**NOTICE AND INSTRUCTIONS TO BIDDERS**

ElectriCities of NC, Inc.

David E. Lucore, Electric Systems Manager

(704) 659-7375

On Behalf of the

Town of Pineville, NC

Bids are being sought by ElectriCities of NC, Inc. on behalf of the town of Pineville, NC for the furnishing of materials for the **Coventry Project** included as specified in the bid package. This is a **sealed formal bid** according to NCGS § 143-129.

A bid package may be obtained by e-mail request to [dlucore@electricities.org](mailto:dlucore@electricities.org).

You may mail your bid or hand deliver to**: ElectriCities of NC, Inc., Town of Pineville, NC, 505 Main Street, Pineville, NC 28134, ATTN: David Lucore** with **Coventry Project Bid Enclosed** indicated on outside of envelope.

Bid(s) must be returned on the attached proposal sheet showing unit prices fully extended and the proposal page completed in its entirety by **Tuesday, June 20, 2023, at 10 AM.** Bidder will be required to comply with all applicable statutes and regulations. Bidder is responsible for the timely delivery of their bid before the deadline. **All bids received after this time will be immediately rejected and returned to the bidder unopened.**

A public bid opening will be held at **10** **AM EST on Tuesday, June 20, 2023,** at the Town of Pineville Town Hall Conference Room, located at 505 Main Street, Pineville, NC 28134. At this time, the bids will be opened and read publicly.

Equipment must meet all specifications and be the kind and type specified, or an approved equivalent. Price quoted must be based on delivery to Pineville, North Carolina. Quoted price(s) should not include any sales or usage taxes but should reflect the actual bid price of the materials including freight.

All bids must be valid for 90 days after the date of the bid opening pending Council approval and award of bid.

**ElectriCities of NC, Inc., and the Town of Pineville reserve the right to reject any and/or all bids received, and to select the bid which is in the best overall interest of the Town of Pineville. Awards will be based upon the lowest cost, most responsive bidder.**

All bids shall include delivery time. Incomplete bids or those lacking the required information will be rejected if a fair determination of the product cannot be determined at the discretion of ElectriCities of NC, Inc.

David E. Lucore, Electric Systems Manager

PROPOSAL

TO TOWN MANAGER AND TOWN COUNCIL

TOWN OF PINEVILLE, NORTH CAROLINA 28134

The undersigned, as bidder, hereby declares that this proposal is made without connection with any other person, company, or parties making a similar bid or proposal, and that the proposal is in all respects fair and in good faith, without collusion or fraud.

The bidder has carefully examined the annexed form of specifications and instructions to bidders and hereby declares that he will furnish the equipment called for in the manner prescribed in the specifications and instructions to bidders for the following price:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Item #** | **ITEM DESCRIPTION** | **QTY** | **Unit Price** | **Total Price** | **DELIVERY TIME** |
| 1 | Box, Splice & Pedestal Assembly, HDPE | 50 |  |  |  |
| 2 | Box, Splice & Pedestal Assembly, HDPE | 12 |  |  |  |
| 3 | Cap, Insulating, 15kV, 200A | 10 |  |  |  |
| 4 | Clamp, Ground Rod, 5/8” | 100 |  |  |  |
| 5 | Connector, AL, TX Space Saving, Z-Bar, 6 Pos | 40 |  |  |  |
| 6 | Connector, AL/CU, 6-Shaped Multi-Cond. Range | 100 |  |  |  |
| 7 | Connector, AL/CU, H-Tap, Multi-Cond Range | 100 |  |  |  |
| 8 | Connector, CU, Split Bolt, #4 AWG – 1/0 STR | 100 |  |  |  |
| 9 | Connector, Submersible, 6-Conductor | 50 |  |  |  |
| 10 | Elbow, Load-break, 15 kV, STR-1/0 SOL, 200A | 50 |  |  |  |
| 11 | Pad, Fiberglass, Transformer, 42”x42”x18”, 25”x25” Interior Opening, Munsell Green, No. 7GY3.29/1.5 | 24 |  |  |  |
| 12 | Rod, Ground, CU Bonded 5/8” x 8 ft. | 30 |  |  |  |
| 13 | Wire, AL, 15 kV, 1/0 Solid, 220 Mil EPR, 16 #14 JKT | 5000 |  |  |  |
| 14 | Wire, AL, 600V, RHH/RHW-2, URD, 350 TPX, WESLEYAN | 3000 |  |  |  |
| 15 | Wire, AL, 600V, RHH/RHW-2, URD, #6 TPX, ERSKINE | 5000 |  |  |  |
| 16 | Wire, AL, 600V, RHH/RHW-2, URD, 2/0 TPX, CONVERSE | 6000 |  |  |  |
| 17 | Wire, CU, #6, Bare, 7-Strand | 315 |  |  |  |
| 18 | TX, 50 KVA, 1-Ph Pad, 7.2/12.47kV; 240/120 w/Taps – 5% above and 5% below | 21 |  |  |  |
| 19 | TX, 75 KVA, 1-Ph Pad, 7.2/12.47kV, 240/120 W/Taps – 5% above and 5% below | 1 |  |  |  |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Printed Name of Firm Representative

