

November 17<sup>th</sup>, 2020

Lindsey Jones Environmental Program Supervisor Water Infrastructure Finance Authority of AZ 100 N. 7<sup>th</sup> Ave Suite 130 Phoenix, AZ 85007

# Reference: Broadway Rd. Water Treatment Facility Project

Subject: AIS Availability Waiver Request for Arsenic Filtration System Valves

# Dear Lindsey,

This letter is to request a waiver from AIS requirements for availability for motor-operated butterfly valves for the arsenic filtration system on the Broadway Rd. Water Campus Project. The support for a waiver is summarized in the below descriptions of the project's specifications, schedule, and material availability.

## **Summary of Specifications**

The owner of the project, the City of Buckeye, has specified 3 approved manufacturers for the arsenic filtration system valves: Henry Pratt (a Mueller Company), Dezurick, and Value Valve. The city has approved these manufacturers because of the following considerations:

- 1. City operators require a high level of performance, durability, and reliability since the valves are critical in their treatment process.
- 2. The City must have prior favorable experience with the valve manufacturers' local field support representatives and sales personnel
- 3. City operators must be experienced with servicing, maintaining, ordering replacement parts, and troubleshooting the valves
- 4. The valves must meet standard AWWA C504 and other specified codes to be interchangeable with components in all city facilities

## Summary of Schedule

The valves are scheduled to be installed in mid-February 2021. The valves are part of the extensive network of above-ground piping at the Arsenic Treatment Facility. Because of the total durations of the above-ground piping work, as well as the follow-on startup and commissioning activities, the arsenic filtration system valves and piping are on the critical path of the schedule. Delays to these activities would present significant risk to the project and the City of Buckeye.

#### Summary of Availability

Initial outreach to suppliers prior to March of 2020 did not indicate any availability constraints from the approved suppliers. However, after design work was completed in Summer of 2020 enabling the procurement of the valves, significant delays to the valves were reported from all domestic sources. We then employed our procurement division, Kiewit Supply Network, to conduct a nationwide search for the approved domestic valves, as well as for alternative suppliers. Kiewit Supply Network received confirmation of similar delays to all the domestic valves suppliers, and received quotes from several alternative, non-specified suppliers which were also found to be outside of the project's schedule and/or specifications. We concurrently pursued information for the one approved non-domestic valve supplier, Value Valve, and found their materials to be within the availability and specifications of the project. A summary of the valves and their availability are shown in Table 1 below:



Supplier	AIS Compliant?	Meets Spec?	Plan Installation Date	Quoted Lead Time (weeks)	Expected Submittal Approval	Expected Delivery	Notes	
Approved Manufacturers								
Henry Pratt / Mueller	YES	YES	2/16/2021	24	12/8/2020	5/25/2021		
Dezurik	YES	YES	2/16/2021	30	12/8/2020	7/6/2021	Actuators cannot ship separately	
Value Valve	NO	YES	2/16/2021	6	11/19/2020	12/31/2020		
Non-Approved Manufacturers								
ABZ Valves	YES	NO	2/16/2021	6	12/8/2020	1/19/2021	do not meet AWWA C504	
GA Valves	YES	NO	2/16/2021	20	12/8/2020	4/27/2021		
Bonney Forge	YES	NO	2/16/2021	24	12/8/2020	5/25/2021		
AVK Valves	YES	NO	2/16/2021	12	12/8/2020	3/2/2021		

## Table 1: BRWC Arsenic System Valve Supplier Selection Table

## Conclusion

Based on the information above, KHJV requests a waiver of the AIS requirement, and approval to procure products from Value Valves, a non-domestic source approved by the City and the Engineer of Record. Please do not hesitate to contact me at (808) 352-8551 if there are any questions.

Sincerely

Gabriel Gaytan Project Manager Kiewit/Haydon, a Joint Venture

cc: Chris Williams, Mike Hoyer, Brian Rapp

Attached: Specification 46 61 30 – Arsenic Removal Filtration System

This waiver request was submitted to the EPA by the state of Arizona. All supporting correspondence and/ or documentation from contractors, suppliers or manufacturers included as a part of this waiver request was done so by the recipient to provide an appropriate level of detail and context for the submission. There may be documents with project diagrams, schedules, and supplier correspondence in formats that do not meet the Federal accessibility requirements for publication on the Agency's website. Hence, these exhibits have been omitted from this waiver publication. They are available upon request by emailing DWSRFWaiver@epa.gov.

