

March 5, 2026

Mr. Matthew Livingston  
Staff Associate Engineer  
Office of Financial Assistance, Bureau of Administrative Services  
Nevada Division of Environmental Protection  
9805 Double R Blvd., Suite 200  
Reno, NV 89521

**RE: AIS Project Waiver Request for RMWTF Ozone Project**

Dear Mr. Livingston,

SNWA is formally requesting an availability-based AIS Project Waiver for a number of valves required for the RMWTF Ozone Replacement project currently funded under agreement DW2504. Details and support for this request are provided below.

**Description of construction materials:** Steel and stainless-steel valves

**Unit of measure:** Valve

**Quantity:** [REDACTED]

**Price:** [REDACTED]

**Time of delivery:** Definitive lead times are not available until an order is placed.

**Location of the construction project:** 1350 Richard Bunker Ave, Henderson, NV 89015

**Name and address of proposed supplier:** Please see attached Procurement Summary.

**Justification:** Despite efforts from SNWA's prime contractor, MWH Constructors, Inc. (MWH), domestic sources for the required valves were not available. The following steps were taken.

- Solicited bids from domestic suppliers.
- Included AIS compliance language in proposals and contracts written to all valve vendors.

**Due Diligence:** MWH has contacted six suppliers/distributors regarding availability of AIS-certified valves meeting the specification requirements. Notes regarding these suppliers are included in the letter from MWH that accompanies this request.

MWH has reviewed EPA Supplier Scouting resources and continues to search for suppliers with the ability to support AIS certification and meet the design requirements. A list of specific valve tags noted as unavailable from any suppliers to meet AIS certification requirements is included as an attachment to this request.

Please find support for our availability-based waiver request attached, including:

- MWH letter confirming process for identifying suppliers and the determination of non-availability of the domestic construction materials.
- Valve Procurement Summary
- Waiver Request List
- Sample bids
- Project Schedule

- Valve specs

Thank you for your consideration of this request and please let us know if we can provide additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Schoolmeester', followed by a long horizontal line extending to the right.

Julie Schoolmeester

DW2504 Authorized Official

**Table 1: Waiver Covered Items**

<b>Specification Section</b>	<b>Description</b>
400562	1/2" Needle Valves, <i>Tag Type NV</i>
400563	1/2"-2" Oxygen / Ozone Service Ball Valves, <i>Tag Type BV3</i>
400564	4"-8" High Performance Butterfly Valves, <i>Tag Type BFV1</i>
400564	4"-12" AWWA Butterfly Valves, <i>Tag Type BFV2</i>
400565.16	2" Globe Valves, <i>Tag Type GL</i>
400567.37	4" Pressure-Control Valves, <i>Tag Type PRV</i>
400567.39	3"-12" Pressure-Vacuum Relief Valves, Weight-Loaded, <i>Tag Type PRV1</i>
400567.39	4" Pressure-Relief Valves, Spring Loaded, <i>Tag Type PRV2</i>

## SECTION 40 05 62 – NEEDLE VALVES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes: Needle Valve
- B. Related Requirements:
  - 1. Section 40 05 51 “Common Requirements for Process Valves”: Basic materials and methods related to valves commonly used for process systems.

#### 1.3 SUBMITTALS

- A. As specified in Section 40 05 51 “Common Requirements for Process Valves”: Submittal requirements for compliance with this Section.

#### 1.4 QUALITY ASSURANCE

- A. Provide Installation Inspection and Operator Training per Section 40 05 51.
- B. Provide testing and inspection certificates.

### PART 2 - PRODUCTS

#### 2.1 NEEDLE VALVES – Tag Type NV

- A. Service: Aqueous Ammonia (19% Solution) at AMSWTF.
- B. Manufacturers:

- [REDACTED]
- 2. Substitutions: Engineer Approved Equal.

