

**SPECIFICATIONS  
AND  
BID DOCUMENTS  
FOR  
SINGLE PHASE PAD MOUNTED TRANSFORMERS  
FOR  
CITY OF OAK RIDGE, TN**

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**1.0 INVITATION TO BIDDERS**

Sealed bids will be received by the City of Oak Ridge, Tennessee at its office in Oak Ridge, Tennessee, until the date and time indicated, and immediately thereafter will be opened, and publicly read.

The City of Oak Ridge reserves the right to reject any or all bids and to waive any informalities or technicalities therein. The bid will be awarded to the lowest and best responsive bidder as determined by the Owner and Engineer.

No bidder may withdraw a bid for a period of sixty (60) days after the date set for opening of bids.

Specifications may be obtained from the Engineer. Only bids from approved manufacturers will be opened. Contact the Engineer for approval standards. Specifications may be examined at the office of the Engineer and at the office of the City of Oak Ridge, Tennessee.

OWNER/ENGINEER: City of Oak Ridge, Tennessee  
Electric Department  
100 Woodbury Lane  
Post Office Box 1  
Oak Ridge, TN 37831-0001  
ATTN: Keith Atkins  
TEL: 865 425 1842  
FAX: 865 482 8313  
Email: [katkins@oakridgetn.gov](mailto:katkins@oakridgetn.gov)

PROJECT / PACKAGE : SINGLE PHASE PAD MOUNT TRANSFORMERS – RFQ #158655  
BID DATE: 2:00 PM, Thursday, August 9<sup>th</sup>, 2018

**2.0 INSTRUCTIONS TO BIDDERS**

- 2.1 You are invited to submit a Proposal for single phase pad mount transformers for the City of Oak Ridge, Tennessee.
- 2.2 The Owner does not obligate itself to accept the lowest or any other bid and specifically reserves the right to reject any and all bids. Partial award of units listed may be made at the Engineers discretion.
- 2.3 The Bidder shall provide all information requested. The Bidder shall take care to complete all portions of the Proposal documents and to provide all required submittals. Failure to comply may result in the rejection of the bid.

Bidder shall return two (2) signed and priced copies of the Proposal documents and all submittals required at the time of the Proposal to:

City of Oak Ridge  
Electric Department  
100 Woodbury Lane, Oak Ridge, Tennessee 37830  
P.O. Box 1, Oak Ridge, Tennessee 37831

**ATTN: Lyn Majeski, Materials Management**

Sealed and marked in the lower left corner:

**"SEALED BID for SINGLE PHASE PAD MOUNT TRANSFORMERS  
Confidential - To be delivered to addressee unopened"**

***WARNING: FAILURE TO FOLLOW INSTRUCTIONS REGARDING LABELING AND SEALING OF YOUR BID WILL RESULT IN AUTOMATIC REJECTION OF THE BID. DO NOT FAX BIDS. DO NOT EMAIL BIDS. DO NOT SEND BIDS IN OVERNIGHT SERVICE ENVELOPES, WITHOUT THE PROPER OUTSIDE LABELING.***

- 2.4 No proposal security will be required to accompany proposals.
- 2.5 The Owner invites cost saving and schedule improving alternatives. **A Bidder shall first complete the Proposal as issued by the Owner;** Bidder may then submit the alternatives referenced to the base proposal.
- 2.6 If the Bidder requires additional information or is in doubt as to the meaning of any part of the Contract documents, Bidder may telephone or submit a written request to the Engineer for such information or clarification. For questions to be answered, they must be received at least seven (7) days prior to the Bid due-date. Addenda may be issued as deemed necessary by the Engineer.
- 2.7 For further information, Bidders shall contact the Engineer.
- 2.8 The Engineer will represent the Owner in all matters pertaining to the project, including but not limited to, answering technical questions of prospective bidders, bid evaluation

and recommendation, review and approval of fabrication drawings and similar documents, and approval of invoices prior to payment by the Owner.

