



COUNTY OF ERIE
DIVISION OF PURCHASE
MEMORANDUM

TO: ALL USING DEPARTMENTS
FROM: Tricia Pierce, Buyer
DATE: May 13, 2021
SUBJECT: 220134-004 – Electric and Pump Motor Repair



Please be advised that the bid for Electric and Pump Motor Repair has been extended. The contract vendor is Volland Electric. The new contract term is May 1, 2020 through April 30, 2022. For your convenience the information is listed below.

BID NO.: 220134-004
VENDOR: Vendor #108550
VOLLAND ELECTRIC
75 Innsbruck Drive
Buffalo, NY 14227
TELEPHONE: 656-9900
FAX: 809-1095
MATERIAL GROUP: 929
PURCHASING GROUP: 004

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SECTION 1: MOTOR REPAIR

I. GENERAL:

A. Scope:

1. Erie County Purchase Division is seeking a qualified electrical motor repair shop to repair electric motors and also pumps with integrated motors in the fractional to 500 HP range, including UL Certified, explosion proof repairs. for the period of May 1, 2020 through April 30, 2021 with the option to renew for two additional one-year periods. This will be a time and materials-based bid.

B. Locations:

Various locations throughout Erie County.

C. Experience:

All Bidders shall submit with their bid a description of their firm as it pertains to the repair, service, and testing of electric motors.

II. QUALITY ASSURANCE:

A. Applicable Codes, Standards and References:

1. American National Standards Institute (ANSI).
2. Institute of Electrical and Electronic Engineers (IEEE).
3. National Electrical Manufacturers Association (NEMA).
4. Anti-Friction Bearing Manufacturers Association (AFBMA).
5. Electrical Apparatus Service Association (EASA).
6. International Electrical Testing Association (NETA).

B. Standard Products:

All replacement materials retrofit equipment and accessories shall be new. Remanufactured equipment may be acceptable in some cases but only with the approval of the County. Parts shall be the standard products of a manufacturer regularly engaged in the production of such material or equipment.

c. **Quality Standards:**

1. The successful bidder shall submit to the County the applicable Quality Assurance (QA) and Quality Control (QC) policies and associated procedures.
2. The successful bidder shall comply with all current applicable codes and standards, including but not limited to those referenced in this specification.

III. **EQUIPMENT AND BID INFORMATION:**

A. **Price Quotes:**

Upon receiving a motor from the County, the shop shall tear it down for evaluation. The shop shall then quote a price for parts and labor to repair the motor in accordance with these specifications.

The County will make a determination based on the shop's quote. The vendor will then be contacted and told whether to proceed with the repair, return the motor (disassembled) to the County or to scrap the motor.

Under no circumstances will the shop proceed with the repair before receipt of a Purchase Order number.

IV. **MATERIALS AND REPLACEMENT PARTS REIMBURSEMENT:**

It is expected that for routine jobs the contract vendor will use materials from their own stock. The contractor shall not be required to submit individual invoices for such material but is expected to maintain supporting documentation for these material charges.

When material or replacement parts are required for a particular job, which **are not** standard stock materials or currently out of stock and required for the job, the contractor must submit a copy of their invoice showing the amount paid.

The County reserves the right to conduct an audit or to request documentary evidence to substantiate any prices billed for materials. The County may elect to provide materials from County supply contracts. The bidder shall maintain timely records of all materials furnished by the County or the bidder and installed as part of the work order. The County will not reimburse the contractor for any sales tax.

v. **WORK TO BE PERFORMED:**

- A. The motor repair work outlined in this section is for all County motors ,any type, size and make that may need repair. The description is general only and shall not be construed as a complete listing of every item of work which may be required.
1. Pick up via your truck. No charge will be made for motor pick-up or delivery.
 2. If the motor is shipped with coupling on the shaft, the coupling locations shall be marked before it is removed. The coupling must be replaced in the same exact position when balancing the rotor and before returning the motor.

Steps 3 thru 16 are for motors requiring a general reconditioning but not a rewind:

3. Bake all windings at 275 degrees F in a temperature-controlled oven to infinity ground.
4. Perform complete electrical tests on stator and rotor winding. Tests to be conducted at double the rated winding voltage plus 1,000 volts (NEMA standard).

Perform the following tests: Insulation resistance, dielectric absorption, polarization index (10:1 minute ratio), DC over-potential and phase balance (low voltage). Surge comparison is to be run before and after the shop test run on rewind and before dismantling on non-rewinds. Core loss test shall be run before and after the stator burnoff. Record all values and include them in final report to the County.

