

ADDENDUM NO. 2

**LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS**

EQUIPMENT PROCUREMENT OF PLUG VALVES AND ACTUATORS

**MACON WATER AUTHORITY
MACON, GEORGIA**

GENERAL

All proposals are due to Barge Design Solutions by 5:00 PM local time on April 15, 2024.

SPECIFICATIONS

Delete Specification 40 05 62 in its entirety and replace with Specification 40 05 62 included with this addendum.

Delete Specification 40 05 57 in its entirety and replace with Specification 40 05 57 included with this addendum.

Bidder Must Acknowledge Receipt of this Addendum in Proposal

April 1, 2024

Barge Design Solutions, Inc.
6525 The Corners Parkway, Suite 450
Peachtree Corners, GA 30092
678.515.9411

Part 1 General

1.1 Section Includes

- A. This specification covers the requirements for actuators, both manual and electric, for above and below grade liquid process valves inside treatment plants.
- B. Valve manufacturer shall be responsible for mounting actuators on valves supplied under other sections and shall be responsible for coordinating the mounting of the actuators.

1.2 Related Sections

- A. Section 09 90 15 - Paints
- B. Section 40 05 62 - Plug Valves

1.3 Submittals

- A. Submit in accordance with Section 01 33 00.
- B. Shop Drawings:
 - 1. Complete catalog information, descriptive literature, specifications, and identification of materials of construction.
 - 2. Power and control wiring diagrams, including terminals and numbers.
 - 3. For each power actuator provided, Manufacturer's standard data sheet, with application specific features and options clearly identified.
 - 4. Sizing calculations for open-close valves.
- C. Manufacturer's Certificate: Submit Manufacturer's Certificate of Compliance for:
 - 1. Electric actuators: full compliance with AWWA C542.
- D. Operations and Maintenance Data: As specified in Section 01 78 23.
 - 1. Submit 6 copies each of operation and maintenance manuals in indexed booklet form. Detail in the Operation Manuals the step-by-step procedures required for specialized startup, operation and shutdown of piping systems, and include the manufacturer's name, model number, parts list and brief description of piping equipment such as valves and other appurtenances and their basic operating features.
 - 2. List in the Maintenance Manuals routine maintenance procedures and troubleshooting guides for the equipment.

Part 2 Products

2.1 Materials and Equipment

- A. Provide valve actuators as specified and as shown on the drawings, and suitable for the service intended.
- B. Components that serve the same function and are the same size shall be identical products of the same manufacturer.
- C. All iron and steel components shall be manufactured in the United States in conformance with funding agency requirements.
- D. Standard Products
 - 1. Provide material and equipment which are the standard products of a manufacturer regularly engaged in the manufacturing of the products and that essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening.

2.2 Actuators

- A. Manual Operators:
 - 1. The force in a manual operator shall not exceed 40 pounds under any operating condition, including initial breakaway. The operator shall be equipped with gear reduction when the force exceeds 40 pounds. The manual operator shall be a self-locking type or shall be equipped with a self-locking device. A position indicator shall be supplied on quarter-turn valves. Worm and gear operators shall be a one-piece design with worm-gears of gear bronze material. Worm shall be hardened alloy steel with the thread ground and polished. Traveling nut type operators shall have threaded steel reach rods with an internally threaded bronze or ductile iron nut.
 - 2. Exposed Operators: Exposed operators shall have galvanized handwheels. Lever operators are allowed on quarter-turn valves 8 inches and smaller. Cranks shall be supplied on gear type operators. If located higher than 6 feet above the operator floor, chain wheel operator with tiebacks, extension stem, floor stands, and other accessories shall be provided to permit operation from normal operation level. Valve handles shall be capable of padlocking, and wheels shall be lockable with a chain and padlock.
 - 3. Buried valves shall have extended bonnets with an enclosed drive shaft that allows the geared operators to be mounted above grade. The moving parts of the valve and operator shall be enclosed in a housing to prevent contact with the soil. The extended bonnet shall be standard weight steel tube with epoxy coating. The enclosed drive shaft extension shall be 304 SSTL. The installation contractor shall brace the extended bonnet outer tube at a maximum spacing of 10 feet.
 - 4. Operators for quarter-turn valves shall be designed to operate the valve at the maximum operating pressure listed in the valve schedule, and to withstand a

450 foot-pound input torque at the fully open and fully closed positions, whichever is greater.