- 2.9 The terms Purchaser and Owner shall refer to the City of Oak Ridge. The terms Bidder, Seller and Manufacturer shall refer to the supplier of the equipment described by the documents.
- 2.10 If these specifications call for material, equipment or manufacturing procedures different from the Manufacturer's standard, the Manufacturer shall clearly identify all deviations or substitutions in this bid. When possible, the Manufacturer should bid according to the specifications with the Manufacturer's standard as an option.
- 2.11 Equal shall mean a satisfactory equivalent as approved solely by the Engineer.
- 2.12 Proposals should include Manufacturer's best delivery date for each type unit.
- 2.13 The Bidder shall clearly state all exceptions to this specification. Unless specifically stated otherwise, the Bidder shall furnish equipment, material and services in exact accordance with this specification, and any modifications to equipment, material and services necessary to comply with this specification shall be made by the Bidder at no additional cost to the Purchaser.
- 2.14 **The Bidder shall include on the proposal form firm pricing, firm delivery ARO, and guaranteed loss information.**
- 2.15 The cost to furnish any and all prints, drawings, diagrams, instruction manuals, cutsheets, AutoCad electronic files, reports, and certified test reports shall be included in the bid process and shall not be listed as a separate item.
- 2.16 All requested options, devices, and equipment are required and expected per the specifications, and the cost to furnish fully operational equipment with explanatory documentation shall be included in the bid process and shall not be listed as separate items.
- 2.1.7 Each Bidder shall complete the following Drug-free Workplace Affidavit as part of the submitted proposal.

**DRUG-FREE WORKPLACE AFFIDAVIT**

STATE OF \_\_\_\_\_ )  
 )  
COUNTY OF \_\_\_\_\_ )

The undersigned principal officer of \_\_\_\_\_, an employer of five (5) or more employees, contracting with the City of Oak Ridge, Tennessee, to provide construction services, hereby states under oath as follows:

1. That the undersigned is a principal officer of \_\_\_\_\_, hereinafter referred to as the "Company," and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to Tennessee Code Annotated § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services or who is awarded a contract to provide construction services or who provides construction services to the state or local government to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9 of the Tennessee Code.
3. The Company is in compliance with Tennessee Code Annotated § 50-9-113.

***Further affiant sayeth naught.***

***Principal Officer*** \_\_\_\_\_

State of \_\_\_\_\_ )  
 )ss.  
County of \_\_\_\_\_ )

Before me personally appeared \_\_\_\_\_ with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence) and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and official seal this \_\_\_\_\_ day of \_\_\_\_\_, 2010.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_.

### 3.0 TERMS AND CONDITIONS

#### 3.1 Acceptance; Entire Agreement

Acceptance of this order by acknowledgement, shipment or other performance shall be expressly limited to the terms and conditions contained in this order. Any additional or different terms or conditions proposed by the Seller are objected to and are hereby rejected. Upon acceptance, the terms contained in this order shall constitute the entire agreement between Seller and Purchaser with respect to the subject matter of this agreement (hereinafter referred to as the "Agreement") and may not be modified, added to, or rescinded except by a written document signed by Seller and Purchaser.

#### 3.2 Assignment and Setoff

The Seller shall not assign any right or interest under this Agreement nor delegate any work or other obligation to be performed or owned under this Agreement without the prior written consent of Purchaser. Any attempted assignment or delegation in contravention of this provision shall be void. Purchaser shall be entitled to set off any amounts owed by Seller to Purchaser against any amounts payable to Seller.

#### 3.3 Delivery Terms

All goods ordered hereunder **shall be shipped F.O.B. destination**, unless otherwise agreed. No charge will be allowed for packing, crating, freight, express, or cartage, unless agreed to and specified on this order. This order shall not be filled at prices higher than last quoted or charged without proper authorization.

#### 3.4 Payment

Upon the shipment of any material hereunder, the Seller shall submit to the Purchaser a detailed invoice duplicate of the materials shipped. Within 30 days after written acknowledged receipt, the Purchaser shall make payment thereof to the Seller. No payment will be made for incomplete items or where invoicing does not comply with the requirements of 5.9.3, titled 'Payment'.

#### 3.5 Time of Performance

Time is of the essence of this Agreement. If tender of conforming goods is not made by the delivery date quoted or services are not completed by the completion date quoted, Purchaser may treat such failure as a breach hereof and will have all remedies afforded to it by law including, but not limited to, the rights to recover. **Failure to keep commitments made in the proposal will have a direct bearing on manufacturer's status on the approved supplier list.**

#### 3.6 Identification; Risk of Loss

Identification of the goods ordered herein shall occur at the moment this order is accepted by Seller. Risk of loss shall pass to the Purchaser at the time that conforming goods to

the Agreement are confirmed received at the Delivery Site.