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of Firm Submitting Proposal Signature of Firm Authorized Representative

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Firm Address Title

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Telephone Number Email Address

**Product Specifications:**

1. **Aluminum, 15 kV, 1/0 Underground Primary Distribution Cable Specifications**

**General:**

15 kV, Jacketed Concentric Neutral, Filled Strand, 1/0 Solid Aluminum Conductor/105° C Continuous Operating Rating, 140° C Emergency Rating, 250 ° C Short-Circuit Rating, at 133% EPR Insulation with Full Copper Neutral consisting of 16, #14 strands.

**Specifications:**

All Cables must meet or exceed the following standards:

* ASTM B-609, Class B Stranded per B-231
* ICEA T-31-610 Water Penetration Resistance
* ANSI/NEMA Class A Connector Ability Requirements
* ICEA S-94-649, AEIC CS8 and C68.5 for Extruded Semi-Conducting Ethylene-Propylene Rubber (EPR)

**Central Conductor**: 1/0 Solid Aluminum

**Fill Strand**: Moisture Resistant with Water Swellable agent.

**Conductor Screen**: Extruded semi-conducting Ethylene-Propylene Rubber (EPR) – 20 mils Minimum

**Insulation**: Extruded Ethylene-Propylene Rubber (EPR) at 133% Insulation Value - 210 mils Minimum, 220 mils nominal, 250 mils Maximum.

**Insulation Screen**: Extruded semi-conducting Ethylene-Propylene Rubber – 40 mils Minimum, 75 mils Maximum

**Concentric Conductor**: 16, #14 Strands of Bare Copper Wires.

**Outer Jacket:** Black, Sunlight Resistant, Polyethylene with three (3) Red Stripes and NESC Lightning Bolt Symbol, Spaced 120° apart, with footage stamped on outside jacket.

1. **Elbow, Load-break, 15kV, 1 STR-1/0 Solid**

**General:**

15kV, 200A, Molded EPDM, Load-break Elbow, with integral jacket seal and test plug, fully shielded and insulated plug-in termination with 1/0 Solid connector.