- G. All PLC and Remote I/O Cabinets shall be UL 508A labeled.
- H. Automation shall be for full, unattended operation including normal filtration, backwashing and purge (rinse) cycles. The PLC shall be Rockwell Automation (Allen-Bradley) fitted with Ethernet I/P communications capabilities. The PLC shall be connected to each Well Site Ethernet switch via CAT-6 cable for monitoring of signals. The PLC shall be equipped with remote access modem connection for maintenance, online assistance and program upgrades. The control cabinet shall include a Rockwell Automation (Allen Bradley) PanelView graphic Operator Interface display panel housed in a NEMA 4X steel cabinet mounted on the filter or remotely wall mounted as specified. Double pole, double throw relays shall be used to isolate all outputs from field devices.
- I. Differential pressure switch shall be adjustable 0 to 70 psi. Operation will include filtration timer with differential pressure override and backwash timer with interlocking relays.
- J. Separate operator-adjustable set points and timers shall be included for all normal operating cycles. Set points and default values are discussed in the Water System Control Narrative TM.
- K. Filter control cabinet shall include terminal for receipt of water level signal and shall also include provisions for automatic operation based upon signal received.
- L. Filter Control Panel PLC and associated Operator interface programming shall be performed by the manufacturer whose system integrator has at least ten years of experience in the programming of PLC's and graphic display panels in water filtration and treatment applications.
- M. The DB will, at their discretion and with sufficient notice to the manufacturer, witness the factory testing of the hardware and software of the Filter Control Panel prior to shipment. Notice for factory testing shall be given to the DB three (3) weeks prior to testing. One (1) member of the DB team shall attend for the duration of the test.
- N. The manufacturer shall demonstrate that he has and does maintain a library of all programs for all systems furnished with PLC based controls.
- O. The manufacturer shall coordinate with the DB's System Integrator to provide necessary data to allow for the System Integrator to display required Arsenic Removal information at the plant SCADA level. Additional information is also provided in Section 40 95 20 PLC Based Systems Software.
- 2.10 ELECTRICAL COMPONENTS AND ACCESSORIES
  - A. Electrical components and accessories shall meet the requirements within this Specification Section as well as those defined in the Section 26 specifications.
- 2.11 AUXILIARY EQUIPMENT, MATERIALS AND COMPONENTS
  - A. All auxiliary equipment, materials and components shall be capable of functioning properly under the design system pressure and flow rate.
  - B. Butterfly Valves

- 1. The FSS shall provide the necessary quantity of butterfly valves to control the operation of the Filtration System. Butterfly valves and actuators shall be furnished in accordance with the requirements specified herein.
- 2. Rubber Seated Butterfly Valves 25 to 150 psi (AWWA)
  - a. General: Butterfly valves for steady-state water working pressures and steadystate differential pressure up to 150 psi and for fresh water service having a pH range from 6 to 12 and temperature range from 33 to 125 degrees F shall conform to AWWA C504 and be as indicated. Valves subjected to steady state working pressures and steady state differential pressures from 25 to 150 psi in sizes 3inches through 24-inches shall be rated for Class 150B with actuator sized for Class 150B.
  - b. Valves shall be of the body type, pressure class, end joint, and actuator indicated.
  - c. Construction: Unless otherwise indicated, materials of construction shall be in accordance with AWWA C504, suitable for the service. Seats shall be positively clamped or bonded into the disc or body of the valve, but cartridge-type seats that rely on a high coefficient of friction for retention shall not be acceptable. Seat material shall be guaranteed to last for at least 75 percent of the number of cycles in the AWWA C504 proof-of-design test without premature damage.

Description	Material Standards				
Valve bodies	Ductile iron, ASTM A 536, grade 65-45-12 or 70-50-05				
End flanges	Same material as valve bodies				
Valve shafts	Stainless steel ASTM A 240 or A 276, Type 316				
Valve discs	Same material as valve bodies				
Rubber seats	New natural or synthetic rubber				
Seat mating surfaces	Stainless steel, ASTM A 240 or A 276, Type 316				
Clamps and retaining rings	Type 316 retaining rings and cap screws				
Valve bearings	Self-lubricating materials per AWWA C504				
Shaft seals	Resilient non-metallic materials suitable for service				
Painting and coating	Refer to Section 09 96 00 – Protective Coating				

d. Manual Actuators: Unless otherwise indicated, manually-actuated butterfly valves shall be equipped with a handwheel and 2-inch square actuating nut and position indicator.

- e. Electric Actuators: Electric actuators shall meet the requirements of AWWA C540. Electric actuators in open and close service shall be rated to produce output torque of at least 1.5 times the required valve maximum seating or maximum dynamic torque, whichever is greater. For valves in modulating service with dynamic torque exceeding the seating torque, the rated output torque of the actuator shall be twice the dynamic torque required by the valve. Actuator rated torque is defined as pullout torque rated at 10 percent below the rated voltage of the motor. The torque switch shall be field set at no greater than 60 percent of the maximum actuator rated torque for open/close service. After plant startup, the manufacturer shall prepare a certification including a torque curve to demonstrate that the torque requirements have been met.
- f. Manufacturers, or Equal
  - 1) Value Valve
  - 2) DeZurik
  - 3) Mueller Company
  - 4) Henry Pratt Company
- C. Check Valves
  - 1. The FSS shall provide the necessary quantity of check valves as shown on the Contract Drawings. Check valves shall be furnished in accordance with the requirements specified herein.
  - 2. Rubber Flapper Swing Check Valves
    - a. General: Rubber flapper swing check valves for water, sewage, sludge, and abrasives shall have full pipe size flow areas, one moving part only, and body seats at 45 degrees to permit horizontal and vertical up-flow. Valves shall be designed for a minimum water-working pressure of 150 psi, with a flanged cover plate holding down the rubber flapper. The valves shall be of the non-clog design.
    - b. Body: The valve body and cover shall be of cast iron conforming to ASTM A 126 with flanged ends conforming to ASME B 16.1. There shall be a threaded tapping in the bottom of the body for insertion of a back-flow device, and provision for mounting of a signal switch.
    - c. Disc: The valve disc or flapper shall be of Buna-N or other best-suited elastomer one-piece construction, precision molded, with integral O-ring type sealing surface, steel and nylon or fabric reinforced, with non-slam closing action through a 35 degree disc stroke, for bubble-tight shut off at high and low pressures.
    - d. Manufacturers, or Equal
      - 1) VAL-MATIC (Valve and Manufacturing Corporation)
      - 2) APCO (Valve and Primer Corporation)
- D. Gate Valves

STANTEC – ARSENIC PROCUREMENT EOP 181300650 – BROADWAY ROAD WATER CAMPUS