### 3.7 Infringement

Seller shall indemnify Purchaser and Purchaser's customers for any and all loss, damage, expense, (including but not limited to attorney's fees) claims or liability arising out of any infringement or claim of infringement of any patent, trademark, copyright, trade secret or other proprietary interest based on the manufacture, installation, normal use, lease, or sale of any service of material furnished to Purchaser under this Agreement. Purchaser shall notify Seller promptly of any such claim or infringement and Seller shall, at its own cost, defend, compromise, or settle, any such action or actions to satisfy and discharge the same without any cost or expense whatsoever to the Purchaser.

### 3.8 Warranties

Seller warrants to Purchaser that material furnished will be merchantable, fit for Purchaser's intended purposes and free from defect in design, material and workmanship and will conform to and perform in accordance with Purchaser's drawings and specifications and will be safe for its intended use. Seller also warrants to Purchaser that services will be performed in a first class workmanlike manner consistent with accepted industry standards. In addition, if material furnished contains one or more manufacturers' warranties, Seller hereby assigns such warranties to Purchaser. All warranties shall survive inspection, acceptance and payment. Material not meeting the warranties shall at Purchaser's option be repaired, adjusted or replaced by Seller at no cost to Purchaser. Services not meeting the warranties shall at Purchaser's option be reperformed by Seller at no cost to Purchaser. Such remedies shall be available to Purchaser in addition to all others afforded to it at law or equity.

### 3.9 Rejected Goods

Purchaser shall give notice to Seller of any rejection of goods, and goods rejected will, at Seller's expense, be returned to Seller or otherwise disposed of as Seller may reasonably request. Payment for the goods prior to inspection and approval shall not constitute acceptance thereof. Neither Purchaser's inspection nor its failure to inspect the goods delivered hereunder shall release Seller from its warranties and obligations under this Agreement.

### 3.10 Termination

A) Purchaser may terminate this Agreement for default upon notice to Seller if: 1) Seller fails to comply with any of the terms and conditions of this Agreement, including failure to deliver goods or perform services required within the time specified in this Agreement; 2) at any time reasonable grounds for insecurity arise with respect to Seller's expected performance and Seller fails to furnish adequate assurance of due performance within ten (10) days after a written demand by Purchaser for such adequate assurance; 3) Seller shall become insolvent or make an assignment for the benefit of creditors; or 4) Seller shall file a voluntary petition in bankruptcy or insolvency or shall be involuntarily petitioned into bankruptcy or insolvency.



- B) Purchaser may terminate this Agreement, in whole or in part, for its convenience, at any time by giving written notice to Seller, and Seller shall promptly comply with the directions contained in such notice. In such event, Purchaser shall make payment to Seller for all costs incurred by Seller prior to such termination reasonably allocable to this Agreement under recognized accounting practice, less any scrap or salvage value.

### 3.11 Liens

Seller shall promptly pay for all materials, supplies and labor employed by it in manufacturing the ordered goods to the end that such goods may be kept free from Materialmen's, Warehousemen's and Mechanics' liens. Seller shall promptly discharge any such liens arising from the performance of this Agreement.

### 3.12 Indemnity of the Purchaser

The Seller shall indemnify and hold Purchaser and its officers, employees, and agents harmless from and against all suits or claims that may be based upon any alleged injury to or the death of any person or damage to property that may occur or that may be alleged to have occurred in the course of performance of this Agreement whether or not such claim is made by a third person, except when it shall be proved that the alleged injury was caused solely by a negligent act or omission of the Purchaser. Seller shall, at its own cost and expense, pay all costs and expenses of such suit or claim, including attorney's fees in connection therewith, and if any judgement shall be rendered against the Purchaser in any such action or actions the Seller shall satisfy and discharge the same without cost or expense to Purchaser.

### 3.13 Compliance with Laws

Seller and all material furnished by Seller shall fully comply with all federal, state, and local laws, ordinances, regulations, orders and codes, including identification and procurement of required permits, certificates, approvals and inspections in performance hereunder. Any provision required to be included in this Agreement by any such law, rule or regulation shall be deemed to be included herein. The Equal Opportunity Clause contained in Executive Order 11246 as amended, relating to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin, the Affirmative Action Clause contained in 41 C.F.R. Chapter 60.250 relating to affirmative action obligations to disabled veterans and to veterans of the Vietnam Era, and the Affirmative Action Clause contained in 41 C.F.R. Chapter 60.741 relating to affirmative action obligations to handicapped workers, are incorporated herein by reference. The Seller also certifies that it does not engage in and requires that its subcontractor's (if any) employees or agents not engage in, any form of discrimination based on race, color, religion, sex or national origin. Seller agrees to indemnify Purchaser for any loss or damage that may be sustained by reason of any failure to do so.