C. Description:

1. For positive leak tight shut-off and regulation of aqueous ammonia utilized in chloramination process.
2. As specified in Section 40 05 51 "Common Requirements for Process Valves.
3. Type:
  - a. Integral bonnet design.
  - b. Rising stem with blunt stem tip.
  - c. Inline needle valve.
4. Maximum Working Pressure: rated for up to 5,000 psig. Refer to valve schedule for expected operating pressure.
  - a. At the above rated pressures, certified by the manufacturer as permitting zero leakage for a 5-minute duration with full pressure applied in either direction.
5. Process Fluid Temperature: rated for -65 deg. F to 450 deg. F. Refer to valve schedule for expected operating temperature.
6. Handle: T-bar.
7. End Connections:
  - a. ½" Female NPT threaded connection according to ANSI B1.20.1 internal pipe threads.
8. Flow arrow cast into body of valve.

D. Materials:

1. Body: Stainless steel, ASTM A182 Type F316.
2. Packing Nut: Stainless steel ASTM A479 Type 316.
3. Handle: Aluminum.
4. Lower Packing Washer: Stainless steel, ASTM A479 Type 316.
5. Packing: PTFE.
6. Stem: Stainless steel, ASTM A479 Type 316.
7. Upper Packing Washer: Brass.
8. Connecting Hardware: Type 316 stainless steel

E. Finishes: As specified in Section 40 05 51 "Common Requirements for Process Valves".

## 2.2 SOURCE QUALITY CONTROL

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves".

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install in horizontal orientation with handle angled from vertical away from wall for ease of turning.

END OF SECTION

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## SECTION 40 05 63 - BALL VALVES




### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1.  
- 5. Oxygen/ozone service ball valves.  


- B. Related Requirements:

- 1. Section 40 05 51 "Common Requirements for Process Valves": Basic materials and methods related to valves commonly used for process systems.
- 2. Section 40 05 57 "Actuators for Process Valves and Gates".

#### 1.3 SUBMITTALS

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.

#### 1.4 QUALITY ASSURANCE

- A. Test valves in accordance with AWWA C504, API 598, MSS SP61 as applicable for types listed herein.
- B. Provide Installation Inspection and Operator Training per Section 40 05 51.
- C. Provide testing and inspection certificates.

[REDACTED]

2.5 OXYGEN / OZONE SERVICE BALL VALVES- Tag Type BV3

A. Service: Oxygen gas and ozone gas systems.

B. Manufacturers:

[REDACTED]

5. Substitutions: Engineer approved equal.

C. Description:

1. Comply with MSS SP 72, ANSI B16.10, B16.34, B16.5, ASTM A380.
2. Cleaned, tested, packaged per ASTM G93.
3. Passivated per ASTM A380.
4. Minimum Working Pressure: 200 psi WOG.
5. Maximum Temperature Rating: 400 Deg. F.
6. Body: unibody or two piece, bolted.
7. Ball: full port, floating, self-adjusting.
8. Seats: Resilient and replaceable.
9. Stem: blow out proof, O ring sealed.
10. End Connections: ANSI Class 150 Flange, Raised Faced
11. Stem Seals/Packing:

- a. Multiple Chevron Rings.
- b. Mechanically retained.

D. Actuator:

1. Manual level or handwheel, and as specified per valve schedule.



## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves":  
Submittal requirements for compliance with this Section.

### 3.2 INSTALLATION

- A. According to AWWA C507.
- B. As specified in Section 40 05 51 "Common Requirements for Process Valves".

END OF SECTION

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## SECTION 40 05 64 - BUTTERFLY VALVES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. High performance butterfly valves.
- 2. AWWA butterfly valves.

- B. Related Requirements:

- 1. Section 40 05 51 "Common Requirements for Process Valves": Basic materials and methods related to valves commonly used for process systems.
- 2. Section 40 05 57 "Actuators for Process Valves and Gates".

- C. Van Stone flanges shall not be used with pinch valves, industrial butterfly valves; elastomer bellows style expansion joints or other piping system components having an elastomer liner (rubber seat) that is used as a gasket.

