



September 20, 2021

Jennifer L. McLain
Director of the Office of Ground Water and Drinking Water
United States Environmental Protection Agency
Washington, D.C. 20460

**Re: NRV Regional Water Authority 2020 Waterworks Improvements Phase II –
American Iron and Steel (AIS) Availability-Based Project-Specific Waiver Request
for 6-inch Reduced Pressure Zone Backflow Preventer**

Dear Mrs. McLain or Whomever This May Concern:

CHA Consulting, Inc. (CHA) is serving as the Engineer for the NRV Regional Water Authority 2020 Waterworks Improvements Phase II. This project is located at 3515 Peppers Ferry Road NW, Radford, VA 24141. The contract effective date is September 15th, 2020 and the notice to proceed (NTP) occurred on October 19th, 2020. Construction is currently taking place for this water treatment plant modernization project. The work shall be substantially completed within 913 calendar days of the NTP (April 19th, 2023), and the work shall be fully complete within 943 calendar days of the NTP (May 19th, 2023).

Throughout the ongoing shop submittal approval process, it became apparent that an AIS compliant 6-inch reduced pressure zone backflow preventer cannot be provided as specified. The Contractor, Ulliman Schutte, immediately made CHA aware, and CHA proceeded to notify Keith Kornegay, Project Team Leader with the Virginia Department of Health (VDH) Office of Drinking Water in June of 2021. Keith has served as a communicator between CHA and the EPA on this matter for the previous three months to ensure all due diligence was taken before requesting a waiver.


As required by the EPA, Ulliman Schutte provided written documentation that the specified manufacturers cannot locate an AIS compliant 6-inch RPZ backflow preventer that meets the project specifications. The EPA/Cadmus then completed product research and were unable to locate an approved equal. This product is necessary for the successful function of the water treatment plant. Only one is required and has been quoted at \$ [REDACTED]. The 6-inch PW line that includes the RPZ is scheduled to be installed on February 24th, 2022.

A 6-inch reduced pressure principle backflow prevention assembly was part of an approved waiver dated March 19th, 2021 in Marina, California because no domestic manufacturers produced alternatives that met the project's technical specifications. However, the state of Virginia has yet to receive a waiver request for the product described in this waiver request.

Attached you will find copies of the following:

<i>Document Name</i>	<i>Purpose</i>
1. Drawing sheet D5-102	Location of the 6-inch RPZ
2. Specification Section 400567	Project technical specification requirements
3. Ferguson Waterworks Transmittal Form	Verification that specified manufacturers cannot provide an AIS compliant RPZ
4. Ferguson Waterworks Quote	Quoted product price for the required one unit

Sincerely,



Lindsay Swain, P.E.
Southern US Water/Wastewater Section Manager
Project Manager
CHA ~ Responsibly Improving the World We Live In

This waiver request was submitted to the EPA by the state of Virginia. 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.

SECTION 400567 – SPECIALIZED PRESSURE AND FLOW CONTROL VALVES

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Surge relief and anticipation valves.
 - 2. RPZ backflow preventers
 - 3. Pressure Reducing Valves
 - 4. Solenoid Valves
 - 5. Stainless Steel Solenoid Valves.

1.2 QUALITY ASSURANCE

- A. See Section 400551 "Common Requirements for Process Valves."

1.3 SUBMITTALS

- A. Shop Drawings:
 - 1. See Section 400551 "Common Requirements for Process Valves."
- B. Operation and Maintenance Manuals:
 - 1. See Section 017823 "Operation and Maintenance Data."

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
 - 1. Surge Relief/Anticipation Valve:
 - a. Ross 50RWR-A
 - b. Cla-Val 52-03
 - c. Or approved equal.
 - 2. Reduced Pressure Zone Backflow Preventers.
 - a. Watts Regulator Company (1/4 Inches to 3 Inches) Model 909 M1 QT-S.
 - b. Zurn Wilkins Model 375A.
 - c. Or approved equal.
 - 3. Pressure Reducing Valve
 - 4. Solenoid Valves Solenoid Valves
 - a. Asco Series 210
 - b. Or equal

2.2 REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTERS

- A. General:
 - 1. Conform to AWWA C511.

- B. Materials:
 1. Valve Body and Cover: Stainless steel.
 2. Elastomers: EPDM.
 3. Interior Coating: 12 mils epoxy.
 4. Fasteners: Type 304 Stainless Steel.
 5. Check Disc: Reversible silicone.
 6. Protective strainer: Bronze Body.
- C. Design Requirements:
 1. Maximum Pressure Rating: 250 psi.
 2. Hydrostatic Test Pressure: 350 psi.
 3. Temperature Range: 32 DegF to 140 DegF.
- D. Accessories:
 1. Provide a strainer with 20-mesh screen on supply.
 2. Butterfly valves integral with unit.
 3. Provide valve air gap and piping to drain.

