; however, the Annual Aggregate limit shall not be less than the highest “Each Occurrence” limit for either Commercial General Liability or Business Auto Liability. Contractor agrees to endorse The Curators of the
University of Missouri, its officers, employees and agents as Additional Insured on the Umbrella or Excess Liability, unless the Certificate of Insurance state the Umbrella or Excess Liability provides coverage on a “Follow-Form” basis.

**Business Auto Liability** (If required in service performance) Contractor agrees to maintain Business Automobile Liability at a limit not less than $1,000,000 Each Occurrence. Coverage shall include liability for Owned, Non-Owned & Hired automobiles. In the event Contractor does not own automobiles, Contractor agrees to maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

**Workers’ Compensation & Employers Liability**
Contractor agrees to maintain Workers’ Compensation in accordance with Missouri State Statutes or provide evidence of monopolistic state coverage. Employers Liability with the following limits: $500,000 each accident, disease each employee and disease policy limit.

**Contract Language**
The Curators of the University of Missouri, its officers, employees and agents are to be Additional Insured with respect to the project to which these insurance requirements pertain. A certificate of insurance evidencing all coverage required is to be provided at least 10 days prior to the inception date of the contract between the contractor and the University. Contractor/Party is required to maintain coverages as stated and required to provide written notice of cancellation according to the policy provisions. The University reserves the right to request a copy of the policy. The University reserves the right to require higher limits on any contract provided notice of such requirement is stated in the request for proposals for such contract.

**Indemnification**
The Contractor agrees to defend, indemnify, and save harmless The Curators of the University of Missouri, their Officers, Agents, Employees and Volunteers, from and against all loss or expense from any cause of action arising from the Contractor’s operations. The contractor agrees to investigate, handle, respond to and provide defense for and defend against any such liability, claims, and demands at the sole expense of the Contractor or at the option of the University, agrees to pay to or reimburse the University for the Defense Costs incurred by the University in connection with any such liability claims, or demands.

The parties hereto understand and agree that the University is relying on, and does not waive or intend to waive by any provision of this Contract, any monetary limitations or any other rights, immunities, and protections provided by the State of Missouri, as from time to time amended, or otherwise available to the University, or its officers, employees, agents or volunteers.

Failure to maintain the required insurance in force may be cause for contract termination. In the event the Agency/Service fails to maintain and keep in force the required insurance or to obtain coverage from its subcontractors, the University shall have the right to cancel and terminate the contract without notice.

The insurance required by the provisions of this article is required in the public interest and the University does not assume any liability for acts of the Agency/Service and/or their employees and/or their subcontractors in the performance of this contract.
UNIVERSITY OF MISSOURI
DETAILED SPECIFICATIONS

SPECIFICS:

2000 KVA Rating
3 Phase
60 Hz
Padmounted
Dead Front
13,800 delta – 480Y/277 Volts (4 wire wye secondary)
Less-Flammable Liquid Filled
Switching Option A (Radial)

1. GENERAL:

The University of Missouri-Columbia is greatly interested in transformer loss reduction and will perform loss tests, in harmonically loaded environments when appropriate, on the supplied unit to determine the actual losses. The results of these tests will determine if the University will purchase future units from the supplier of the transformer tested.

University of Missouri-Columbia Energy Management Electric Distribution must approve the construction drawings prior to construction of each type of transformer supplied.

No load losses, full load losses and total losses shall be provided with the bid. At the time of the bid, the “Transformer Losses in Watts” data sheet must be completed for each type of transformer bid. The log sheet must be signed by a duly authorized officer of the bidding company, one who will guarantee the validity of the losses stated. Failure to return the signed data sheet can result in rejection of the bid. Losses will be considered in the bids evaluation using Total Ownership Cost. The following values will be used:

\[
\begin{align*}
\text{Transformer Purchase Price} & = A \\
\text{No Load Losses} \times \$ 6.40 /\text{Watt} & = B \\
\text{Load (Coil) Losses} \times \$ 2.78 /\text{Watt} & = C \\
\text{Total Ownership Cost} & = A + B + C
\end{align*}
\]

The bid will be awarded based on the unit with the lowest total ownership cost meeting these specifications. The lead time for delivery may also be included in the bid analysis and may be a factor in the award.