#### 1.3 SUBMITTALS

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.

#### 1.4 QUALITY ASSURANCE

- A. Test valves in accordance with AWWA C504, API 598, MSS SP61 as applicable for types listed herein.
- B. Provide Installation Inspection and Operator Training per Section 40 05 51.
- C. Provide testing and inspection certificates.

## PART 2 - PRODUCTS

### 2.1 HIGH PERFORMANCE BUTTERFLY VALVES- Tag Type BFV1

A. Service: GOX, OZ, and OG isolation and modulating control valves 2-inch and larger.

B. Manufacturers



3. Or Engineer Approved Equal

C. Description

1. Comply with MSS SP 25, 44, 61, 68, API 609, ANSI B16.5, 16.34, 16.47, ISO 5211, ASTM A351m A564, A35.
2. Ozone and Oxygen Service Valves: Cleaned, tested, packaged per ASTM G93 and CGA G-4.1.
3. Passivated per ASTM A380
4. Design Working Pressure: Per Valve Schedule
5. Design Fluid Temperature: Per Valve Schedule
6. Body Style: Lugged.

a. Wafer style for BF-4-OG-0150 through BF-4-OG-0850

7. Disc: eccentric, offset design.
8. Shaft: single or two-piece design, taper pinned. Capable for mechanical separation from disc without damage to shaft or disc.
9. Bearings: Self-lubricating.
10. Shaft Seals/Packing:
  - a. Multiple V-rings
  - b. Mechanically retained
  - c. Blow out proof retainer

11. Seats:

- a. Mechanically retained
- b. Energized
- c. Located in body
- d. Resilient and replaceable. Field replaceable.

D. Actuator:

1. Electric Actuators: Per Valve Schedule.
2. Gear Actuators for Manual Valves: Comply with AWWA C504 and requirements listed below.

E. Materials:

1. Body: ASTM A351, Grade CF8M, Type 316 SS.

2. Stem: 17-4 PH Stainless Steel, ASTM A564 Type 630 SS.
3. Disc: ASTM A35, Grade CF8M, 316 SS.
4. Taper Pins: ASTM A276, Type 316 SS.
5. Resilient Seat: reinforced PTFE.
6. Seat Retainer: ASTM A240, Type 316 SS
7. Bearings: PTFE encapsulated Type 317 SS
8. Packing: PTFE, Chevron type or approved equal
9. Seal Retaining Rings: ASTM 240 Type 316 SS.
10. Seal: PTFE
11. Graphite materials not allowed in any components that are in contact with the oxygen or ozone process fluid.

## 2.2 AWWA BUTTERFLY VALVES- Tag Type BFV2

A. Service: Closed-loop coolant water supply, closed loop coolant water return, disinfected raw water.

B. Manufacturers:



6. Substitutions: Engineer approved equal.

C. Description:

1. Comply with AWWA C504, Class per valve schedule. Flanged end connections per ASME B16.1.
2. Minimum Working Pressure: 150 psig.
3. Design Pressure: Per valve schedule.
4. Maximum Process Fluid Temperature: Per valve schedule.
5. Body Style: Per valve schedule. Unless otherwise noted.
  - a. Butterfly valves for above grade service: flanged end with face-to-face dimensions in accordance with Table 2 of AWWA C504 for short-body valves.
  - b. Dead end shut off service: flanged type.
6. Shaft: One or two piece, mechanically secured to disc, capable for mechanical separation from disc without damage to shaft or disc. Designed for both torsional and shearing stresses when valve is operated under its greatest dynamic or seating torque.
  - a. No reduction of shaft diameter permitted except at operator connection, which will have a full radius fillet.
7. Bearings: Self-lubricating.

