

**TRAVERSE CITY LIGHT & POWER  
REQUEST FOR BIDS  
BARLOW SUBSTATION 69KV POTENTIAL TRANSFORMERS**

Traverse City Light & Power (TCL&P) is requesting sealed bids for the furnishing and delivery (F.O.B. Traverse City Light & Power, Traverse City, Michigan) of EIGHT (8) 69KV potential instrument transformers meeting the criteria of Section 262714 – Wound Potential Instrument Transformers. Potential Transformer delivery is required no later than May 1, 2020. Anticipated project award date is January 14, 2020.

Bids must include unit cost, extended cost, and delivery schedule. Traverse City Light & Power is a political subdivision (municipality) of the State of Michigan and is exempt from state sales taxes and will provide appropriate exemption certificate upon acceptance of the bid. Following acceptance by TCL&P, a Purchase Order will be issued to the successful vendor.

Sealed bids must be submitted to the attention of Stephanie Tvardek at **Traverse City Light & Power, 1131 Hastings Street Traverse City, MI 49686** no later than 11:00am, Friday, January 3, 2020. Electronic copies will NOT be accepted.

Traverse City Light & Power reserves the right to accept or reject any bid, waive technicalities, and to accept the bid deemed to be in the best interest of the TCL&P. Address all questions to Mr. Nicholas Winsemius, GRP Engineering.

**SUBMITTAL INFORMATION**

Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the potential transformers. Include rated capacities, operating characteristics, electrical characteristics, furnished specialties, recommended spare parts list, and accessories.

**SHOP DRAWINGS**

Shop drawings are to be submitted within four (4) weeks after award of bid. Include plans, elevations, sections, and mounting detail, equipment assemblies, dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection, diagrams for power, signal, and control wiring. AutoCAD.dwg format drawings including, but not limited to physical construction, electrical schematics, and nameplate information are required four (4) weeks after approval of manufacturer's shop drawings.

**SHIPMENT AND DELIVERY**

Material must be delivered on an open deck trailer and F.O.B. destination with freight prepaid and allowed to the following location. Acceptance of the potential transformers will be at delivery time following an inspection by TCL&P. Provide notice of delivery to both GRP Engineering, Inc. and Traverse City Light & Power at least 48 hours ahead of the delivery. Delivery will be accepted only on weekdays between the hours of 8AM to 3:30PM, local time. Failure to give advance delivery notification may result in delayed unloading of the equipment.

Notification of Delivery

Traverse City Light & Power  
Tony Chartrand  
231.932.4562

GRP Engineering, Inc.  
Nicholas Winsemius  
616.638.1671

Delivery Address

Traverse City Light & Power  
Barlow Substation  
525 Barlow Street  
Traverse City, MI 49686  
231.932.4562

Required delivery date by: May 1, 2020

Please contact the following individual with questions on this quotation:

Mr. Nicholas Winsemius  
GRP Engineering, Inc.  
3300 Eagle Run Drive, Suite 101  
Grand Rapids, MI 49525  
231.881.9733

# SECTION 262714

# WOUND POTENTIAL INSTRUMENT TRANSFORMERS, 69kV

## PART 1. GENERAL

### 1.01 SUMMARY

- A. This specification is for a factory assembled, outdoor, 69kV potential instrument transformers to be designed, manufactured, and tested in accordance with the latest revision of ANSI, ASTM, IEEE, NETA, and NEMA standards. Specific standards referenced, but not limited to:
  - 1. ANSI C2 - National Electrical Safety Code (NESEC)
  - 2. ANSI C12.1 – Code for Electricity Metering.
  - 3. ANSI C57.13 – Standard Requirements for Instrument Transformers.
  - 4. NFPA 70 – National Electric Code
- B. This specification covers the minimum acceptable quality, materials, inspection, drawings, and delivery of a combination instrument transformer.
- C. In the event of conflict between the Specification and the referenced documents, the requirements of this specification shall take precedence. In the case of conflict between several referenced documents, the more stringent requirement shall be followed. If clarification is necessary, contact the Engineer.

### 1.02 SECTION INCLUDES

- A. 69KV Potential Instrument Transformers.