5. Inspect stator and rotor core for any loose or damaged lamination, rotor pullover or loose or damaged supports. Cast and Brazed rotors: Rotors shall be cleaned & tested for open bars, and open braze joints as appropriate for their design. Testingshallinclude a core test utilizing a current source such as LEXSCO core tester or equivalent along with visual core flaw detector composed of a two-ply Mylar/iron filling articulating sheet. Should there be any areas of concern at brazed areas between rotor bars and their shoring rings, the rotor shall be pre- heated to 350°F then checked for cracks with dye penetrant and a developer. Anyirregularities found must be discussed with the Erie Countyrepresentative.
6. If any looseness is found in Step #5, the component will have to be solvent cleaned, preheated to 150 degrees F and dipped in Class "H" epoxy resin varnish. Both stator and motor will be baked at 275 degrees F for a minimum of twelve (12) hours.

7. If no problems are found in Step #5, then both the stator and rotor are to be heated to 150 degrees F and may be sprayed with Class "H" epoxyresin varnish. Both stator and rotor will be baked at 275 degrees F for a minimum of twelve (12) hours.
8. Rotor to be lathe mounted and shaft machined and polished to minimum runout. Scoring and grooving in the vicinity of the bearings and seals shall be repaired. Rotor bearing and seal journals are to be repaired using the following methods: A.) welding, grinding & polishing or B.) machining, hard chrome plating and polishing. The final journal dimension required for repaired journals will comply with the standard ABEC bearing tolerance charts for the bearing size required. **NOTE: Methods such as knurling, center punching and the use of resin fillers will not be acceptable methods of journal repair. Bearing journals will be micrometer checked.**
9. Check bearing housings using inside micrometers and compare against factory clearance limits. All rabbets and shaft paths to be checked for fit and distortion and repairs shall be made by cleaning-up/machining the endbell to accept (with an appropriate interference fit) an EZ Sleeve tubular insert (or equivalent product) followed by finish boring the sleeve insert's bore to the dimension required for the new bearing's OD as shown on standard ABEC bearing tolerance charts. **NOTE: Methods such as knurling, center punching and the use of resin fillers will not be acceptable methods of journal repair.**
10. For all motors of 25 H.P. or greater, mount shaft/rotor assembly in 5,000 lb. Stewart-Warner balancer or equal and dynamic balance to factory specifications or better. If the motor was shipped with a coupling half on the shaft, the coupling must be mounted on the exact same location before balancing.
11. Install new drive end and opposite end bearings with 200 or 300 series, C-3 fit ball bearings. The new bearings shall be sealed. Check bearing dimensions and mate bearings to bearing housings. The motor shall have a tag or plate affixed to it indicating that it has sealed bearings. The bearing grease shall be lubrication engineer's type 1275.
12. Replace connection box, cover and/or gasket if damaged or missing.
13. Replace connection box gasket.
14. Check fan blades for missing blades, damaged blades or any unacceptable imbalance.
15. The motor shall be painted G.E. blue-gray, USAi paint code #24.
16. The work on each motor must be completed and the motor returned within five (5) working days if no parts other than bearings are required.

If motor is known to require a rewind, then the following work instructions will apply: (Insert at Step #3 and omit Steps #3 thru 7 listed above).

17. Motor shall be rewound with United Technologies Essex MR 200 Magnet Wire or equivalent. This wire is for motor applications subject to moisture. It must have a dielectric strength at the rated temperature of 4275 volts minimum. The thermal class under U.L. listing MW-35C shall be 200 degrees centigrade.
18. Insulating materials will be class H.
19. The rotor shall be dipped in a class H epoxy resin such as Epoxylite Epoxy Resin made by Elantra PDG, w/E-478 Epoxy Resin made by ELANTAS PDG, INC. or a substitute product epoxy resin as approved by Erie County. The stator shall be sealed against moisture by vacuum impregnation (V.P.I.) using Epoxylite Epoxy Resin made by Elantra PDG, w/E-478 Epoxy Resin made by ELANTAS PDG, INC. or a substitute product epoxy resin as approved by Erie County. The stator and rotor shall be baked at 275 degrees F for a minimum of twelve (12) hours.
20. Bring out leads to * inch length without terminations.
21. When the stator is to be rewound, bring out the three leads for * volts only.

