

SPECIFICATIONS

AND

BID DOCUMENTS

FOR

**SUBSTATION APPARATUS RETROFIT/REGULATORS & CONTROLS**

CITY OF OAK RIDGE, TN

Bids due by 2:00 P.M.  
July 6, 2017

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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 below, 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 & Engineer. The award may be split between Vendors if the engineer's evaluation of the proposals demonstrates doing so is in the Owner's best interest.

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

Specifications may be obtained at the address below. Only bids for an approved manufacturer will be accepted. Contact the Engineer for approval standards.

Specifications may be examined in the Materials Management Office or in the Electric Department Office. Both offices are located at the address below.

OWNER: City of Oak Ridge, Tennessee  
100 Woodbury Lane  
Oak Ridge, TN 37830

ENGINEER: Margaret Elgin P.E.  
TEL: 865 425-1818  
FAX: 865 482 8313  
Email: [melgin@oakridgetn.gov](mailto:melgin@oakridgetn.gov)

PROJECT / PACKAGE: SUBSTATION APPARATUS RETROFIT/REGULATORS & CONTROLS

BID DATE: 2:00 P.M. July 6, 2017

**2.0 INSTRUCTIONS TO BIDDERS**

- 2.1 You are invited to submit a Proposal for a total of voltage regulators and regulator controls for the City of Oak Ridge, Tennessee represented as four items on the Proposal Form in Section 6.0 of this specification.
- 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. Award of items may be split between Vendors.
- 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 three (3) signed and priced copies of the Proposal documents and all required submittals in a sealed envelope prior to the time of the bid opening to:

City of Oak Ridge  
100 Woodbury Lane  
Oak Ridge, Tennessee 37830

**ATTN: Materials Management**

Sealed and marked in the lower left corner:

"SEALED BID for  
SUBSTATION APPARATUS RETROFIT/REGULATORS & CONTROLS  
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. OVERNIGHT SERVICE ENVELOPES MUST DISPLAY 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 without exceptions as a base bid;** Bidder may then submit the alternatives referenced to the base proposal. Alternative bids submitted without the base proposal will not be considered.
- 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 five (5) 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 or item on the proposal form.
- 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. Refurbished equipment will not be accepted.
- 2.14 The cost to furnish any and all prints, drawings, diagrams, instruction manuals, cut sheets, AutoCAD electronic files, reports, and certified test reports shall be included in the bid process and shall not be listed as a separate item.
- 2.15 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.

### 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 delivery, the Purchaser shall make payment of no more than 90 percent of total purchase price to the Seller. Upon completion of field assembly and certification by Seller that the materials provided are complete and ready for external connections, the Seller shall invoice the Purchaser for the final 10 percent. Within 30 days after invoicing, the Purchaser shall make payment thereof to the Seller.

#### 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 manufacturers' 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 or 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 performing this work or services of this contract, shall not discriminate against any person seeking employment with or by the contractor because of race, creed, color, sex, sexual orientation, national origin, or other legally protected status.
- 4.2 The City of Oak Ridge encourages the utilization of minority and women-owned businesses in its contracting and subcontracting projects and the Bidder is encouraged to actively solicit the participation of these businesses.
- 4.3 Each Bidder shall complete the following Equal Opportunity Compliance Certificate as part of the submitted proposal.
- 4.4 The City of Oak Ridge complies with title six of the 1964 Civil Rights Act. No person in the U.S. shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination.

## 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. We do not exclude, deny benefits, or discriminate against persons on the basis of race, color, or national origin.

Contractor        \_\_\_\_\_

Address            \_\_\_\_\_

\_\_\_\_\_

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

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

## **5.0 VOLTAGE REGULATOR SPECIFICATION**

1. STANDARDS
2. DRAWINGS AND DATA
3. REGULATOR DESCRIPTION, GENERAL
4. REGULATOR DESCRIPTION, SPECIFIC
5. EVALUATION OF LOSSES
6. CONTROL DESCRIPTION
7. WARRANTY
8. TESTING AND CERTIFICATION
9. SHIPPING

## 1.0 Standards

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

- 1.1 ANSI standard C57.15, “Step-Voltage and Induction-Voltage Regulators”, latest revision.
- 1.2 ANSI Type I, Mineral Oil per ASTM D-3487.
- 1.3 If a discrepancy exists between this specification and the standard, the specification shall prevail.