### 3.14 Labeling

All goods and materials to be supplied by Seller under this Agreement shall be labeled in

accordance with the requirements of the Federal Occupational Safety and Health Act Hazard Communication Standard (29 CFR 1910.1200) and/or applicable State law or standard of similar effect. Seller shall immediately send to the Purchaser, referencing this purchase order number, all required written safety information materials including without limitation, Material Safety Data Sheets, required under said standards.

3.15 Non-Waiver

No course of dealing or failure of either party to strictly enforce any term, right or condition of this Agreement shall be construed as a waiver of such term, right, or condition.

3.16 Choice of Law

The construction, interpretation and performance of this Agreement and all transactions under it shall be governed and resolved in accordance with the laws of the State of Tennessee.

3.17 Notification

The Manufacturer shall acknowledge in writing to the Engineer that the Owner's Purchase Order or acceptance has been received within 5 days ARO. The acknowledgement shall include the date that the Purchase Order or acceptance is received and the date that equipment delivery is expected.

3.18 Terminology

The terms "shall" and "will" which appear in the Proposal and specifications place an absolute obligation on the Manufacturer to do that which is designated and/or specified.

3.19 Taxes

City of Oak Ridge, Tennessee is exempt from sales tax.

#### **4.0 EQUAL OPPORTUNITY PROVISIONS**

- 4.1 This Contract is subject to the provisions of Section 202 of Executive Order Number 11246 of September 24, 1965 as amended relating to Equal Opportunity and to the Affirmative Action requirements of 41CFR60. The Contractor will at all times abide by the equal opportunity provisions of the Civil Rights Act of 1964 as amended.
- 4.2 No Respondent to this request shall in any way, directly or indirectly, discriminate against any person because of race, creed, color, national origin, religion, age, sex, sexual orientation, disability or other legally protected status. This requirement includes the process for selection and retention of subcontractors, procurements of materials and leases of equipment. The City of Oak Ridge encourages the utilization of minority and women-owned businesses in its contracting and subcontracting projects and the Contractor is encouraged to actively solicit the participation of these businesses. The Contractor shall inform its subcontractors and vendors of this requirement and shall ensure compliance therewith.
- 4.3 Each Bidder shall complete the following Equal Opportunity Compliance Certificate as part of the submitted proposal.

**EQUAL OPPORTUNITY  
COMPLIANCE CERTIFICATE**

We hereby certify:

As a(n): \_\_\_\_\_ Division of Parent Company \_\_\_\_\_  
\_\_\_\_\_ Subsidiary  
\_\_\_\_\_ Affiliate Address \_\_\_\_\_  
\_\_\_\_\_ Separate Corporation \_\_\_\_\_

And being: \_\_\_\_\_ a Small Business (Ref: ASPR-1-701-1)  
\_\_\_\_\_ Minority Owned Business (Ref: 41CFR-1.701-1)  
\_\_\_\_\_ from a Labor Surplus Area (Ref: 41CFR 1-1.801-1);

Having \_\_\_\_\_ employees in all divisions, subsidiaries, affiliates and parent (number) company;

That we shall comply with the applicable portions of the Equal Opportunity Clause as promulgated under Executive Order 11246, September 24, 1965 as amended, and all other federal laws and regulations pertaining to the Equal Employment Opportunity and Affirmative Action obligations of Federal Government Contractors, and shall submit the required compliance reports, and shall maintain non-segregated facilities.

Supplier \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Signature of Authorized Representative \_\_\_\_\_

Date of Signing \_\_\_\_\_

## 5.0 SINGLE PHASE PAD MOUNTED TRANSFORMERS

### 5.1 Standards:

The primary standards to which this equipment shall be constructed and tested are:

- 1.1 National Electric Code
- 1.2 American National Standards Institute
- 1.3 National Electric Safety Code
- 1.4 American Society for Testing Materials
- 1.5 Institute of Electrical and Electronic Engineers
- 1.6 National Electrical Manufacturers Association
- 1.7 All applicable local codes

### 5.2 Drawings and Data

The Manufacturer shall submit a **complete schedule** within ten (10) days ARO to the Engineer. This schedule will reflect the commitments submitted with the proposal. This schedule shall indicate the starting dates, dates of completion, and date the unit(s) will ship. The timely submission of Manufacturer's record drawings and test data is as important as manufacture and delivery of equipment and hardware, and shall be considered in determining the award.