A certified test report of the 60Hz losses of all transformers supplied must be received by the University within fourteen (14) days after shipment. This report must show, at rated voltage, both no load and full load (coil) losses for each transformer supplied listed by manufacturer serial number.

The University reserves the right to test any transformer supplied. Failure to supply the requested data and guarantees shall result in disqualification of the supplier company. Failure of the transformer to perform as guaranteed in the bid will be sufficient reason to omit the associated supplier from future projects. The test...
information may also be used by the University for settlement of damages, i.e. a refund in an amount proportional to the losses in excess of the guaranteed value. If the actual losses are less than the guaranteed amount, the University will incur no additional costs.

All equipment shall conform to the latest revision of all applicable standards. A listing of these standards includes, but is not limited to, NEMA, DOE, NESC, NEC, ANSI and IEEE. The equipment will also comply with the applicable requirements of the "Federal Occupational Safety and Health Standards".

2. DESCRIPTION:

A. CONSTRUCTION

Transformer shall be Pad Mount construction in accordance with ANSI Standard C57, latest revision. Transformer shall be compartment type, liquid immersed, self cooled, with bolt-on covers. The transformer shall have high and low voltage compartments assembled side by side as an integral unit with no live parts accessible without opening the compartment doors. The high voltage compartment shall be located on the left. No bolts, screws or other fastening devices shall be externally removable. There shall be no openings where sticks, rods or other devices could be inserted and contact live parts. Compartments shall limit water entry and prevent accumulation and pooling of water.

Transformer must fit existing concrete pad as shown in sketch.

Equipment must be new, re-manufactured equipment will not be accepted.

Noise level of transformer shall be per IEEE/ANSI/NEMA standards and shall not exceed the levels given by NEMA TR1-1980.

Bottom sill of primary compartment shall have a hole capable of mounting a Fisher Pierce model 1515WB-12A3-10SL-B fault indicator. The hole shall have a permanent cover installed prior to shipping which can be removed only from the inside of the compartment.

Frame of transformer shall be supplied with jacking provisions and lugs for lifting. Enclosure and base constructed for sliding and rolling.

Enclosure shall be tamper proof with self starting penta head bolts. The secondary door shall include provisions for a lock which must be removed to remove the bolt. The primary door shall be separate and interlock with the secondary door in a manner which the secondary door must be opened first before the primary door can be opened. The primary door shall also be secured by at least two penta head bolts other than the bolts securing the secondary door. Minimum enclosure depth shall be 24 inches.

A clear, non-conductive, hinged barrier, with latching mechanism shall be installed in the low voltage compartment in a manner which will completely restrict access to the low voltage compartment. Barrier shall be clearly marked “Danger Arc Flash Hazard”.

RFB #22118 – 2000kVA Pad Mounted Transformer
Transformer shall be painted Munsell green #7.0GY3.29/1.5 with a minimum thickness of 2.5 MIL. A small container of touch up paint shall be supplied with the transformer and given to the University.

B. ELECTRICAL SPECIFICATIONS

Transformer shall be 3 Phase, 60 Hertz.

Transformer impedance shall be a **minimum of 5.42%** for installation in existing.

Primary Windings shall be constructed with copper conductors. Primary Windings should be transposed for reduced losses at fundamental (60Hz) and harmonic frequencies, if advisable per manufacturer. Primary windings shall be designed to withstand normal harmonic circulating currents without a K rating.

Secondary Windings shall be constructed with copper conductors. Secondary Windings should be transposed for reduced losses, at fundamental (60Hz) and harmonic frequencies, if advisable per manufacturer. Use smaller paralleled conductors instead of one larger cross-section single conductor or a single thin tape type of conductor. Individual conductors shall be insulated.

