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July 20, 2016

WA Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

ATT: David Dunn, Water Quality Program – Financial Management

RE: Request for American Iron and Steel Waiver based on Availability, WQC-2016-LibWSD-00091; Water Reclamation Facility Upgrades, Phase 2

Dear Mr. Dunn,

Liberty Lake Water and Sewer District is requesting an Availability Waiver from the American Iron and Steel requirements for three (3) combination wafer swing check valves (specification section 40 05 51). These valves required for this application because:

1. These 18" valves are wafer-type valves that have a very short line length (4.25") as compared to standard check valves (line length 40"). They are required due to the limited space in the strainer area of the Filtration Building.

2. Unlike standard check valves that are typically manufactured from cast or ductile iron, these valves are 316 stainless steel suitable for the potential exposure to concentrated chemicals used in the process (i.e. 48% aluminum sulfate, 50% sodium hydroxide).

3. Unlike standard check valves that are designed for higher pressure applications, these valves are designed to fully open at the very low line velocities required for this application minimizing pressure loss through the valve. This is required due to the low available hydrostatic head.

The RitePro valves are the only valves that could be found suitable for this application. They are the same valves as those supplied by the membrane manufacturer (Zenon/GE), under a separate contract for this project. The Membrane Filtration System contract with Zenon/GE is exempt from AIS requirements. (Membrane filtration systems are listed as "not a construction material" on the EPA 3/20/14 guidance document, item #22 on pages 8 & 9.)

The valves that the District is requesting a waiver for are 18" RitePro Combination Wafer Swing Check Valves model SA10. The total cost of the 3 valves is $39,705.84.

The EPA can grant a waiver from the requirement if the "iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;" The district has been unable to locate valves that meet the specifications that are produced domestically. See attached emails from valve suppliers and letter from the design engineer documenting our attempts to locate AIS compliant valves that can meet our specifications.

Sincerely,

BiJay Adams
General Manager

Cc Eliot Sherman, EPA Office of Water Management
Cynthia Wall, Ecology Water Quality Program
Ginny Darrell, Century West Engineering

Encl. Specification Section 40 05 51 – see paragraph 2.07
Product cut sheet
Correspondence from supplier and from the design engineer

SECTION 40 05 51
PROCESS VALVES

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. The work included in this section consists of furnishing and installing valves, operators, and piping specialties as specified herein and as indicated on the Drawings.

B. Not all the valves and operators listed in this section are necessarily used for this project.

1.02 RELATED WORK

A. Section 01 33 00 – Submittals Procedure

B. Section 01 60 00 – Product Requirements

C. Section 01 75 00 - Testing, Start-Up, and Training

D. Section 09 96 00 – High Performance Coatings

E. Division 26 – Electrical

F. Division 40 – Process Interconnections

1.03 REFERENCE STANDARDS

A. American Society of Mechanical Engineers:

1. ASME B1.20.1 - Pipe Threads, General Purpose

2. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings.

3. ASME B16.5 - Pipe Flanges and Flanged Fittings: NPS 1/2 through 24 - Metric/Inch Standard.

B. American Water Works Association (AWWA)

1. American Water Works Association (AWWA) M44 Distribution Valves: Selection, Installation, Field Testing, and Maintenance, Latest Edition.