5.2.1 Each drawing and instruction book furnished shall be clearly marked to identify the Owner's location as follows:

City of Oak Ridge, Tennessee  
Single Phase Pad Mounted Transformer

5.2.2 Submittals shall consist of, but are not limited to, the following:

1. Net weight of transformer
2. Dimensions or dimensioned drawing of transformer
3. Transformer impedance
4. No load losses
5. Full Load losses
6. Total losses at rated KVA
7. Exciting current at 100% and 110% voltage
8. Transformer regulation at 1.0 and 0.8 PF
9. Nameplate Data / Ratings
10. Installation Instructions
11. Operating Instructions
12. Maintenance Instructions

**The bidder shall submit with bid, nameplate data, general outline dimensions and other standard information for the transformer proposed, including the guaranteed values**

**of Items No. 3 through No. 6, listed above.**

Two sets of the certified test reports shall be supplied for each unit and shall include as minimum the information defined in [section 5.7.2](#) of this specification.

### 5.2.3 Submittal Process

The Manufacturer shall submit to the Engineer two (2) copies of shop drawings of the specified equipment with his proposal. Each submittal shall be clearly marked with the project name, date, and accompanied by a letter of transmittal listing all items included in the submittal.

1. The Engineer will review, mark and date all submitted shop drawings. One (1) set will be returned to the Manufacturer with the purchase order and the remaining set will be retained by the Engineer. Manufacturer shall make corrections and changes as indicated.

2. The Manufacturer shall resubmit shop drawings as required until satisfactory review has been obtained. Corrections and/or changes indicated on shop drawings by Engineer/Owner shall not be considered as an extra work order.

3. After satisfactory "Reviewed" or "Reviewed As Noted" has been obtained for all shop drawings, two (2) copies of shop drawings marked "FOR CONSTRUCTION" shall be furnished to the Engineer/Owner within 10 days of receipt of approval drawings by Manufacturer.

4. Review of shop drawings by the Engineer will be general only, and such review will not relieve the Manufacturer of responsibility for accuracy of such shop drawings, proper fitting, coordination, construction of work, and furnishing of materials required by the specifications but not indicated on shop drawings. Review of shop drawings shall not be construed as approving departures from the Specifications.

5. Prints, exclusive of reproducibles, shall be folded to 8 /12" x 11" for submittal.

6. All technical correspondence shall be sent to the Engineer.

5.2.4 Final instruction books (**two sets**) shall be provided to the Engineer, and as a minimum shall contain the following information:

1. The items listed in [Section 5.2.2](#).

2. All drawings approved by Purchaser for the particular unit(s) furnished.

3. Bill of Material, indicating model number of EVERY item.

4. Instruction Leaflets and Cutsheets, with pertinent model

numbers clearly indicated.

5. Information for ordering parts.
6. Certified test reports shall be shipped simultaneous to shipping of the unit(s).
7. One (1) electronic copy of all drawings shall be provided in AutoCAD. Mylars of all final drawings and data shall be provided.
8. Instruction books shall be enclosed in an adequately sized **three ring binder.**

### 5.3 Shipping

- 5.3.1 Unit(s) shall be furnished F.O.B. Destination, Freight Prepaid and Allowed at the destination indicated. Unloading will be provided by the Owner.
- 5.3.2 Manufacturer shall be responsible for obtaining necessary permits, providing and verifying routing and, in general, making all the necessary arrangements for transporting the equipment provided to Purchaser's destination.
- 5.3.3 Any material to be mounted in the field shall be packed in a separate box with a packing list attached outside. Another packing list shall be placed inside the box. Lists shall clearly identify components contained in the box.
- 5.3.4 No incomplete or partial or unfinished shipments shall be accepted or received without written permission from the Engineer.
- 5.3.5 Manufacturer shall provide twenty four (24) hours advance notice to the Engineer of the exact time delivery will be made at destination, along with information listed in 5.3.6 below.

5.3.6 The manufacturer shall, at the time arrangements for delivery are to be made, inform the Engineer of:

- |                |   |
|----------------|---|
| purchase order | a. Purchase Order Number                  |
| "ship to:"     | b. Number of items being shipped per      |
|                | c. Weight of each item (heaviest)         |
|                | d. Estimated time of arrival              |
|                | e. Location of use ("to be used for:" not |
|                | f. Serial Number                          |

- 5.3.7 Delivery is desired ASAP and will be a factor of award. Manufacturer is encouraged to ship units as soon as they become available.

