

AGENDA ITEM

TO: Tim Vandall, City Administrator
FROM: Anthony J. Zell, Jr., Wastewater Utility Director 
DATE: February 9, 2024
SUBJECT: Equipment Replacement Request – Surface Aerator VFD's

Several years ago the City was notified that the current manufacturer of the variable frequency drives (VFD's) in use at the treatment facility had been discontinued. Council authorized staff to purchase as many spare parts as could be found to keep the units operational.

Since that time, all spare parts have been exhausted and are replacements are no longer available. Staff programmed a replacement program for the eleven (11) ASI Robicon VFD's, beginning in 2024. However, in 2022 and early 2023, three of the city influent pump units failed. Luckily, two of the pumps were rewired and connected to the idle VFD's for the surface aerators for the aeration basin that were not in use. One pump had to be taken offline, as no other spare unit or spare parts were available to make it operational. The influent pump station is awaiting upfit with the new VFD's that were ordered in March of 2023, and delivered in January 2024.

Staff solicited a quote from the City's SCADA contractor to replace the seven remaining surface aerator VFD's, which is included in the agenda packet. Lead times for the new units are estimated at **24+ weeks**, given current orders in the pipeline and delays in the supply chain. The new units are current production models with a large representation in the industry, so these units should be able to be serviced for years to come.

This purchase would complete the planned upgrades to the variable frequency drives for major facility equipment.

Policy Consideration: This was a budgeted purchase as part of the City's annual replacement program for 2024.

Financial Consideration: Funds for the project are available in the Utility's acquisition account.

Action: A motion to approve the quote from RE Pedrotti for **\$188,779.50** (\$179,790.00 base bid plus 5% contingency of \$8,989.50) to replace seven variable frequency drives.

AGENDA ITEM # 6



February 6, 2024

Quote No. 2133.R1
Valid for 60 days

Mr. Tony Zell
City of Lansing
800 First Terrace
Lansing, KS 66043

RE: Lansing WWTP – Surface Aerators & Recirc Pump VFD Replacements - **Rev. 1**

Dear Tony:

The **R.E. Pedrotti Company, Inc.** is pleased to provide you the following revised quotation for the subject referenced above. This proposal provides for a turn-key solution that includes furnishing seven (7) new VFDs, their installation and wiring, their integration into the Plant's SCADA System and their startup and testing, including O&M training. The existing VFD equipment will be moved to a holding area as directed on the premises.

The following scope of materials and services will be provided as part of this project:

<u>Item</u>	<u>Qty.</u>	<u>Description</u>
A.	4	<p>Replacement Surface Aerator 75 HP Variable Frequency Drive; Typical for D1-SA1, D1-SA2, D2-SA1 & D2-SA2). Siemens/Robicon Sinamics P/N 6SL3710-1BJ31-1AU1-Z Z=D02+D14+K20+K21+K22+L27+L28+M12+X30.1</p> <p><i>Equipment to reuse existing pump motor leads, power cabling and control wiring and conduit.</i></p> <p>Configuration & Options to Include:</p> <ul style="list-style-type: none">• 460-480 VAC, 3-phase, 60 Hz, 96A• Intelligent Operator Interface Panel• One (1) Phoenix Contact Power Supply• Circuit Breaker Disconnect Switch, DC Choke• UL508A Certified/Stickered• 2-Contactor Bypass (Output/bypass contactors & overload relay)• NEMA 12 Filter Kit• Input Fusing• Door mounted Pilot Lights, H-O-A Switch, Local-Remote Switch Controls, Speed Potentiometer, Start/Stop Push-Button, & Elapsed Time Meter• Free-standing leg mount kit (24" under enclosure)

