

ADDENDUM NO. TWO
REQUEST FOR PROPOSALS
THORNTON WATER PROJECT
PRE PURCHASE - PUMPS
PROJECT NO. 12-777J1
CITY OF THORNTON, CO

TO: Prospective Proposing Firms and all others concerned

DATE: January 7, 2026

PURPOSE: To provide additional information and clarification to the solicitation documents for the above-referenced Project.

1. The following questions and answers are provided for additional clarification to the RFP.

Question 1: 26-18-42-1.04-D-1 requires torsional analysis, this is not something that drive people normally provide as it's a function of the pump manufacturer and will add costs to the VFD provider that will be passed on. It is totally reliant on the pump manufacturer for accuracy. It can be done but at a significant cost over what the pump supplier will need to provide to the VFD manufacturer. We are not sure what the purpose of this requirement is in the VFD specifications.

Answer 1: The torsional analysis is only required for MV VFD drives that produce more than 1% torque pulsations.

Question 2: 26-18-42-1.11-B- This calls out individual components for the power blocks (items A-D, J spare gate firing boards). Normally this will be a spare power module with the components already installed and tested. ACCEPTABLE.

Answer 2: 26-18-42-2.02-d-4.b&c- Same torsional question as to why this belongs in the VFD specification. The torsional analysis is only required for drives that produce more than 1% torque pulsations.

Question 3: 26-18-42-2.02-E-1 requires an efficiency of 96%. TMEIC is at 95.5%

Answer 3: Acceptable.

Question 4: 26-18-42-2.02-E-2 calls out factory testing at full load and partial load to confirm efficiencies. While this is doable, it requires the manufacturer to run the drives at full load with motors instead of using reactors to get the full load. It adds a lot of cost to the system, which we (or any other manufacturer can do) but the City bears the cost of the test. Additionally to perform the test under load with the specific motor and pump in order to confirm accuracy will add additional costs that will be passed along. COST IS ACCEPTABLE. IT IS RECOMMENDED TO BE PERFORMED.

Answer 4: The test in question is an efficiency test that requires the VFD needs to be fully loaded and not necessary to be done with motor.

Question 5: 26-18-42-2.02-H-1 calls for 75 dBA at 1 meter. We believe a better standard is to be <80 dBA at any speed. The noise from the VFD is the cooling fans.

Answer 5: Acceptable.

Question 6: 26-18-42-2.03-A- We are requesting the TMEIC be added to list.

Answer 6: Done.

Question 7: 26-18-42-2.06-A- A VFD with a 24 pulse with an active front end gives a lot of additional features such as power factor correction, regen capability and the harmonic equivalent of a 50 pulse drive.

Answer 7: Acknowledged and acceptable.

Question 8: 26-18-42-2.06-K-3- This is something that we view as a potential weak link to tie your low voltage, both 480 and 120 to the main transformer where a short or problem with the low voltage can trip the entire machine. We believe a separate 480 and 120 volt supply from the building is a better solution.

Answer 8: Carollo recommendation is to have internal power from VFD to power control and accessories. It is not recommended to have three different outside power sources to serve drive, multiple points of power failures.

Question 9: 26-18-42-2.06-L-3- The VFD already has all the protection features that come on a protective relay and we don't normally see people putting in protective relays with drives. It's a very large expense to have both.

Answer 9: If MV VFD can provide protection as noted in contract documents (30E06 - one-line drawings, P&ID's 30N28, etc.) then additional protective relay is not necessary. The MV VFD would need additionally sufficient RTD inputs as shown on P&ID's as one of the requirements.

Question 10: 26-18-42-2.06-M-4- This is a very specific requirement that only Siemens did. No one tries to record and maintain 50 faults. The standard for most drives is 8 faults.

Answer 10: Carollo recommendation is to have 50 events log. 8 event logs is acceptable if that is only available option.

Question 11: 26-18-42-2.06-M-5- This is also strictly a Siemens specification. We record before and after events of any fault, but I'm not sure what they are defining as an interval. Also, no one uses an RS232 port for these anymore. Ethernet ports are the standard.

Answer 11: Ethernet ports are acceptable. The "interval" is duration of time between samples for historical logging, and the specifications are calling for how many of these samples must be saved around the time of a trip.

Question 12: 26-18-42-2.07-2-g&h- These are just an added cost if you actually want to monitor the power at each drive as opposed to monitoring the power at the buss for the building. Potential cost savings- just bringing up as a potential savings.

Answer 12: Carollo recommends for life cycle of equipment to have power information.

Question 13: 26-18-42-2.09-C-6- Would recommend stating manufacturers standard design, some manufacturers use 12 gauge some 14 gauge. Either are suitable for the system.

Answer 13: Carollo recommends 12 gauge for sturdy construction.

Question 14: 26-18-42-2.10-A- Would recommend stating manufacturers standard color, unless you actually want gray- TMEIC standard is beige.

Answer 14: Carollo recommends standard gray color finish.

Question 15: Motor specification - 26-05-10-2.03-A- Would like to add TMEIC motors to the list.

Answer 15: At this bid time, TMEIC motors can be considered as equal, as long as they meet specification requirements.

Question 16: Protective Relay - As mentioned above, I believe the City can save money by not requiring a Protective Relay as the VFD's have all the protections (and more) included in the VFD. We normally only use protective relays with soft starts and across the line starters.

Answer 16: As mentioned above, if MV VFD can provide protection as noted in contract documents (30E06 - one-line drawings, P&ID's 30N28, etc) then additional protective relay is not necessary. The MV VFD would need additionally sufficient RTD inputs as shown on P&ID's as one of the requirements.

Question 17: I's suggest that the VFD and motor be supplied by the same manufacturer. All your listed pump vendors are current customers of TMEIC.

Answer 17: Acceptable but not required.

Question 18: What are the water operating levels in the wet well?

Answer 18: Minimum suction static head in the wetwell is 5 feet, and maximum suction static head in the wetwell is 30 feet as shown in the Pump Schedule of Specification Section 43_24_50.10, Part 3.05.

2. All other terms and conditions shall remain unchanged except as provided by this Addendum. Proposing firms must acknowledge receipt of this Addendum in their Proposal.

END OF ADDENDUM NO. TWO

Patrick Hinterberger
Contracts Supervisor