8. Shaft Seals/Packing:
  - a. Self compensating V-type- primary means.
  - b. Multiple O-rings for up to 24-inch.
  - c. Pull down seals using a square braid of graphite fiber for over 24-inch.
  - d. Retained by bolted retainer plate or gland, clips not acceptable.
  - e. Retained by stuffing box with follower gland for over 24-inch.
  - f. Replacement without removal of valve from line.
  - g. Adjustment without disturbing actuator assembly for over 24-inch

9. Seats:
  - a. Mounting: On body.
  - b. For body mounted seats, supply machined metal seating edges on disc. Seats mechanically retained and adjustable with common tools for valves larger than 24-inch.
  - c. For disc mounted seats, fasten with a segmented or one piece machined metal retaining ring, and self-locking bolts or set screws, fully adjustable with common tools. Machined metal seat ring installed in the valve body.
  - d. Type: Resilient and replaceable. Field adjustable and replaceable.

D. Actuator:

1. Per valve schedule.
2. Gear Actuators for Manual Valves: Comply with AWWA C504.
  - a. Gearing for actuators where required totally enclosed in a gear case.
  - b. include permanent indicators with raised or engraved marks to show position of valve disc.

E. Materials:

1. Body: Ductile iron, ASTM A536.
2. Stem: ASTM A276 Type 316 SS.
3. Disc: Ductile iron, ASTM A536 Grade 65-45-12.
4. Seats:
  - a. Elastomer: EPDM.
  - b. Retaining Ring: ASTM A276 Type 316 SS.
  - c. Seat Ring: ASTM A276 Type 316 SS.
5. Bearings:
  - a. Sleeve: Nylatron.
  - b. Thrust: Bronze ASTM 763, Alloy C99500.
6. Connecting Hardware: ASTM A276 Type 316 SS.

F. Finishes:

1. As specified in Section 40 05 51 - "Common Requirements for Process Valves".

2. Manufacturers standard fusion bonded epoxy.
3. No coatings for stainless steel body valves.
4. NSF 61 compliant for all services, except the closed loop coolant water piping.

## 2.3 SOURCE QUALITY CONTROL

- A. Section 01 40 00 "Quality Requirements": Requirements for testing, inspection, and analysis.
- B. As specified in Section 40 05 51 "Common Requirements for Process Valves".
- C. Testing: Test butterfly valves according to AWWA C504.
- D. Submit an affidavit of compliance stating that the valves have been manufactured and tested in accordance with AWWA C504 and specifically list all exceptions.

## PART 3 - EXECUTION

### 3.1 Examination

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.

### 3.2 INSTALLATION

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves".
- B. According to Manufacturer's Instructions.
- C. Van Stone flanges shall not be used with industrial butterfly valves, or other piping system components having an elastomer liner that is used as a gasket.

END OF SECTION

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## SECTION 40 05 65.16 - GLOBE VALVES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Globe valves (General).
- B. Related Requirements:
  - 1. Section 40 05 51 "Common Requirements for Process Valves": Basic materials and methods related to valves commonly used for process systems.

#### 1.3 COORDINATION

- A. Section 01 31 13 "Project Coordination": Requirements for coordination.
- B. Coordinate Work of this Section with piping and equipment connections as specified in other Sections and as indicated on Drawings.

#### 1.4 ACTION SUBMITTALS

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Source Quality-Control Submittals: Indicate results of factory tests and inspections and provide required certifications.
- B. Qualifications Statement:
  - 1. Submit qualifications for manufacturer and installer.
  - 2. Submit manufacturer's approval of installer.

1.6 CLOSEOUT SUBMITTALS

- A. Section 01 77 00 "Closeout Procedures": Requirements for submittals.
- B. Project Record Documents: Record actual locations of piping, valves and other appurtenances, connections, and centerline elevations.

1.7 QUALITY ASSURANCE

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.

1.8 QUALIFICATIONS

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.
- B. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.

1.10 WARRANTY

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves".
- B. Submittal requirements for compliance with this Section.