**** To be specified by the County at the***

time of repair. Special Instructions for

“Explosion-Proof” Motors:

This motor operates in a Class I, Division I, Group D atmosphere. Your motor shop must be UL- approved to re-certify this motor for use in the explosive atmosphere described above.

The UL re-certification process is to include the installation of a new UL nameplate and the listing of this re-certification on the vendor's UL log book.

Be advised that this motor must have a “UL Rebuilt Motor” listing mark and must be rebuilt accordingly. The motor will need rewinding and new bearings.

22. **No additional work will be authorized without the written consent of the County. Any such unauthorized work will result in forfeiture of payment. If you have any problems with the work you must contact the County "Contact" listed on the purchase order immediately.**
23. Contractor must give the County twenty-four (24) hours notice as to when the motor will be returned.
24. Return old parts to the County when requested.

VI. **TESTING:**

- A. Test run the motor in the Contractor's shop at full voltage and until it reaches operating temperature. Check voltage and current balance. Perform a complete vibrational analysis: Radial in two (2) perpendicular planes, two (2) points in each plane and one (1) axial point. Perform gear spike energy analysis on both bearings.
- B. Erie County reserves the right to be present and to observe these tests, therefore, it will be necessary to notify the County twenty-four (24) hours in advance of any test run.
- C. Acceptance of the installation will occur after the motor has been installed, meggered and current and voltage reading taken under expected load.
- D. All test results shall be reported on forms as recommended by the National Electrical Testing Association, (NETA), The Electrical Apparatus Service Association (EASA) or forms that are parts of an (ISO) followed service program. The results shall be in the proper units for dimensions. The Contractor shall submit with his schedule a list of all tests to be performed by any independent testing firm or by the Contractor's staff.

VII. **FINAL REPORT:**

The Contractor shall be required to furnish a final report giving all the as-found and as-left test measurement values. The report must be reviewed and signed by the Contractor's engineer or shop foreman. All test results can be submitted to the owner by email in a PDF format, MS Word or MS Excel document.

The original copies of all as-built drawings, wiring diagrams, schematics, O & M manuals and literature furnished by the County, used by the Contractor to perform the work, must be returned to the County within ten (10) days of final acceptance.

VIII WARRANTY:

All replacement parts and workmanship shall be warranted for two (2) years. The motor shop shall be prepared to provide evidence of strength supporting their capability to provide adequate warranty support. This may be accomplished by a shop visit in the case of shops performing motor repairs for the first time for the County.

Safety and precautions:

Safety practices shall include but are not limited to the following requirements:

- a. Occupational Safety and Health Act.
- b. Accident Prevention Manual for Industrial Operations, National Safety Council.
- c. Applicable state and local safety operating procedures.
- d. National Fire Protection Association - NFPA 70E.
- e. American National Standards for Personal Protection.

Emergency/Overtime Repair Service:

The Bidder will be required to provide overtime and emergency repair service to Erie County as needed. The bidder must have all necessary tools needed to perform the emergency repairs.

Response Time:

The bidder shall arrive at the emergency repair site according to the following:

- a. Within three (3) hours from receipt of the emergency repair call Monday-Friday, 8:00AM to 5:00PM. (straight time).
- b. Within three (3) hours from receipt of the emergency repair call Monday- Friday, 5:00 PM to 8:00 AM. and Saturdays (Overtime at one and one half times the labor rate).
- c. Within four (4) hours from receipt of the emergency repair call Sundays and holidays. (Double Time).

Questions regarding motors or requirements should be directed to Kevin Kaminski, Erie County Sewer District #3. 716-823-8188.

PRICING

Award will be based on a common motor job and an emergency motor job required by the County that includes the following:

6 hours of motor repair work

2 hours of machine work

1200.00 in parts.

Inspection fee	\$ <u>No Charge</u>
Emergency/Overtime Inspection fee	\$ <u>No Charge</u>
Hourly Rate Motor/Pump Repair Work	\$ <u>48.75</u>
Hourly Rate Emergency/Overtime Motor/Pump Repair Work	\$ <u>53.63</u>
Hourly Rate Machine Shop Repair Work	\$ <u>48.75</u>
Hourly Rate Emergency/Overtime Machine Shop Repair Work	\$ <u>53.63</u>
Material Markup Rate	Cost + 9%

NAME OF BIDDER Volland Electric Equipment Corporation

SIGNATURE Kirk P. Graham DATE 05/04/20