The core shall be made of steel core stock. It shall be constructed to reduce eddy current losses at fundamental and harmonic frequencies. The Core shall be designed to reduce losses due to both the fundamental and harmonic frequencies.

Neutral conductor shall be properly sized to handle up to 2 times the rated phase current.

All wiring connections shall be suitable for copper or aluminum.

C. INSULATING MEDIA AND RATINGS

Transformer shall have a maximum average winding temperature rise of 65 degrees C.

Winding insulation shall have a rating of 120 degrees C.

Transformer shall have an ambient temperature rating of 40 degrees C.

Transformer shall be filled with a less-flammable fluid. Mineral oil is not acceptable.

Liquid level indicator shall be supplied. It shall be located inside the low voltage compartment.

A drain valve and sampling device shall be installed in the primary compartment.

A pressure relief valve shall be supplied. Qualitrol series 201 pressure relief valve or approved equal for NEC code 450-23 application. Volume of valve must meet all applicable codes.

D. HIGH VOLTAGE COMPARTMENT

For **Switching Option A** - Transformer shall have three (3) - 15kV, 600A primary bushing wells, in
accordance with ANSI/IEEE standard 386 (ANSI standard C119.2), for a delta connection of 13,800V, dead front design with a 95kV BIL rating, and include a semiconductive coating that is solidly grounded to the tank.

For Switching Option B - Transformer shall have six (6) - 15kV, 600A primary bushing wells, in accordance with ANSI/IEEE standard 386 (ANSI standard C119.2), for a delta connection of 13,800V, dead front design with a 95kV BIL rating, and include a semiconductive coating that is solidly grounded to the tank.

Primary compartment shall be separated from the secondary compartment by a permanent metal barrier. **High voltage barrier inside enclosure shall be located within the limits shown in the sketch.**

Bushings shall have covers in place for shipping and storage.

Primary Voltage Taps shall be supplied to provide 2.5% no load tap changes, two above and two below the rated voltage.

Fusing shall consist of oil immersed bayonet expulsion fuses and in-tank, current limiting fuses. Bayonet fuses shall be removable with a hot stick. Current limiting fuses shall have an interrupting capacity greater than 40,000A. Fusing combination shall provide full range protection for low and high current faults. Three spare bayonet fuses shall be supplied with the transformer. (This totals six bayonet fuses.)

The let-through current of the in-tank current limiting fuse cannot exceed the interrupting rating of the switch specified.

**E.  LOW VOLTAGE COMPARTMENT**

The secondary voltage requirements and the delta or wye connection are specified in Section 1. Secondary bushings shall have a 30kV BIL rating with a tinned spade having a minimum of eight (8) 9/16” holes on 1-3/4” centers for conductor connections. Bushings shall be supported to the top of transformer to prevent oil leaking from the bushing due to the weight of the cables attached to them.

Four bushings shall be supplied for wye or three for delta connections. Typical voltages are as follows:

- 208Y/120, 4-wire wye connected
- 480Y/277, 4-wire wye connected
- 480V, 3-Wire delta connected

**F.  SWITCHING**

The desired option is specified in Section 1.

- **Option A** In-tank two position, load break radial switch on primary to turn the transformer on/off. Requires three (3) bushings.
- **Option B** Three 300A load break switches for loop configuration. This shall allow for transformer on/off and two line terminals each with on/off. Requires six (6) bushings.
G. GROUNDING

Three grounding connections, each with two (2) ½”-13 UNC tapped holes. One in the primary compartment, one in the secondary compartment and a third on the outside of the tank. A copper connection strap from the neutral to ground shall be supplied.

H. ENVIRONMENTAL

Noise level of transformer shall be per IEEE/ANSI/NEMA standards and shall not exceed the levels given by NEMA TR1-1980.