B. Electric Motor Operators

1. Electric operators shall be provided complete with actuators, speed controls and accessories. Actuators shall comply with AWWA C542. The actuators shall operate on 460V, 3phase, 60 Hz. Open/close valves shall have a 30 percent duty cycle. Actuators shall be equipped with an AC thermal overload protector with automatic reset, reversing (bi-directional) operation for use with quarter-turn valves, or rotating equipment to full rotation. Gearing shall be a two-stage planetary, permanently lubricated self-locking gear train with self-lubricating bearings, connections via male output staff. Two travel stop limit switches with cams, internal, independent, adjustable, and actuated by cams shall be mounted on the drive shaft. A side mounted hand turn wheel shall be provided for a manual override. The actuators shall have a NEMA 250 Type 4 enclosure with a corrosion resistant, baked epoxy finish as standard. The actuator shall operate in a temperature range of minus 40 to plus 150 degrees F. Actuators shall fail in last position unless otherwise indicated.
2. Limit Switches. Limit switches shall be single-pole, double-throw (SPDT) type, rated 10 amps at 120 volts ac, housed in a NEMA 250 Type 4 enclosure, and adjustable for open and closed valve positions.
3. Manufacturer / Product:
 - a. Limitorque MX Series

Part 3 Execution

3.1 Examination

- A. After becoming familiar with all details of the work, verify all dimensions in the field, and advise the Engineer of any discrepancy before performing the work.

3.2 Preparation

- A. Protection: Openings shall be closed with caps or plugs during installation. Equipment shall be protected from dirt, water, and chemical or mechanical damage.

END OF SECTION

Part 1 General

1.1 Section Includes

- A. Eccentric Plug Valves for Liquid Service.

1.2 Related Sections

- A. Section 09 90 15 - Paints
- B. Section 40 05 51 - Common Requirements for Process Valves.
- C. Section 40 05 57 - Actuators for Process Valves and Gates.

Part 2 Products

2.1 Eccentric Plug Valves for Liquid Service

- A. Eccentric Plug Valve, 14" to 20"
 - 1. Nonlubricated type eccentric valves rated for 100 psig service at 140 degrees F. Valves shall have drip-tight shutoff with pressure from either direction, and cast iron bodies. Exposed service valves shall have flanged ends in accordance with ASME B16.1 Buried service valves shall have mechanical joint ends, unless otherwise noted.
 - 2. Plug shall be all metal, matching body with round or rectangular port, fully ported to match the connecting pipe area, and coated with Buna-N, welded nickel seats, self-lubricating stainless steel stem bearings, and stem seal multiple V-rings or U-cups with O-rings of nitrile rubber, with grit seals on both upper and lower bearings. Totally enclosed, geared, manual operator with handwheel or 2-inch nut. Size operator for 1.5 times the maximum shutoff pressure differential for direct and reverse pressure, whichever is higher.
 - 3. Manufacturers and Products:
 - a. DeZurik
 - b. Valmatic
 - c. Pratt
 - d. Golden Anderson
- B. Eccentric Plug Valve, 24" to 48"
 - 1. Non-lubricated type eccentric valves rated for 100 psig service. Valves shall have drip-tight shutoff with pressure from either direction, and cast iron bodies. Exposed service valves shall have flanged ends in accordance with ASME

- B16.1. Buried service valves shall have mechanical joint ends, unless otherwise noted.
2. Plug shall be all metal, matching body with round or rectangular port, fully ported to match the connecting pipe area, and coated with Buna-N, welded nickel seats, self-lubricating stainless steel stem bearings, and stem seal multiple V-rings or U-cups with O-rings of nitrile rubber, with grit seals on both upper and lower bearings. Totally enclosed, geared, manual operator with handwheel or 2-inch nut. Size operator for 1.5 times the maximum shutoff pressure differential for direct and reverse pressure, whichever is higher.
 3. Buried valves shall have extended bonnets with an enclosed drive shaft that allows the geared operators to be mounted above grade. The moving parts of the valve and operator shall be enclosed in a housing to prevent contact with the soil. The extended bonnet shall be standard weight steel pipe with epoxy coating. The enclosed drive shaft extension shall be 304 SSTL. The installation contractor shall brace the extended bonnet outer tube at a maximum spacing of 10 feet apart.
 4. Manufacturers and Products:
 - a. DeZurik
 - b. Valmatic
 - c. Pratt
 - d. Golden Anderson

Part 3 Execution

3.1 Examination

- A. After becoming familiar with all details of the work, verify all dimensions in the field, and advise the Engineer of any discrepancy before performing the work.

END OF SECTION