2.3 PRESSURE RELIEF AND SURGE ANTICIPATION VALVES

- A. The pressure relief/surge anticipator control valve shall control high pressures and power failure surges by bypassing system pressure that exceeds the high-pressure control setting and also by opening a preset amount when sensed pressure decreases below a preset minimum in anticipation of a surge.
- B. Must be NSF 61 approved.
- C. Materials:
 1. Valve bodies:
 - a. Ductile Iron in ASTM A536 (Standard).
 - b. Flanged end only drilled with ANSI B16.1, Class 150.
 - c. Angle body valve.
 2. Bonnet:
 - a. Ductile Iron.
 3. Valve Trim, Internal Trim Parts, and Seats:
 - a. Stainless steel.
- D. Approved manufacturers:
 - a. Ross
 - b. Or approved equal
- E. Design Requirements:
 1. Design for ~~250~~ 300 psi.
- F. Pilot Control System:
 1. ~~High Pressure Surge Relief Pilot: The pressure relief/sustaining pilot shall be a direct acting, adjustable, spring loaded, diaphragm valve designed to permit flow when controlling pressure exceeds the adjustable spring setting. The pressure relief pilot control is normally held closed by the force of the compression in the spring above the diaphragm and it opens when the pressure acting on the underside of the diaphragm exceeds the spring setting. Pressure relief~~

pilot control sensing shall be upstream of the pilot system strainer so accurate control may be maintained if the strainer is partially blocked. A full range of spring settings shall be available in ranges from 0 to 400 psi. Pilot to be manufactured by control valve manufacture. Pilot shall be NSF certified. The relief valve shall be external pilot operated, with free floating piston (operated without springs, diaphragm or levers). It shall contain a single full-ported seat, with seat bore equal to 25% of the diameter of the seat. For true alignment (to correct lateral thrust and stem binding), the piston shall be guided above and below the seat a distance equal to no less than 75% of the diameter of the seat. The piston shall be cushioned and so designed as to ensure positive closure.

2. Low Pressure Pilot: The pressure reducing pilot control shall be a direct acting, adjustable, spring loaded, normally open, diaphragm valve designed to open when the sensed pressure falls below the control setting and close when pressures are normal. The pilot control is held open by the force of the compression on the spring above the diaphragm and it closes when the delivery pressure acting on the underside of the diaphragm exceeds the spring setting. The pilot control system shall include a fixed orifice. The pilot control shall have a second downstream sensing port which can be utilized to install a pressure gauge. The pilot control system shall include all required control accessories, equipment, control tubing and fittings. A full range of spring settings shall be available in ranges of 0 to 400 psi. Pilot to be manufactured by control valve manufacture. Pilot shall be NSF certified. The valve shall be furnished with an indicator rod to show position of piston opening, and pet-cocks for attachment to valve body for receiving gauges for testing purposes. The design shall be such that repairs and dismantling internally of main valve may be made without its removal from the line.
3. Flow Limiter: The pilot system shall contain an adjustable flow limiter to limit main valve travel during low pressure opening without affecting high pressure relief valve travel. This unique hydraulically operated flow limiter has two calibrated orifices, each positioned proportional to valve position, to vary main valve cover control chamber operating pressure. The hydraulically operated flow limiter regulates flow through main valve pilot systems based on valve position to prevent main valve exceeding predetermined flow. A manually adjustable orifice provides reference valve position. Valve position is linked to an integral sensor orifice. When valve position is below reference set point of the hydraulically operated flow limiter, it allows unhindered pilot system flow. As valve position rises and approaches the reference control setting, the hydraulic flow limiter limits pilot system outward flow to build pressure in the main valve control chamber. Pressure continues to build until flow equals and hydraulically locks the valve at the flow limiters valve position set point. Mechanical flow limiters shall not be permitted. The pilot valves, controlling operation of the main valve, shall have a range of adjustment, be easily accessible, and arranged to allow for easy removal from the main valve while the main valve is under pressure. The pilot valves, speed control valve, external strainer with blow-off, isolation valves, and all associated rigid brass piping and fittings (with the exception of a separate static pressure sensing line, if required) shall be factory assembled and furnished with the valve.

G. Accessories:

1. Valves on raw water service shall have a high efficiency strainer
2. Disc position indicator.
3. Fusion bonded epoxy coating, NSF-61 rated.
4. Position indicator.
5. Closing speed needle valve.

2.4 PRESSURE REDUCING VALVES (3-6 INCH)

A. Acceptable manufacturers:

1. Fisher, Type 92W, 6492L.

2. Cla-Val 50-01.
 3. Or approved equal.
- B. Materials:
1. Body: Steel.
 2. Cage: Cast iron.
 3. Piston, seat ring and cylinder: 416SS.
- C. Design requirements:
1. Flanged connections.

2.5 SOLENOID VALVES

- A. Materials:
1. Body, Tube, Core and Springs: Stainless Steel
 2. Seat: PTFE
 3. Insulation: Class F.
- B. Design requirements:
1. 110 VAC.
 2. Two-way, normally closed.
 3. Enclosure: NEMA 4x
 4. Working pressure, air and water: 250 psig.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Refer to Section 400551 "Common Requirements for Process Valves."

END OF SECTION



Transmittal Form

To: ULLIMAN SCHUTTE
9111 SPIRNGBORO PIKE
MIAMISBURG, OH 45342

Date: 8/27/21
From: Ferguson Waterworks
Jeff Bentley
Sales Representative

Attention: ANDREW BROWER
Project: NRV WW

As requested we are forwarding the following information FOR APPROVAL:

<u>Item</u>	<u>Description</u>
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Regarding the Engineer's request for an AIS compliant 6" RPZ, I have verified with the named mfg's (Watts and Wilkins) that they DO NOT make any sort of 6" RPZ Backflow preventer that is AIS compliant.

Any questions please do not hesitate to call.

Jeff Bentley
VA/MD/DC Plant Sales

Ferguson Waterworks | Mid-Atlantic
C: (757) 298-3274
E: jeff.bentley@ferguson.com