2. AWWA Manual M49 Butterfly Valves: Torque, Head Loss, and Cavitation Analysis

3. AWWA Manual M51 Air-Release, Air/Vacuum & Combination Air Valves

4. AWWA Standard C500 Metal-Seated Gate Valves

5. AWWA Standard C504 Rubber-Seated Butterfly Valves

6. AWWA Standard C507 Ball Valves

7. AWWA Standard C508 Swing-Check Valves

8. AWWA Standard C509 Resilient-Seated Gate Valves

9. AWWA Standard C512 Air-Release, Air/Vacuum & Combination Air Valves

10. AWWA Standard C515 Reduced-Wall, Resilient-Seated Gate Valves

11. AWWA Standard C516 Large-Diameter Rubber-Seated Butterfly Valves

12. AWWA Standard C517 Resilient-Seated Cast-Iron Eccentric Plug Valves

13. AWWA Standard C518 Dual-Disc Swing-Check Valves

14. AWWA Standard C520 Knife Gate Valves

15. AWWA Standard C530 Pilot-Operated Control Valves

16. AWWA Standard C541 Hydraulic and Pneumatic Cylinder and Vane-Type Actuators for Valves and Slide Gates

17. AWWA Standard C542 Electric Motor Actuators for Valves and Slide Gates

18. AWWA Standard C550 Protective Interior Coatings for Valves and Hydrants

19. AWWA Standard C800 Underground Service Line Valves and Fittings

20. AWWA Standard C606 Grooved and Shouldered Ends

1.04 SUBMITTALS

A. Furnish submittals in accordance with Section 01 33 00 - Submittal Procedures.

1. Product Data: Submit product data sheets for all items proposed for use.

1. Wiring and plumbing diagrams.

2. Valve Schedule: Submit final valve schedule that includes valve schedule tag number, location, size, and function.

B. Operation and Maintenance Manuals: Furnish in accordance with Section 01 33 00 - Submittal Procedures.

C. Warranties: Installation and Manufacturer's Warranty

1.05 BIDDING

A. The cost for valves, operators, and piping specialties shall be included in the bid items for each piping system or equipment item for which they are required, complete, operable, and coated.

1.06 WARRANTY

A. Installation Contractor shall warrant the materials and installation to be free of defects in materials and workmanship for a period of two (2) years from the Date of Substantial Completion and in accordance with the General Conditions.

B. Manufacturer's Warranty: Contractor shall submit manufacturer's standard warranty for all products furnished.

PART 2 PRODUCTS

2.01 GENERAL

A. The Contractor shall furnish and install all valves as shown and specified.

B. Undesignated Valves. Where indicated on the Drawings, Contractor shall furnish and install undesignated valves. Valves shall be first class quality and suitable for the indicated service. Valves shall be subject to approval of the Engineer.

C. Valve-operating units, stem extensions and other accessories shall be furnished and installed by the Contractor where shown, or where required in the opinion of the Engineer, to provide for convenience in operation.

D. Where buried valves are indicated, the Contractor shall furnish and install valve boxes to grade.

E. All valves shall be new and of current manufacture.

F. All exposed shut-off valves, 6 inch and larger, and valves with operating stands shall have geared operators with position indicators.

G. Where buried valves call for position indicators they shall be provided with valve boxes and covers containing position indicators.

H. The flanges of valves may be raised or plain faced.

1. Flanges of valves for water working pressures of 175 psi or less shall be faced and drilled to 125 lb. American Standard template.

2. Flanges of valves for water working pressures greater than 175 psi shall be faced and drilled to 250 lb. American Standard template.

I. Valves installed in grooved piping system shall be groove joint, unless otherwise specified herein. Use of flanged adapters is not acceptable, unless approved by the Engineer.

J. Unless otherwise specified, each valve body shall be tested under a test pressure equal to twice its design water working pressure.

K. Unless otherwise specified, all interior bronze parts of valves except gate valve stems shall conform to the requirements of the "Specification for Composition Bronze or Ounce Metal Castings", (ASTM B62). Gate valve stems shall be of bronze containing not more than 5% of zinc nor more than 2% of aluminum, and shall have a minimum tensile strength of 60,000 psi, a yield strength of 40,000 psi, and an elongation of at least 10% in 2 inches. Compliance shall be determined by a test coupon poured from the same ladle from which the valve stems to be furnished are poured.

L. Except where otherwise provided, the exterior surfaces of all submerged valves shall be epoxy coated with 8 mils of "Scotchcoat" or Miccrow 650 or approved equal.

M. Unless otherwise specified, interior coating of valves shall be fusion bonded epoxy coating minimum 15 mils DFT meeting AWWA C550-09 Protective Epoxy Interior Coating for Valves and Hydrants.

N. Where designated, certain valves shall be furnished with electric operators provided by the valve manufacturer.

1. All operators of a given type shall be furnished by the same manufacturer.

2. Where these operators are supplied by different valve manufacturers, the Contractor shall coordinate their operator selections to provide uniformity of each type of electric operator.

3. Operator sizing and operation shall be the responsibility of the valve manufacturer, who shall design the rating of the operator, the rate of operation, and other aspects.

4. Care must be taken to assure that electric operators and controls for valves located in Classified Areas conform to restrictions to be explosion-proof if required.

O. Valves and operators in particular locations may require a combination of units, sensors, limit switches and controls specified in this or in other divisions of these Specifications.

1. It shall be the responsibility of the Contractor to properly assemble and install these various items so that all systems are compatible and operating properly.

2. The relationship between interrelated items shall be clearly noted on shop drawing submittals.

P. Unless specifically required to be equipped with other types of operators, all valves with centerline more than 6 feet above the operating floor shall be equipped with chain wheels and operating chains.

1. Each chain wheel operated valve shall be equipped with a chain guide, which will permit rapid handling of the operating chain without "gagging" of the wheel.