3. NAMEPLATE:

As a minimum, one nameplate shall be engraved and affixed to the inside of the secondary enclosure door. In addition to normal information, the following items shall be included on the nameplate of each unit:

1. kVA ratings.
2. Primary voltage.
4. BIL ratings.
5. Temperature ratings.
6. Primary and Secondary voltages for each tap setting.
7. Primary amperage rating for each tap setting.
8. Date of Manufacture.
9. Name of Manufacturer.
10. Transformer K factor (if rated)
11. Type of conductor in windings.
12. Impedance expressed in percentage.
13. Detail circuit diagrams of primary switch configuration and switch ratings.
14. Delta - wye or delta -delta diagram detailing the relationship of primary to secondary bushings.
15. Statement “Transformer filled with less-flammable fluid”.
16. Statement “Transformer filled with fluid containing no detectable PCB’s at time of manufacture.”
17. Total weight of unit expressed in pounds.
18. Weight of unit without oil.

4. LABELING:

Transformer shall have a blue "CONTAINS NO PCB’s" label placed inside of the secondary compartment door and another same label placed on the outside of the tank.

Transformer shall have a "Danger -High Voltage" label on the outside of the primary compartment door meeting all applicable standards.
Transformer shall have a “Secondary Barrier Installed” label installed on the outside of the secondary compartment door.

5. SHIPPING:

Shipping shall be F.O.B. University of Missouri-Columbia, Energy Management. Receiving by the University shall be during normal business hours Monday – Friday, 8:00am to 3:00pm. Notice shall be given 48 hours prior to arrival to allow arrangements to be made for receiving. Notice shall be given to Energy Management Electric Distribution Supervisor by calling (573) 882-3094 at least 48 hours prior to arrival on site.
Transformer Losses in Watts
Data Sheet

Manufacturer: ______________________________________________________

Project: ______________________________________________________

Transformer Information

<table>
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<tr>
<th>Transformer Type</th>
<th>kVA</th>
<th>High Side Voltage</th>
<th>Low Side Voltage</th>
<th>No Load Losses</th>
<th>Full Load Losses</th>
<th>Total Losses</th>
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Signed: ______________________________________________________________

Date: ________________________________________________________________

☐ BY CHECKING THIS BOX THE BIDDER ACKNOWLEDGES ALL SPECIFICATIONS CAN BE MET AND ALL REQUESTED INFORMATION PERTAINING TO QUALIFICATIONS IS ACCURATE.
**PRICING:**

**MANUFACTURER NAME** - __________________________________________________________

**MODEL NUMBER** - _____________________________________________________________

**ESTIMATED DELIVERY** - _______________________________________________________
SUPPLIER DIVERSITY PARTICIPATION FORM

The University of Missouri System is committed to and supports supplier diversity as an essential part of the University’s mission and core values. The University’s Supplier Diversity efforts reflect this mission.

Tier 2 Supplier Diversity Information - The University strongly encourages Supplier Diversity participation in all of its contracts for goods and services. Tier 2 Spend is spend reported by primary (non-diverse) suppliers of the University of Missouri who subcontract work to or make purchases from a diverse supplier. Depending upon the contract, primary (non-diverse) suppliers will be asked to submit Tier 2 information with Minority and Diverse Owned companies. Suppliers have two options in reporting Tier 2 dollars depending on the terms of the contract: Direct and Indirect.

- **Direct dollars** - those dollars directly spent with Women and Diverse Owned suppliers in the fulfillment of the contract.
- **Indirect dollars** - based on a percentage of revenue the University represents to the supplier. An example is as follows:
  
  1. Supplier's Total Revenues: $10,000,000
  2. Revenues from University $: $ 4,000,000
  3. University % of Total Revenues: 40% (#2 divided by #1)
  4. Total Minority and Diverse owned Dollars $: $ 400,000
  5. University % Attributable Revenue: 1% (#4 divided by #2)

1. Does your company have a Supplier Diversity Program? If so, describe efforts your company has made to increase business with Minority and Diverse Owned businesses (i.e. does your company have a policy statement, participate in outreach activities, promote diverse subcontracting, publicize bid opportunities, provide certification assistance, etc.)? Provide examples (use additional pages if needed):

2. If you are a non-diverse owned company, what percentage of your company’s total contracting and procurement spend for the prior year was with Minority and Diverse Owned businesses? __________ Are you able to provide this information specific to University of Missouri business? ______________

3. If you are a non-diverse owned company, complete the following table indicating the percentage your company will subcontract with certified Women and Diverse Owned businesses should your company be the successful bidder. Note: If your company does not plan to use Women and Diverse Owned businesses to fulfill your contract obligations, please explain why not.