## 2.0 Drawings and Data

### 2.1 General

2.1.1 The manufacturer shall submit an Engineering and Drawing Schedule within (10) days ARO to the Engineer. This schedule will reflect the commitments submitted with the proposal. This schedule shall indicate the starting dates and dates of completion when the drawings and/or data will be submitted for the Engineer’s review. The timely submission of Manufacturer’s drawings and data is as important as manufacture and delivery of equipment and hardware, and shall be considered in determining the overall performance and progress of this agreement. The Engineer shall be allowed 14 days for review of drawings.

2.1.2 Each drawing and instruction book furnished for the regulators shall be clearly marked to identify the owner’s location as follows:

Three 667 kVA units: Substation 400, City of Oak Ridge, Tennessee

2.1.3 Submittals shall consist of, but not be limited to, the following:

- 1. Outline Dimension Drawings and Weights
- 2. Schematics
- 3. Wiring Connection Diagrams
- 4. Bushing Data/Drawings
- 5. Nameplate Data
- 6. Installation Instructions
- 7. Operating Instructions
- 8. Maintenance Instructions
- 9. Bill of Material
- 10. Foundation Information – anchor bolt location plans, loadings, base dimensions.

### 2.2 Submittal Process

After receipt of Owner’s Purchase Order or acceptance of Manufacturer’s Proposal, the Manufacturer shall submit to the Engineer four (4) copies of shop drawings of the specified equipment in accordance with the schedule submitted 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 and remaining sets 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 an extra work order.
  3. After satisfactory “Reviewed” or “Reviewed as Noted” has been obtained for all shop drawings, three (3) copies of shop drawings marked “FOR CONSTRUCTION” and one (1) electronic copy in AutoCAD format shall be furnished to the Engineer/Owner within 21 days of receipt of approval drawings by vendor.
  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 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 reproducible, shall be folded to 8-1/2” x 11” for submittal.
  6. All technical correspondence shall be sent to the Engineer.
- 2.3 Final instruction books shall be provided before shipment, and as a minimum shall contain the following information:
1. The items listed in Section 2.1.3.
  2. All drawings approved by Purchaser for the particular unit(s) furnished.
  3. Bills of materials.
  4. Instruction Leaflets.
  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.

### 3.0 Regulator Description, General

- 3.1 This specification covers electrical, mechanical, and safety features and characteristics of outdoor, single-phase, oil-immersed, step-type voltage regulators. The voltage regulators must be completely self-contained and provide 10% regulation in thirty-two (32) steps of approximately 5/8% each. Forced air ratings are not acceptable.
- 3.2 The regulator shall be sealed tank design with a 55/65°C rating. Operation at 65°C shall not increase the oxidation rate of the oil. A pressure relief device shall be supplied which vents at 4 PSIG.
- 3.3 The regulators shall be designed such that they can be partially or completely untanked for inspection and maintenance without disconnecting any internal electrical or mechanical connections. After the unit is untanked, it shall be possible to operate the regulator mechanism and to test the control panel from an external 120 VAC source without any reconnections between the control and the regulator.
- 3.4 The tap-changing mechanism shall be of the motor-driven, quick break type, and shall be completely oil immersed.
- 3.5 The external parts of the tank and control enclosure shall be painted ANSI #70 over a primer of contrasting color. The inside of the tank and the bottom of the cover shall also be painted and/or primed.
- 3.6 The regulator coil shall include thermally upgraded insulation to permit operation of the regulator up to 65° C rise without the loss of life to the insulation system.
- 3.7 The BIL rating of the bushings shall be compatible with the BIL of the regulator and shall have a minimum creep distance of 18 inches. The bushing designations (S, L, or SL) shall be permanently marked on the regulator cover adjacent to the bushings. The S, L, or SL bushings must be interchangeable with each other.
- 3.8 Each bushing shall include a threaded 1.125" – 12 UNF-2A stud and shall be provided **with NEMA 4 hole terminal pads, tinned** and suitable for connection to either copper or aluminum.
- 3.9 All regulators shall be provided with an external metal oxide varister (MOV) bypass arrester connected across the series winding.
- 3.10 An external oil sight gauge shall be provided which indicates oil level and color.
- 3.11 An external position indicator shall indicate the tap changer position. The position indicator shall be mounted above the oil level and shall be slanted downward at a 45-degree angle for ease of reading from the ground.
- 3.12 The 7620 voltage regulators shall be provided with taps for operation at 7970 V, 7620 V, 7200 V, 4800 V, 4160 V, and 2400 V.
- 3.13 Mounting bases shall be provided for the addition of lightning arrestors adjacent to the source, load, and source-load bushings.
- 3.14 All regulators shall be furnished with a 1" drain valve with sampling device and a 1" upper

filter press connection.