Q. A hanging bracket or hook shall be provided on an adjacent wall or structure to provide for securing the chain out of the walking area.

R. Valves shall be identified in accordance with Section 40 05 53 – Identification of Process Piping and Equipment.

S. Valves in piping systems shall be adequately supported to prevent their load from being imposed on any operating equipment, and in accordance with best practices to resist dislocation when adjacent piping or support is removed for maintenance, and to prevent injury to operation or maintenance personnel.

2.02 PLUG VALVES (STANDARD, 3-WAY, V-PORT)

A. Service

1. Headworks Effluent (HE)

2. MF Tank Feed (MFI) (glass-lined)

3. Membrane Filtration Reject (MFR) (glass-lined)

4. Clarifier Effluent (CE) (glass-lined)

5. Building Drain Pumping (DP) system

B. Manufacturer

1. Dezurik

2. Victaulic

3. Milliken Millcentric

4. Pratt

5. Engineer-approved equal.

C. General.

1. AWWA Standard C517 Resilient-Seated

2. All plug valves from single manufacturer.

3. Non-lubricated, eccentric-type

4. Joints:

a. 2" and less: screwed ends

b. 4" and greater, exposed: grooved ends AWWA C-606

c. 4" and greater, buried: mechanical joint ends

D. Construction.

1. Body and bonnet: Ductile or cast iron with raised seats

2. Seats: Welded-in overlay of high nickel content surfaces contacting the plug

3. Bearings: Permanently lubricated, Type 316 stainless steel

4. Design: Bolted bonnet

5. Packing: 4" and larger valves can be repacked without removing the bonnet, packing is adjustable.

6. All exposed nuts, bolts, springs and washers shall be zinc plated.

7. Flanges: ANSI B16.1 125-pound

8. Plug: Resilient faced plug, neoprene

9. Valves installed in solids lines shall be installed with the seat on the upstream side.

10. Valves in glass-lined piping systems shall be glass-lined or as noted as glass-lined in Paragraph 2.02.A above.

E. Operators.

1. Lever or gear actuators and tee wrenches, extension stems, floor stands, chain-wheels, etc., as required or indicated on the Plans.

2. Valves 4" or less may have lever or t-wrench operators.

3. Valves greater than 4" shall have gear operators.

4. All gearing shall be enclosed in a semi-steel housing and be suitable for running in a lubricant with seals provided on all shafts to prevent entry of dirt and water into the actuator.

5. The actuator shaft and the quadrant shall be supported on permanently lubricated bronze bearings.

6. Actuators shall clearly indicate valve position, and an adjustable stop shall be provided to set closing torque.

7. All exposed nuts, bolts and washers shall be zinc plated. Type and position of operators shall be approved by the Engineer for each valve.

8. Chain wheel and chain operators shall be provided for all valves with the operator 6' or greater above the floor. Chain hangers shall be mounted near all valves with chain wheel operators to allow hanging the chains out of operating areas.

9. Valves and gear actuators for buried or submerged service shall have seals on all shafts and gaskets on the valve and actuator covers to prevent the entry of water. Actuator mounting brackets for buried or submerged service shall be totally enclosed and shall have gasket seals. All exposed nuts, bolts, springs and washers shall be stainless steel.

2.03 KNIFE GATE VALVES

A. Service

1. MF Tank Feed (MFI)

D. Manufacturer

1. Dezurik or

2. Engineer-approved equal.

E. Type: Stainless Steel Resilient Seated

F. Style: Lug

G. Body: ASTM A351 CF8M

H. Yoke: ASTM A351 CF8

I. Knife: ASTM A240 316 SS

J. Packing: PTFE

K. Pressure Rating: 150 PSI

L. Operator: Hand Wheel

M. Design: MSS SP-81

N. Flange Drilling: ANSI B16.5

O. Material: ASME B16.34

P. Operator: Hand wheel (chain required if greater than 5 feet above floor)

2.04 GATE VALVES

A. Service:

1. Utility Water (UW) System

D. Gate valves 2 inches and under shall have threaded or grooved ends and shall be 200 lb. WOG with bronze body and trim, union bonnet, rising stem and solid wedge disc.

E. Gate valves 2&1/2 inches and over shall have grooved ends and shall be 200 lb. WOG with iron body, bronze trim, Resilient Seat or resilient wedge. Valve have fusion bonded epoxy coating. Valve shall comply with AWWA Standard C509 Resilient-Seated Gate Valves.