**Specifications:**

All elbows must meet the requirements of the following standards:

* IEEE Std 386 – Standard for Separable Connectors
* IEEE Std 404 – Standard for Cable Joints and Splices
* IEEE Std 592 – Standard for Exposed Semi-conducting shields
* ANSI C119.4 - Standard for Copper and Aluminum Conductor Connectors

**Ratings:**

**Voltage:**

Standard Voltage Class – 15 kV

Maximum Rating Ph-to-Ph – 14.4 kV

Maximum Rating Ph-to-Gr - 8.3 kV

AC 60 HZ, 1 Minute Withstand – 34 kV

DC, 15 Minute Withstand – 53 kV

BIL and Full Wave Crest - 95 kV

Minimum Corona Voltage Level- 11 kV

**Current:**

Continuous Rating 200A rms

Switching 10 make/break operations at 200A rms at 14.4 kV

Fault Closure 10,000A rms sym. At 14.4 kV for 0.17 seconds after 10 switching operations

Short Time 10,000 A rms sym. For 0.17 seconds: 3,500 A rms sym. For 3.0 seconds

**Cable Properties:**

Elbow must be compatible with 15 kV, 1/0 solid Aluminum conductor URD cable, 220 mils insulation and a full jacketed concentric neutral with an AEIC outside diameter range of: 0.795 – 0.855.

1. **Single Phase, Pad Mounted Distribution Transformer**

**Standard Specifications:**

**Note:** Catalog numbers/information is/are shown for reference use only, alternate equivalents are acceptable. Supplier is responsible for meeting requirements as stated. Any alternate manufacturer's product must be approved by ElectriCities of NC, Inc. prior to acceptance of that item.

* 1. All characteristics, definitions, and terminology, except as specifically covered in this specification, shall be in accordance with the latest revision of the following ANSI®, IEEE®, Department of Energy, and NEMA® standards:
* **IEEE Std C57.12.00™ –** IEEE Standard for General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
* **IEEE Std C57.12.38™** - IEEE Standard for Pad-Mounted-Type, Self-Cooled, Single-Phase Distribution Transformers 250kVA and Smaller: High Voltage, 34,500 GRD Y/19920V and Below; Low Voltage, 480/240V and Below
* **IEEE Std C57.12.28™** – IEEE Standard Pad-Mounted Equipment–Enclosure Integrity
* **IEEE Std C57.12.35™ –** IEEE Standard Bar Coding for Distribution Transformers and Step-Voltage Regulators
* **IEEE Std C57.12.90™ –** IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers
* **IEEE Std C57. 91™ –** IEEE Guide for Loading Mineral-Oil-Immersed Transformers and Step-Voltage Regulators
* **IEEE Std C57.154™ -** IEEE Standard for the Design, Testing, and Application of Liquid-Immersed Distribution, Power, and Regulating Transformers using High-Temperature Insulation Systems and Operating at Elevated Temperatures
* **NEMA TR 1 (R2000) –** Transformers, Regulators and Reactors, Audible Sound Levels for Liquid-Immersed Power Transformers
* **10 CFR Part 431** – Department of Energy–Energy Conservation Program: Energy Conservation Standards for Distribution Transformers; Final Rule.
  1. The transformer shall have an Average Winding Rise (AWR) of 65°C.
  2. All transformers shall be new.
  3. Any exceptions to this specification shall be stated in bid.