- 3.15 A handhole with cover shall be provided on top of the regulator for inspection purposes and access to terminals used for reconnection of regulators for lower voltage operation.
- 3.16 A temperature gauge shall be provided with current temperature indication and re-settable maximum drag hand indication.

#### 4.0 Regulator Description, Specific

- 4.1 Quantity three (3), single phase substation regulators shall be provided with a rating of 875 A, 7.62 kV +/-10 %, 667 kVA, 55°C, 60 Hz, 95 kV BIL.
- 4.2 **Provide and guarantee loss data for one raise and neutral positions at 875 amperes, 55°C rise over 30°C ambient.**
- 4.3 The regulators shall be Eaton's **model Cooper Power™ series VR-32**, +/- 10% regulation in (32) 5/8 % steps. These units are integral to a required design. No substitution of manufacturer or model will be entertained.
- 4.4 The units shall be self-cooled.
- 4.5 Provide a base for each unit that will provide 9' live part to ground clearance within a substation yard. The base shall have pre-drilled holes suitable for bolting the regulator to the sub base. Holes shall also be provided for anchor bolting the sub base to the pad.
- 4.6 Two ground pads, NEMA 2-hole, suitable for connection to copper material, shall be provided in diagonally opposite positions on the tank.
- 4.7 Provide necessary design and material such that the top of the control enclosure shall not be mounted at the height exceeding 4' 0" from the bottom of the sub base stand.
- 4.8 The units will be operated at 13.2/7.62 kV. **The factory shall pre-set the internal tap, PT ratio, and RCT ratio such that an overall potential ratio of 63.5:1 is achieved with a test terminal voltage of 120 V.**

#### 5.0 Evaluation of Losses

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

Evaluated Cost = Purchase Price of unit + (\$NL Value X No Load Losses (Watts)) + (\$LL Value X Full Load Losses (Watts)). After comparing the 1 raise and neutral loss cost, the higher of the two will be added to the unit price to determine the final evaluated cost of the unit.

Units 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 deduction on the invoice in accordance with the following:

**\$250 per unit** which fails to meet manufacturer's guarantee.



5.8.2 No load loss Value:  $\$NL \text{ Value} = \$ 6.00$

And

Load Loss Value:  $\$LL \text{ Value} = \$ 2.00$

The loss data required is the guaranteed value of **each individual regulator**. Certified test report data and compliance with guaranteed value will not be based on the average of the three units.

## 5.0 Control Description

Each control shall be Eaton's Cooper Power™ CL-7, as further described below. A CL-7 control shall ship with each of the three 667 regulators (Item 1 on the Proposal Form). Twenty four CL-7 units will be used to retrofit existing CL2A controls on Cooper Power™ McGraw 333 kVA units in service (Item 2, 3 and 4 on the Proposal Form). **Substitutions of the manufacturer will not be entertained.**

CL-7 Microprocessor-Based Voltage Regulator Control, as follows:

Usage: 1 = 1Phase

Language: E = English

Communications Interface, Port 1: 6 = Ethernet 100BASE-FX Multi-Mode (Fiber-Optic) ST  
Communications Protocol, Port 1: 2 = 2179, MODBUS, DNP, and IEC 60870-5

Communications Interface, Port 2: 0 = Standard; None  
Communications Protocols, Port 2: 2 = 2179, MODBUS, DNP, and IEC 60870-5

I/O: 2 = Two Sets of Universal Contacts, 8 In/8 Out, 10-250 Vac, 10-125 Vdc, Max 12-Gauge Wire

Auxiliary Power and Battery: 3 = 48/125 Vdc Substation Battery Power Provisions

Control Box Type: Mild Steel, Standard Size, Design type 2 with slanted top (refer to Cooper Power Systems standard drawing **20C642912 2 of 2**)

Control Cable: Shielded, Standard 54" length = A

Tap Changer Capacitor Type:

Three CL7 Controls shall be mated to and shipped with the 667 regulators described in more detail in Section 4.0 of this specification.

The remaining CL7 Controls will **replace CL2A controls on existing 333 kVA McGraw** regulators. The 333 kVA regulators have been retrofitted with **40 micro Farad** external capacitor kits. The 333 kVA units do not have a quick drive design.

## 7.0 Warranty

The manufacturer shall provide a one-year warranty from the date of energization or 18 months from certification. Submit the warranty description with the proposal.

## 8.0 Testing and Certification

The manufacturer shall test the units in accordance with the latest ANSI standards.

The manufacturer shall provide a list of factory tests and certify the units are ready for energization.

## 9.0 Shipping

**Regulators shall be furnished F.O.B. Destination, Freight Prepaid and Allowed at the destination indicated. Unloading will be provided by others.**

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.

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.