Item	Qty.	Description
		<ul style="list-style-type: none"> • Panel wiring diagrams
B.	2	<p>Replacement Surface Aerator 40 HP Variable Frequency Drive; Typical for C-SA1 and C-SA2). Siemens/Robicon Sinamics 6SL3710-1BJ26-0AU1-Z Z=D02+D14+K20+K21+K22+L27+L28+M12+X30.1</p> <p><i>Equipment to reuse existing pump motor leads, power cabling and control wiring and conduit.</i></p> <p>Configuration & Options to Include:</p> <ul style="list-style-type: none"> • 460-480 VAC, 3-phase, 60 Hz, 52A • Intelligent Operator Interface Panel • One (1) Phoenix Contact Power Supply • Circuit Breaker Disconnect Switch, DC Choke • UL508A Certified/Stickered • 2-Contactor Bypass (Output/bypass contactors & overload relay) • NEMA 12 Filter Kit • Input Fusing • Door mounted Pilot Lights, H-O-A Switch, Local-Remote Switch Controls, Speed Potentiometer, Start/Stop Push-Button, & Elapsed Time Meter • Free-standing leg mount kit (24" under enclosure) • Space to mount and wire existing submersible pump motor seal fail/overtemp protection sensor module (<i>to be moved from each corresponding existing VFD to its new VFD</i>) • Panel wiring diagrams
C.	1	<p>Replacement Recirculation Pump 5 HP Variable Frequency Drive. Siemens/Robicon Sinamics P/N G120XE 6SL3710-1BJ21-0AU1-Z+D02+D14+K20+K21+K22+L27+L28+M12</p> <p><i>Equipment to reuse existing pump motor leads, power cabling and control wiring and conduit.</i></p> <p>Configuration & Options to Include:</p> <ul style="list-style-type: none"> • 460-480 VAC, 3-phase, 60 Hz, 7.6A • Intelligent Operator Interface Panel • One (1) Phoenix Contact Power Supply • Circuit Breaker Disconnect Switch, DC Choke • UL508A Certified/Stickered • 2-Contactor Bypass (Output/bypass contactors & overload relay) • NEMA 12 Filter Kit • Input Fusing • Door mounted Pilot Lights, H-O-A Switch, Local-Remote Switch Controls, Speed Potentiometer, Start/Stop Push-Button, & Elapsed Time Meter • Space to mount and wire existing submersible pump motor seal fail/overtemp protection sensor module (<i>to be moved from each corresponding existing VFD to its new VFD</i>) • Panel wiring diagrams
D.	Lot	<p>VFD Disconnection and Installation Services. Includes physical disconnection and removal of four (4) existing Influent Pump VFDs and setting,</p>

<u>Item</u>	<u>Qty.</u>	<u>Description</u>
		reconnection/installation of the newly furnished VFDs described in Item A. <i>VFD installation and wiring services are provided by a licensed/insured industrial electrical subcontractor to R.E. Pedrotti Company, Inc.</i>
E.	Lot	VFD Commissioning Services. Drive startup, system checkout/testing, and personnel O&M training.
F.	Lot	VFD Integration Services. PLC and HMI integration services to tie-in and interface with the new drives from SCADA <i>The remote monitoring and control functionality from SCADA will mirror that of the existing VFDs they are replacing</i>
G.	Lot	Documentation. Project documentation including field commissioning reports, drive configuration files and O&M manuals on USB flash drive
H.	Lot	Warranty. Warranty is 12 months from date of commissioning or 18 months from date of shipment, whichever expires first.

TOTAL PRICE FOR ITEMS A-H: \$ 179,790.00**

****Clarifications/Exclusions:**

1. Pricing is exclusive taxes, permits, bonds and licenses unless noted above.
2. FOB Factory. **Freight included.**
3. Terms: Net 30 Days.
4. VFD equipment lead time estimate: 24-28 weeks ARO
5. Itemized component pricing summary (Item extended price listed):
 - i. Items A-C: \$135,850.00
 - ii. Item D: \$33,820.00
 - iii. Item E: \$ 5,940.00
 - iv. Item F: \$ 3,980.00
 - v. Item G: \$ 200.00
 - vi. Item H: *N/C; included with package*

If you have any questions or comments, please do not hesitate to call.

Sincerely,

R. E. PEDROTTI COMPANY



Ed McGrath