PART 2 - PRODUCTS

2.1 GLOBE VALVES

- A. Manufacturers:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]



B. 3 Inches (50 mm) and Smaller:

1. Comply with MSS SP-80, Class 125.
2. Body and Trim: 316 Stainless Steel.
3. Bonnet: Bolted.
4. Operator:
  - a. Handwheel.
  - b. OS&Y.
  - c. Furnish gear operators for valves 3 inch and smaller, as specified in the drawings, and chainwheel operators mounted over 7 feet above floor.
5. Disc: Renewable, 316 SS w/Buna-N composition.
6. Seat: hardened Stainless steel.
7. Stem: Silicon Bronze.
8. End Connections: flanged or threaded (see valve schedule).

2.2 SOURCE QUALITY CONTROL

- A. Section 01 40 00 "Quality Requirements": Requirements for testing, inspection, and analysis.
- B. As specified in Section 40 05 51 "Common Requirements for Process Valves".

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 "Execution": Requirements for installation examination.
- B. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.
- C. Verify that field dimensions are as indicated on Shop Drawings.

3.2 PREPARATION

- A. Section 01 73 00 "Execution": Requirements for installation preparation.
- B. Surface Preparation: Clean surfaces to remove loose rust, mill scale, and other foreign substances.
- C. Section 09 96 79 – Atmospheric Protection and Plant Service Areas Coatings Requirements for panting/coatings.

### 3.3 INSTALLATION

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.
- B. Dielectric Fittings: Provide between dissimilar metals.

### 3.4 FIELD QUALITY CONTROL

- A. As specified in Section 40 05 51 "Common Requirements for Process Valves": Submittal requirements for compliance with this Section.
- B. Pressure Testing: As indicated in piping schedule.

### 3.5 CLEANING

- A. Sections 01 73 00 "Execution" and 01 77 00 "Closeout Procedures": Requirements for cleaning.
- B. As specified in Section 40 05 51 "Common Requirements for Process Valves".

END OF SECTION

## SECTION 40 05 67.37 - PRESSURE-CONTROL VALVES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Stainless steel pressure control valves for oxygen service.

- B. Related Requirements:

- 1. Section 09 96 79 "Atmospheric Protection and Plant Service Area Coatings": Coating and touchup of shop-primed surfaces with primer.
  - 2. Section 40 05 07 "Hangers and Supports for Process Piping": Anchors and supports.
  - 3. Section 40 05 51 "Common Requirements for Process Valves."
  - 4. Section 40 05 67.39 "Pressure Relief Valves": Pressure/Vacuum relief valves for ozone and spring loaded pressure relief valves.

#### 1.3 COORDINATION

- A. Section 01 31 13 "Project Coordination": Requirements for coordination.
- B. Coordinate with installation of process piping and equipment connections as specified in other Sections and as indicated on Drawings.

#### 1.4 SUBMITTALS

- A. Section 01 33 00 "Submittal Procedures": Requirements for submittals.
- B. Comply with Section 40 05 51 "Common Requirements for Process Valves."
- C. Product Data: Submit manufacturer catalog information.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer Instructions: Submit special procedures and setting dimensions.

- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- G. Qualifications Statement:
  - 1. Submit qualifications for manufacturer.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Section 01 77 00 "Closeout Procedures": Requirements for submittals.
- B. Project Record Documents: Record actual locations of pressure-control valves.

#### 1.6 QUALITY ASSURANCE

- A. Materials in Contact with Potable Water: Certified to NSF Standards 61 and 372.

#### 1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.
- B. Installer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 01 66 00 "Product Delivery, Storage, and Handling Requirements" and Section 40 05 51 "Common Requirements for Process Valves."

#### 1.9 EXISTING CONDITIONS

- A. Field Measurements:
  - 1. Verify field measurements prior to fabrication.
  - 2. Indicate field measurements on Shop Drawings.