Provide forty-eight (48) hours advance notice to the Engineer of the exact time delivery will be made at destination, along with the information listed in 8.6.

Each item in the proposal may be shipped separately. All quantities for each item shall be shipped complete. If partial shipment of an item is contemplated, contact the engineer for permission prior to making the partial shipment.

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

- a. Purchase order Number
- b. Number of units being shipped per purchase order
- c. Weight of each item being shipped (heaviest)
- d. Estimated time of arrival
- e. Serial Number

### **Destination:**

The three 667 kVA units (each with a CL-7 control) shall be shipped to Oak Ridge Substation 400, 800 Fairbanks Road, Oak Ridge, TN, 37830.

The remaining twenty four CL-7 controls shall be shipped to the City of Oak Ridge Electric Department, 100 Woodbury Lane, Oak Ridge, TN 37830.

## 6.0 **PROPOSAL**

In submitting this Proposal via a sealed bid, the Manufacturer agrees as follows:

The prices set forth herein do not include any sums which are or may be payable by the Manufacturer on account of taxes imposed by any taxing authority upon the sale, purchase, or use of the equipment. If any such tax is applicable to the sale, purchase, or use of the equipment, the amount thereof shall be added to the purchase price paid by the Owner.

The prices set forth **herein are firm** if accepted by the Owner within sixty (60) days and shall include the cost of delivery to the job site, inspection, testing and certification. Manufacturer shall provide necessary field assembly of bushings, fins, fans, nitrogen system and/or other equipment shipped separately from the main body of the regulator, filling with oil and all other labor required to ready the regulators for external connection.

The regulators shall be delivered to the Delivery Site on or before the Delivery Date and certified for the Owner's use by the manufacturer on or before the Certification Date. Include delivery and certification dates with proposal.

Certification by the Manufacturer shall include such assembly, inspection and testing as required to certify the regulators for external connection and subsequent energization.

Title of equipment shall pass to the Owner once the equipment has been delivered, satisfactorily inspected for transit damage, assembly as required by the Manufacturer and certified test reports have been provided and accepted.

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.

The attached Proposal Questionnaire shall be completed in its entirety with all requested documents attached. Failure to supply all requested data may result in the rejection of the bid.

## PROPOSAL FORM

Page 1 of 2

TO: CITY OF OAK RIDGE, TENNESSEE

Project/Package: SUBSTATION APPARATUS RETROFIT/REGULATORS & CONTROLS

BIDDER: \_\_\_\_\_

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

Base Bid

	<u>Quantity</u>	<u>Description</u>	<u>Purchase Price</u>  per Unit	<u>Extended</u> <u>Purchase Price</u>  Quantity X Purchase Price per Unit	<u>Item Delivery</u> <u>ARO</u>  After Receipt of Order (days)	<u>Certification</u> <u>for</u> <u>Energization</u>  Days After Delivery
Item 1	3	Cooper Power™ series VR – 32, 667 kVA, with CL-7 control delivered to Sub 400, 800 Fairbanks Road, 37830				
Item 2	9	Cooper Power™ series CL-7 Controls to replace CL2 controls on existing 333 kVA regulators at Sub 400				
Item 3	12	Cooper Power™ series CL-7 Controls to replace CL5 controls on existing 333 kVA regulators at Sub 900				
Item 4	3	Cooper Power™ series CL-7 Controls to replace CL2 controls on spare regulator set at warehouse.				

## PROPOSAL FORM

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### Guaranteed Losses for Evaluation of Item 1

(Item 1's regulators will be evaluated when considering the cost of each unit.)

Guaranteed per unit				
	No Load Losses Watts @ 875 amperes, 55oC rise over 30oC ambient	Load Losses Watts @ 875 amperes, 55oC rise over 30oC ambient	No Load Loss Cost (No load Losses X \$ 6.00)	Load Loss Cost (Load Losses x \$ 2.00)
Item 1: 667 kVA Unit				
1 Raise				
Neutral				

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

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

Spare Parts List with Prices Included? Yes \_\_\_\_\_ No \_\_\_\_\_

Proposal Valid for 60 days from sealed bid opening? Yes \_\_\_\_\_ No \_\_\_\_\_

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

No. \_\_\_\_\_ Dated: \_\_\_\_\_

**Does this proposal contain any EXCEPTIONS to the specification?** Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, attach a list of the exceptions.

Bidder: \_\_\_\_\_

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

\_\_\_\_\_

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

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

Telephone Number: (\_\_\_\_) \_\_\_\_\_

Fax Number: (\_\_\_\_) \_\_\_\_\_

Date Signed: \_\_\_\_\_