2.05 MUD VALVES

A. Service:

1. Tank and Sump Gravity Drain (DG) lines

D. Manufacturer

1. Trumbull Industries, Inc.

2. Engineer-approved equal.

E. Material: Type 316 SS, passivated per ASTM A-380

F. Flanged connection, ANSI B16.1 125-pound

G. Seat: Resilient

H. Input torque: 450 foot-pounds

I. Leakage Rate: 1 quart per hour

J. Maximum stem torque: 35 foot pounds

K. Valves inside tanks shall be furnished complete with a non-rising extension stem, wall brackets, and operating nut so that the valve can be operated from above the basin. Valves in shallow sumps do not need extension stems, but shall be provided with an operating nut.

2.06 CAST OR DUCTILE IRON SWING CHECK VALVES

A. Service – on each pump discharge:

1. Utility Water (UW) System

2. Building Drain Pumping (DP) System

3. Membrane Filtration Recycle (MFR)

D. Manufacturer

1. DeZurik, Sartell MN

2. Victaulic, Easton, PA

3. Henry Pratt Company, Aurora IL

4. Kennedy Valve Company, Elmira NY

5. Mueller Company, Chattanooga TN

6. Val-Matic Valve & Manufacturing, Elmhurst IL

7. Engineer-approved equal

E. Description

1. AWWA C508

2. Type: Swing, resilient-seated, with outside lever and adjustable weight.

3. Pressure Rating: 200 psig

4. Flow Area: Full open, equal to connecting nominal pipe diameter.

5. Mounting: Horizontal or vertical

6. End Connections: ASME B16.1, flanged, or grooved per ANSI/AWWA C606

F. Materials:

1. Body and Cover: ASTM A126, cast iron or ASTM A536, ductile iron

2. Disc: 316 Stainless Steel

3. Seat: Buna-N/NBR, ASTM D2000

4. Hinge Pin and Key: 316 Stainless steel

5. Packing and O-Ring: Buna-N/NBR

6. Connecting Hardware: Type 316 stainless steel

7. Interior/Exterior Coating: Fusion-Bonded Epoxy Coating (MFE/BP)

G. Factory Testing: Testing shall be performed in accordance with AWWA C-508.

2.07 COMBINATION WAFER SWING CHECK VALVES

A. Service

1. MF Tank Feed (MFI)

D. Manufacturer

1. Bray/Ritepro Corporation or

2. Engineer-approved equal.

E. Style: Wafer

F. Body: ASTM A351 CF8M

G. Disc: ASTM A351 CF8M

H. Shaft: ASTM A479-316

I. Seat: EPDM

J. Pressure Rating: 125 PSI

K. Accessories: Dual weights for low flow applications

2.08 AIR BUTTERFLY VALVES.

A. Service: Low Pressure Air (BL)

B. Manufacturer:

1. Keystone High Performance

2. Bray High Performance, or

3. Engineer-approved equal.

C. Service Temperature: 300 deg F minimum (seats and seals shall be rated for this temperature).

D. Style: Lug

E. Body: 316 SS

F. Disc: 316 SS

G. Shaft: 17-4 PH SS

H. Seat: RTFE

I. Backing Ring: SS

J. Packing: PTFE

K. Suitable for air tight shut-off

L. Operator: Geared operator with handwheel, or chain operated wheel if 6' or greater above the floor.

2.09 BUTTERFLY VALVES FOR LIQUID SERVICE

A. Service

1. MF Tank Feed (MFI)

2. MF Tank Gravity Drain (DG)

3. Utility Water (UW)

D. Manufacturer

1. Bray Series 30/31

E. Style: Lug Pattern

F. Body: Epoxy Coated Cast Iron

G. Disc: 316 Stainless Steel

H. Shaft: 416 SS

I. Seat: EPDM

J. Bi-directional Pressure Rating, minimum: 150 PSI

K. Manual Operator: Series 5 declutchable manual gear operator

2.010 PNEUMATIC ACTUATORS (DOUBLE-ACTING)

A. Service

1. MF Tank Feed (MFI)

2. MF Tank Gravity Drain (DG)

D. Manufacturer

1. Bray Series 92/93 or

2. Engineer-approved equal.

E. Supply Pressure: 550 kPa (80 psig)

F. Body Material: Extruded Aluminum Alloy, Anodized

G. Travel Stop: Alloyed Steel

H. End Caps: Die Cast Aluminum Alloy

I. Pistons: Die Cast Aluminum Alloy

J. Output Shaft: Carbon Steel (Zinc Plated)

K. Shaft Bearings: Acetal

L. Fasteners: Stainless Steel

M. 'O' rings: Buna-N

N. Air Solenoid: 4-way, NEMA 4, 120Vac/1ph/60Hz or equal

O. Air Supply Connections: ¼" NPT, 2 places