5.3.8 Units shall be placed on hardwood pallets with skids sized to facilitate handling with forklifts.

- 5.3.9 Units shall be loaded from the rear of the trailers for shipment to facilitate unloading onto receiving docks with forklifts.

- 5.3.10 Units may be unloaded with overhead cranes and shall be shipped on flat-bed trailers without sides. Canvas-topped trailers are **NOT** acceptable. **Any transformer shipments not meeting this requirement may be returned to the manufacturer at CORED's discretion without cost to the City of Oak Ridge.**

#### 5.4 **GENERAL REQUIREMENTS**

5.4.1 These specifications cover electrical characteristics and mechanical features of outdoor, two bushing, single-phase, 60 Hertz, oil immersed, self-cooled, pad mounted type distribution transformers rated 250 kVA and smaller. High voltages include 7620/13200Y Volts. Amorphous Core units are not acceptable. Typical low voltages include 120/240, 240/480, 277, and other voltages as may be specified in the proposal form.

5.4.2 The transformer impedance shall be no less than 2.0 %.

5.4.3 Each transformer shall be equipped with manufacturer's standard pressure relief device.

5.4.4 **Copper (Cu) conductor shall be utilized in the primary windings.** Either Copper or Aluminum shall be utilized in the secondary voltage windings and the secondary voltage leads, which connect to bushings. Any deviations to the winding and lead material must be submitted as an alternate.

5.4.5 Labels and/or ID's shall be included on the outside portion of the front compartment door. Locations are as follows:

1. The "NON-PCB" label shall be affixed directly above the Pentahed security system.
2. Above (1) the secondary voltage rating of the transformer shall be included, a minimum of 1 ½" in height. (120/240, 240/480, etc.)
3. Above (2) the kVA rating of the transformer shall be included, a minimum of 2 ½" in height. (15, 25, 37.5, etc.)
4. A minimum of 6" to the left of (3) the "Shock in a Box" label shall be included.
5. Shock in a Box labels shall be affixed to the transformer both outside and inside of the compartment door.

5.4.6 Nameplates shall be of type A, with the following clarification(s): Total mass in pounds (lb.) and volume of oil (gallons) shall be included on all nameplates, regardless of kVA size.

5.4.7 The nameplate shall show the Bay-O-Net draw out fuse and current limiting fuse arrangement in the transformer circuit one-line. It shall also show the type, size, and make of current limiting fuse and shall identify the manufacturer of the draw-out fuse.

5.4.8 The color of the unit shall be Munsell #7GY 3.29/1.5, and the paint process shall meet the latest EEI guidelines.

#### 5.5 **CONSTRUCTION**



- 5.5.1 Suitable means shall be provided for padlocking the compartment door, including a Pentahead security system.
- 5.5.2 The pad mounted transformer shall have a flip up type door that is attached to the unit with stainless steel hinges. The door shall be removable when in the open position.
- 5.5.3 The base dimensions of the transformer measured at the ground line shall in no case be less than 35 ½ inches by 29 ½ inches and shall in no case be greater than 42 inches by 42 inches. This is to insure that the transformer will fit on a standard HL-45 type fiberglass box/pad.
- 5.5.4 The unit shall have two high voltage externally replaceable bushing wells with 200 ampere load break bushing inserts which shall be ESNA or an approved equal. The bushing wells shall be externally clamped type with Buna-N gaskets.
- 5.5.5 Transformers rated 15kVA through 100kVA shall be of the type 2 bushing arrangement, Figure 2(b) of ANSI C57.12.25 – latest revision date.
- 5.5.6 Transformers rated in excess of 100kVA shall be of the type 1 bushing arrangement, Figure 1(b) of ANSI C57.12.25 – latest revision date.
- 5.5.7 The low voltage line and neutral terminals for both type 1 and 2 arrangements shall be as Figure 4(c) of ANSI C57.12.25 – latest revision date.
- 5.5.8 The low voltage neutral terminal may be grounded directly to the tank or fully insulated and with a removable ground strap. The ground strap shall be adequate to carry transformer maximum fault current.
- 5.5.9 The transformer shall be furnished with a Kearney or General Electric Company current limiting fuse in series with an RTE Bay-O-Net type draw out fuse holder and a Kearney Dual Element fuse link. Fuses shall be appropriate size for transformer rating. The current limiting fuse shall be attached to the loop feed bus and ahead of the dual element fuse feeding the primary winding.
- 5.5.10 RTE Bay-O-Net fuse holder shall be equipped with flapper type valve to insure oil is not lost should fuse be removed while transformer tank is under positive pressure.
- 5.5.11 Each unit shall be equipped with oil drip guard mounted under Bay-O-Net fuse holder to protect high voltage terminations from oil leakage.