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<th>Supplier Name</th>
<th>% of Contract</th>
<th>Specify Direct or Indirect</th>
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If there are questions regarding supplier diversity at the University, contact Teresa Vest, vestt@umsystem.edu.
ATTACHMENT B
SUPPLIER REGISTRATION INFORMATION

Completion of this section is strongly encouraged. Please review and check ALL applicable boxes.

SMALL BUSINESS CONCERN: _____Yes _____No
NOTE: The term “small business concern” shall mean a business as defined pursuant to Section 3 of the Small Business Act and relevant regulations issued pursuant thereto. Generally, this means a small business concern organized for profit, which is independently owned and operated, is not dominant in the field of operations in which it is bidding. We would consider any firm with 500 employees or less a “small business concern”.

WOMAN OWNED BUSINESS (WBE): _____Yes _____No
NOTE: A woman owned business is defined as an organization that is 51% owned, controlled and/or managed, by a woman. The determination of WBE status depends solely on ownership and operation and is not related to employment. The firm should be certified by a recognized agency (e.g., state, local, federal, etc.). Please see Public Law 106-554 for more detail.

MINORITY BUSINESS ENTERPRISE (MBE): _____Yes _____No
NOTE: A minority business is defined as an organization that is 51% owned, controlled and/or managed by minority group members. The determination of minority status depends solely on ownership and operation and is not related to employment. The firm should be certified by a recognized agency (e.g., state, local, federal, etc.). Please see Public Law 95-507 for more detail. Place an X by the appropriate space below.

_____ Asian-Indian - A U.S. citizen whose origins are from India, Pakistan and Bangladesh
_____ Asian-Pacific - A U.S. citizen whose origins are from Japan, China, Indonesia, Malaysia, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Thailand, Samoa, Guam, the U.S. Trust Territories of the Pacific or the Northern Marianas.
_____ Black - A U.S. citizen having origins in any of the Black racial groups of Africa.
_____ Hispanic - A U.S. citizen of true-born Hispanic heritage, from any of the Spanish-speaking areas Mexico, Central America, South America and the Caribbean Basin only.
_____ Native American - A person who is an American Indian, Eskimo, Aleut or Native Hawaiian, and regarded as such by the community of which the person claims to be a part.

VETERAN BUSINESS ENTERPRISE     _____Yes ______No

SERVICE-DISABLED VETERAN BUSINESS ENTERPRISE     _____Yes     _____No
NOTE: A Veteran or Service-Disabled Veteran business is defined as an organization that is 51% owned, controlled and/or managed by Veterans. The firm should be certified by a recognized agency (e.g., state, local, federal, etc.). Please see Public Law 109-461 for more detail.

MISSOURI FIRM: _____Yes _____No
NOTE: A Missouri Firm is defined as an organization which has and maintains within the State of Missouri a regular place of business for the transaction of their business.

SUPPLIER’S CERTIFICATION:
The undersigned hereby certifies that the foregoing information is a true and correct statement of the facts and agrees to abide by the laws of the State of Missouri and the rules and regulations of the University of Missouri System now in effect, including any subsequent revisions thereof. Supplier acknowledges that it is his/her responsibility to keep the information current by notifying the University of Missouri of any changes.

Signature of Person Authorized to Sign this Form:___________________________________________________
Title: ____________________________________________________    Date: _________________

RFB #22118 – 2000kVA Pad Mounted Transformer