1. **Transformer and Connector High-Voltage Ratings and Electrical Characteristics for dead-front transformers.**
   1. KVA: 50 & 75; Frequency: 60Hz; Temperature Rise: 65° C; Cooling: OA; High Voltage Rating (HV): 7200/12470V; Low Voltage Rating (LV): 240/120V, 3-Bushings; HV BIL (kV): 150; LV BIL: 30kV; 60 Hz, Dry, 1-minute Withstand: 34 kV
   2. The transformer shall be furnished with full capacity high-voltage taps. The tap-changer shall be clearly labeled to reflect that the transformer must be de-energized before operating the tap-changer. The unit shall have Two–2 ½% taps above and below rated voltage (split taps).
   3. Tap changer for de-energized operation — operation handle installed through tank wall in compartment with provisions for padlocking.
2. **Construction**
   1. Specify type of insulating medium (paper, adhesive, etc.) used throughout coil construction. Specify type of material used for support and clamping of core and coil assembly.
   2. The core and coil shall be vacuum processed to ensure maximum penetration of insulating fluid into the coil insulation system. While under vacuum, the transformer will be filled with preheated filtered degassed insulating fluid.
   3. The dielectric coolant shall be electrical grade mineral oil with oxidation inhibitor with a minimum dielectric breakdown voltage of 30 kV with a recessed oil compartment bottom.
   4. The core shall be manufactured from burr-free, grain-oriented silicon steel and shall be precisely stacked to eliminate gaps in the corner joints or low-loss amorphous metal.
   5. The coil shall be insulated with B-stage, epoxy coated, diamond pattern insulating paper, which shall be thermally cured under pressure to ensure proper bonding of conductor and paper.
   6. The transformer shall be equipped with a corrosion resistant locking assembly with captive penta-head security bolt, floating nut, and padlock provision.
   7. The transformer shall be equipped with mounting cleats and recessed lifting bolt eyes.
   8. The transformer shall be of sealed tank construction of sufficient strength to withstand a pressure of 7 psig without permanent distortion, and 15 psig without rupturing or affecting cabinet security.
   9. The tank shall include a pressure relief device to relieve pressure in excess of pressure resulting from normal operation. The venting and sealing characteristics shall be as follows: Cracking pressure: 10 psig ± 2 psig; Resealing pressure: 6 psig minimum; Zero leakage from reseal pressure to -8 psig; Flow at 15 psig: 35 SCFM minimum.
   10. Transformers shall have (2) stainless steel diagrammatic nameplates — one on the inside and one on the outside of the compartment. Nameplates shall be stamped with the PCB content, such as **“non-PCB at time of manufacture.”**
3. **High Voltage Bushings and Terminals:**
   1. Two, high voltage bushings (H1A/H1B) provided shall be externally clamped bushing wells. These wells shall be removable to allow for field replacement of the bushings without opening the tank.
   2. The bushing configuration shall be per IEEE C57.12.38 Figure 3. (This specifies an angled or ANSI® Type II bushing pattern).
   3. A cable accessory parking stand shall be provided and shall be located such that the separable insulated connectors that are designed for operation after the transformer is in place can be operated with hot-line tools.
   4. **Low Voltage Bushings and Terminals**
   5. Low Voltage terminals shall consist of three, externally clamped low-voltage threaded copper studs, (X1, X2, N) including a fully insulated neutral terminal with removable ground strap and tank grounding pad/connector for primary and neutral.
   6. These bushings shall be removable to allow for field replacement without opening the tank.
   7. The configuration of the secondary bushings shall be per IEEE C57.12.38 Figure 3 (This specifies an angled or ANSI® Type II bushing pattern).
   8. Homac Mfg. Company Cat. No. ZVW3035USL connectors shall be installed on the threaded bushings.
   9. Low voltage breaker for thermal and short circuit protection shall be provided inside compartment.
4. **Overcurrent Protection:** 
   1. Over-current protection shall be provided by a Bay-O-Net expulsion type holder/fuse with load break capability and a flapper valve to minimize oil spillage. Holder to be liquid immersed and externally removable by hot stick operation. The Bay-O-Net assembly shall be used in series with an internally mounted isolation link.
5. **Finish Performance Requirements**
   1. Tank finish shall be electrostatically applied powder paint finish with polyurethane topcoat for excellent resistance to chipping, fading, abrasion, and corrosion for outdoor environments. Specify as an exception if other than electrostatically applied polyester paint will be used on the tank. Tank bottom to be completely undercoated.
   2. Finish color shall be Munsell Green, No. 7GY3.29/1.5 and the coating shall meet all requirements in IEEE Std C57.12.28™.
   3. The enclosure integrity of the tank and cabinet shall meet the requirements for tamper resistance set forth in IEEE Std C57.12.28™ including but not limited to the pry test, pull test, and wire probe test.
6. **Production Testing:** 
   1. Specify standard tests performed on each transformer as well as sampled special tests:

* 1. The manufacturer shall provide the guaranteed average, no-load, and load losses for the unit. These losses will be subject to the tolerance of 10% no-load losses and 6% load losses. No-load losses shall be reported at 85°C or 20°C for 65°C AWR units.