## 5.6 **TRANSFORMER OIL**

The transformer shall be filled with Type II mineral oil. The oil shall be certified to contain less than one part per million (1 PPM) Polychlorinated Biphenyl's (PCB's) as measured on a dry weight basis. A notice to this effect (compliance with EPA's regulations regarding PCB content of dielectric oil) shall be included on the transformer nameplate. A non-PCB label shall be attached to the unit, just below the Voltage rating of the unit.

## 5.7 **TESTING**

- 5.7.1 The transformers furnished under the specification shall be manufactured and tested in accordance with the current issues of NEMA and ANSI standards for distribution

transformers, except as may otherwise be specified herein, and shall be in all respects manufactured in accordance with good practice.

5.7.2 Two copies of the certified test reports, which shall include both quoted and actual values, shall be provided prior to, or with the shipment, of each transformer. Minimum information to be included in each Certified Test Report shall follow that listed as Appendix to Part 1 of ANSI C57.12.90, latest revision. **Delivery is not complete until Engineer has received certified test reports.**

## 5.8 EVALUATION OF LOSSES AND DELIVERY

5.8.1 Losses shall be evaluated in the appraisal of the bids on self-cooled basis as follows:

Evaluated Cost = Quoted Unit Price +  $\frac{\$NL \text{ Value}}{\text{Full Load Losses (Watts)}}$  X No Load Losses (Watts) +  $\frac{\$LL \text{ Value}}{\text{Full Load Losses (Watts)}}$  X Full Load Losses (Watts). Manufacturer is required to extend each unit price utilizing the above formula on the proposal form. An electronic copy of "Attachment: PROP-FORM" is available upon request.

Transformers which are delivered with no load or total losses higher than quoted may be rejected at the pleasure of CORED. If we choose to keep the unit, failure to meet guaranteed losses ( no load or total) will result in application of a deduct on the invoice in accordance with the following :

**\$100 per unit** which fails to meet manufacturer's guarantee.

5.8.2  $\frac{\$NL \text{ Value}}{\text{Full Load Losses (Watts)}}$  = \$ 5.65 and  $\frac{\$LL \text{ Value}}{\text{Full Load Losses (Watts)}}$  = \$ 1.80.

5.8.3 The transformer loss data desired is the guaranteed value of each unit of each voltage class and kVA size. **This specification prevails over ANSI C57.** The Engineer will not go through the exercise of averaging loss values by unit type. Manufacturers are strongly encouraged to quote loss values they are confident will be met by each unit. There shall be no tolerance value associated with exceeding the quoted loss value.

5.8.4 Delivery times shall be as soon as possible and will be a factor considered in the evaluation.

5.8.5 One set of removable lifting eyes for every shipment of units received shall be furnished.

## 5.9 QUALIFICATIONS, INSPECTION, ACCEPTANCE, AND PAYMENT

### 5.9.1 Qualifications

In order for a supplier to receive consideration, it will be necessary to furnish and submit the information listed in the letter of Pre-Approval and Qualification. Pre-approved, qualified bidders must comply with and pass all of CORED's requirements for transformer manufacturers. Contact the Engineer for the above information, if you are not on the approved list. At this time, the following companies are on the approved list: **ABB/Power Partners, G.E., Howard, Cooper, Ermco, Pauwels and Maloney Electric.**

### 5.9.2 Inspection and Acceptance

5.9.2.1 All transformers furnished under this specification will be

inspected and tested upon delivery. CORED shall, at all times, have the right to inspect the transformers during manufacture and witness such tests from time to time as CORED may deem advisable and or necessary.

**5.9.2.2 Delivery of the units shall not be considered complete, nor shall the unit be considered accepted, without Certified Test Reports.**

5.9.2.3 After the transformer designs have been approved by CORED, no transformer shall be furnished or accepted if changes are made by the manufacturer in any respect.

### 5.9.3 Payment

5.9.3.1 All invoices submitted to CORED for payment shall include as a minimum the following information:

1. The City of Oak Ridge Purchase Order Number,
2. The City of Oak Ridge Transformer ID Number, and
3. The manufacturer's serial number.

CORED will not approve payment of any invoice which is submitted without the above information.