### 1.03 SUBMITTALS

- A. Qualification Data: Furnish a list of all performed tests and test results on the potential transformers prior to shipment.
- B. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the combination instrument transformer. Include rated capacities, operating characteristics, electrical characteristics, furnished specialties, recommended spare parts list, and accessories.
- C. Shop drawings are to be submitted within four (4) weeks after award of bid. Include plans, elevations, sections, and mounting detail, equipment assemblies, dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection, diagrams for power, signal, and control wiring. AutoCAD.dwg format drawings including, but not limited to physical construction, electrical schematics, and nameplate information are required four (4) weeks after approval of manufacturer's shop drawings.
- D. Include three (3) hardcopies of all documentation for operation and maintenance shipped with the metering units as well as an electronic copy in .pdf format.
- E. All exceptions to these specifications shall be listed under "Exceptions to the Specifications".

#### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver equipment via flatbed truck to allow unloading from the bed side with a fork truck or from above with a crane.
- B. Store equipment in spaces with environments controlled within manufacturer's ambient temperature and humidity tolerances for non-operating equipment.
- C. Indicate if/what equipment requires assembly by Owner.
- D. Ship units with current transformers shorted at the terminal blocks.

### PART 2. PRODUCTS

#### 2.01 MANUFACTURERS

- A. Acceptable manufacturers and models are as follows
  - 1. Trench Model UT5
  - 2. GE / ALSTOM Model OTEF
  - 3. ABB / KUHLMAN Model POF
- B. Source Limitations: Obtain metering units and associated components specified in this Section from a single manufacturer and to be manufactured within the United States of America.
- C. Provide new materials, free from defects, in full conformance with the written specifications of this contract; and with all necessary auxiliary items required for a complete workable electrical system in accordance with the intent of these specifications.
- D. All equipment furnished shall be manufactured by the manufacturer at their own plants, except for minor auxiliary items and shall be factory assembled to fullest extent for minimum field re-assembly.
- E. Use materials suitable for their application and for the mechanical and electrical stresses to which they will be subjected.

#### 2.02 ELECTRICAL RATINGS

- A. Electrical Ratings
  - 1. Primary Voltage: 40,250V
  - 2. Secondary Voltage: 67.08/115/67.08/115
  - 3. Potential Transformer Turns Ratio: 600/350:1
  - 4. Potential Transformer Thermal Rating: 2,500VA
  - 5. BIL: 350KV
  - 6. Frequency: 60HZ

#### 2.03 ENVIRONMENTAL RATINGS

- A. Environmental Ratings
  - 1. Altitude: 600 feet above mean sea level.
  - 2. Ambient Temperature: -40°C to 40°C
  - 3. Oil shall be PCB free and have documentation stating "PCB Free".

## 2.04 PHYSICAL DESIGN

- A. Physical Design
  - 1. Location: Outdoor
  - 2. Method of Insulation: Mineral Oil
  - 3. Support Insulator Color: ANSI 70, light gray
  - 4. Terminal Connections: NEMA 4 Hole Pad (Tin Plated)
  - 5. Lifting Lugs
  - 6. Secondary Terminal Box

## 2.05 MANUFACTURED UNITS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Wiring Access: Junction box to have knockouts on both sides and bottom.
- C. The base box of units shall be constructed of aluminum or stainless steel.

## 2.06 POTENTIAL TRANSFORMER

- A. Single porcelain bushing.
- B. Line to ground connection rated at 40,250V.
- C. Two secondary windings.
- D. Ratio of 40,250V to 67.08/115/67.08/115V (600/350:1)
- E. ANSI accuracy class 0.3 for burdens W, X, M, Y, Z, and ZZ.
- F. Minimum Thermal Rating of 2,500VA

## 2.07 FINISHES

- A. Manufacturer's standard finish over corrosion-resistant pretreatment and primer.
- B. Porcelain to be ANSI No. 70, light gray.

## 2.08 SOURCE QUALITY CONTROL

- A. Factory Tests: Design and routine tests shall comply with referenced standards.

## 2.09 TESTING

- A. Potential transformers shall be tested for partial discharge.
- B. Each unit shall be monitored for partial discharge up to "induced voltage" test levels for "partial discharge inception".
- C. If partial discharge is detected, the "partial discharge extinction" voltage shall be greater than 135% of nominal operating voltage.

- D. Test reports shall be provided for ANSI required tests and including partial discharge test results showing no inception or the extinction voltage.
- E. Submit pdf copies of the certified test reports via email to the Buyer and Engineer prior the shipment of the circuit switcher.

#### 2.10 WARRANTY

- A. The manufacturer's standard warranty shall apply or the equipment shall be warranted for at minimum one year from the date of placing in service or eighteen months from the date of delivery, whichever is longer.

END OF SECTION 262714