Total losses and impedance values shall be reported at 85°C for 65°C AWR units.

Load Losses: No-Load Losses:

* 1. ElectriCities reserves the right to evaluate all bids on losses in accordance with the following equation: Evaluation Price + Bid Price + A (no Load Losses) + B (Full Load Losses) Where: A=5.41 and B=.94
  2. All transformers received are subject to testing and rejection if losses do not conform to quoted values.
  3. Rejected transformers may be returned to the supplier freight collect for full refund. Any supplier establishing a history for providing transformers which do not meet quoted loss values will be evaluated accordingly in future quotations and bid proposals.
  4. Specify the primary and secondary Fault Current Withstand (FCW) capacity and impulse voltage of the transformer.

Pri. FCW Capacity: Sec. FCW Capacity: Impulse Voltage:

* 1. Provide core losses, winding losses and Percent Impedance data with the proposal. Furnish certified loss test on each transformer.
  2. Specify the warranty, terms and conditions:
  3. Transformers manufactured for sale in the United States shall conform to efficiency levels for liquid immersed distribution transformers, as specified in the Department of Energy ruling “10 CFR Part 431 Energy Conservation Program: Subpart K: Energy Conservation Standards for Distribution Transformers; Final Rule; April 18, 2013.”

1. **Approved Manufacturers:**

**ABB**

**CENTRAL MALONEY**

**COOPER**

**EATON**

**ERMCO**

**GE – PROLEC**

**HOWARD INDUSTRIES**

\*Additional manufacturers may be approved based on evaluation by ElectriCities.

1. **Shipping and Delivery:** 
   1. The unit shall be banded, blocked, or bolted to a wood pallet or poly-pad.Units shall be double stacked to reduce shipping cost and storage space.
   2. Shipment shall be by open top truck to allow unloading by the purchaser with the use of a forklift.
   3. Successful bidder shall provide a minimum notice of 24-hours (excluding weekends and holidays) prior to their arrival to deliver transformers.
   4. Please call the **Pineville Electric Division** with the following information: Purchase Order number; quantity of each size TX shipped and the individual weight of each transformer; the date and ETA of delivery; and the driver’s phone number.
   5. Receiving hours are non-Holiday weekdays, M-F 7:30 AM to 3:00 PM.
2. **Service:** 
   1. The manufacturer of the transformer shall have regional service centers within a 50-mile radius of Pineville, NC to diagnose and repair transformer issues. Service personnel shall be factory trained in commissioning and routine service of quoted transformers.
3. **Compartment:**
   1. Compartment shall be tamper-resistant and comply with Western Underground Tamper Proofing Requirements, low -profile design.
   2. Transformer shall have 1” plug for top filter press connection and 1” drain.
   3. Removeable hood with corrosion resistant steel hinge pins and barrels.
   4. Mild Steel enclosure and detachable sill fastened with stainless steel hardware.
   5. Front panel accessory mounting bracket.
   6. Domed top surfaces on hood and oil compartment to prevent water retention.
   7. Embossed bushing mounts.

Exceptions:

Dear Prospective Bidder:

If you determine not to submit a bid in response to this solicitation, we would very much appreciate your completing and returning this form for our records.

Reason for not submitting a bid in response to this solicitation: ­­­­­­­­­­­­­­­­­­­­­­­­­­­(please be as specific as possible)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

FULL LEGAL NAME OF COMPANY: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ADDRESS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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SIGNED \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Thank you for your assistance. Please e-mail to:

[dlucore@electricities.org](mailto:dlucore@electricities.org)

ElectriCities of NC, Inc.

David E. Lucore, Electric Systems Manager

505 Main St

Pineville, NC 28134