5.9.3.2 No payment shall be considered or approved until delivery of the unit is complete and the unit is accepted.

## 5.10 **ALTERNATE ARRANGEMENTS OR EXCEPTIONS TO SPECIFICATIONS**

5.10.1 Bidders shall state all exceptions to these specifications. **An exception to the specification is grounds for rejection of the bid.** CORED may choose to review and consider alternate arrangements, provided complete information for evaluation is included with the alternate bid.

5.10.2 No bid will be accepted from an approved manufacturer without complete information for evaluation, including drawings and other information requested herein.

5.10.3 The terms and conditions of this specification shall prevail. Substitution of manufacturers terms and conditions shall not be entertained. If manufacturer has a specific term or condition that is not in compliance with those specified in this document, he shall list each under 'exceptions to the specification'. Exception to the specification is grounds for rejection of the bid.

## 5.11 **DEVIATIONS**

5.11.1 CORED shall inspect and test each shipment of transformers to ensure that each transformer received conforms to this specification.

5.11.2 Any transformers received that do not comply with this specification in its entirety shall be rejected and returned at the manufacturer's expense.

5.11.3 Failure to comply with this specification in its entirety shall result in the manufacturer's immediate removal from CORED approved manufacturers listing.

## **6.0 PROPOSAL**

In submitting this Proposal, the Manufacturer agrees as follows:

The proposal as set forth herein is firm if accepted by the Owner within sixty (60) days and shall include the cost of delivery to the job site or warehouse (Delivery Site).

Owner will provide unloading at the site.

The equipment shall be delivered to the Delivery Site on or before the Delivery Date. Include delivery ARO with proposal.

Title of equipment shall pass to the Owner once the equipment has been delivered, satisfactorily inspected for transit damage, and conformance to specifications verified including guaranteed losses.

The Manufacturer agrees that all requests for time extensions shall be in writing, and that only such time extensions as are granted by the Owner in writing shall be considered.

**PROPOSAL FORM**

TO: CITY OF OAK RIDGE, TENNESSEE

Project / Package : Single Phase Pad Mounted Transformers

Delivery Site : City of Oak Ridge warehouse at 100 Woodbury Lane, Oak Ridge, TN 37830.

**Failure to fill out the form is grounds for rejection of bid!**

Did you take any exceptions? Yes \_\_\_\_\_ No \_\_\_\_\_

Shipment is F.O.B point of delivery? Yes \_\_\_\_\_ No \_\_\_\_\_

EEO Form Included? Yes \_\_\_\_\_ No \_\_\_\_\_

Drug-free workplace affidavit included? Yes \_\_\_\_\_ No \_\_\_\_\_

Two copies of all submittal drawings included? Yes \_\_\_\_\_ No \_\_\_\_\_

Firm delivery ARO? Yes \_\_\_\_\_ No \_\_\_\_\_

Warranty Description Included? Yes \_\_\_\_\_ No \_\_\_\_\_

Proposal Valid for **60** days ? Yes \_\_\_\_\_ No \_\_\_\_\_

List Addenda Received: No. \_\_\_\_\_ Dated \_\_\_\_\_  
No. \_\_\_\_\_ Dated \_\_\_\_\_

**2018 Single Phase Pad Mounted Transformer Order**

Item	Order Quantity	Transformer ID#	kVA	Unit Price	Guaranteed Losses (watts)		No load X \$5.65	Load x \$ 1.80	*Extended Price	Delivery
					No Load	Load				Weeks ARO
1	5	1-PAD-15-120/240	15							
2	15	1-PAD-25-120/240	167							
3	10	1-PAD-37.5-120/240	37.5							
4	20	1-PAD-50-120/240	50							
5	3	1-PAD-75-120/240	75							
	53									

\* **Extended Price = (Unit Price + (No load losses x \$5.65) + (load losses X \$1.80)) x Quantity**

**Guaranteed losses are for each unit, not an average by type or shipment !**

**\$100 deduct will apply to each unit accepted that does not meet guaranteed losses.**

**Units may be delivered as they become available. There is no requirement for simultaneous delivery of all units.**

**Manufacturer:** \_\_\_\_\_

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

**Signed By:** \_\_\_\_\_

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

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

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

**email:** \_\_\_\_\_

**Fax Number:** \_\_\_\_\_

**Document** 2018-1PADXFMR.xls

We reserve the right to break up the award between several manufacturers. Example: 15 kVA units to manufacturer A, remaining units to manufacturer B.

We reserve the right to increase the quantity of any item when we make the purchase. Example: Instead of buying three of item 5, we might choose to buy six.