### PART 2 - PRODUCTS

#### 2.1 PRESSURE CONTROL VALVES FOR OXYGEN SERVICE

- A. Applicable service: GOX

B. Manufacturers:



C. Description: Pressure control valves for oxygen service shall be automatic-throttling rotary control valves with spring-opposed rolling diaphragm actuators. Valves and all associated components shall be cleaned, tested, and packaged for oxygen service per ASTM G93 and CGA G-4.1. All required pilots and connecting tubing shall be provided, including separate sensing lines if required for proper valve operation.

D. End Connections: Flanged.

E. Performance and Design Criteria:

1. Maximum Flow Rate: 860 scfm.
2. Minimum Flow Rate: 175 scfm.
3. Upstream Pressure Range: 25 to 28.5 psig.
4. Downstream Pressure Setpoint: 22 to 24 psig.

F. Materials:

1. Body: Stainless steel.
2. Seat: Stainless steel.
3. Trim: Stainless steel.
4. Stem, Nut, and Spring: Stainless steel.

G. Furnish certified oxygen cleaned valves for oxygen or related process services.

## 2.2 SOURCE QUALITY CONTROL

- A. Comply with Section 01 40 00 "Quality Control/Quality Assurance" and Section 40 05 51 "Common Requirements for Process Valves."
- B. Execute source testing as specified in Part 3.

## PART 3 - EXECUTION

### 3.1 SOURCE TESTING

- A. Comply with Section 40 05 51 "Common Requirements for Process Valves."

### 3.2 FIELD QUALITY CONTROL

- A. Comply with Section 40 05 51 "Common Requirements for Process Valves."
- B. Installation in accordance with manufacturer's installation instructions.

### 3.3 INSTALLATION

- A. According to manufacturer instructions and local code requirements at locations as shown on Drawings. Verify sufficient clearance and ease of access is provided for maintenance personnel.
- B. Comply with Section 40 05 51 "Common Requirements for Process Valves."
- C. Install with nameplate and test cock accessible.
- D. Verify factory setpoint is as specified or otherwise notify the Engineer.
- E. Provide proper support for piping and valve.

### 3.4 FIELD TESTING

- A. According to Section 40 05 51 "Common Requirements for Process Valves."
  - 1. Perform hydrostatic and leakage testing at test pressure as indicated in the valve schedule for minimum five minutes.
  - 2. Perform functional test on each pressure control valve to verify specified performance.
- B. Confirm pressure set points for all pressure control valves with Engineer via submittal of Functional Testing results.

### 3.5 OWNER TRAINING

- A. Section 40 05 51 "Common Requirements for Process Valves."

END OF SECTION

## SECTION 40 05 67.39 - PRESSURE-RELIEF VALVES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Weight-loaded pressure-relief valves.
- 2. Spring-loaded pressure-relief valves.

- B. Related Requirements:

- 1. Section 40 05 51 – Common Requirements for Process Valves.
- 2. SNWA Project 3128S (RMWTF) Ozone Generator Procurement Work Authorization Package Appendix D:
  - a. Section 46 31 53 – Ozone Generation Equipment.

#### 1.3 COORDINATION

- A. Section 01 31 13 “Project Coordination”: Requirements for coordination.
- B. Coordinate Work of this Section with installation of process tanks and/or piping.

#### 1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Section 40 05 51 – Common Requirements for Process Valves.
- C. Product Data: Submit manufacturer catalog information.
- D. Shop Drawings: Indicate materials, size, and accessories.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements and meet ASME BPVC Section XIII for PRV2.
- F. Manufacturer Instructions: Submit installation and maintenance instructions, including recommended inspection intervals. Provide instructions for replacement of screens on vacuum and pressure discharge openings.

- G. Source Quality-Control Submittals: Indicate results of factory tests and inspections and provide required certifications.
- H. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- I. Qualifications Statement:
  - 1. Submit qualifications for manufacturer.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Section 01 77 00 "Closeout Procedures": Requirements for submittals.
- B. Project Record Documents: Record actual locations of pressure-relief valves.

#### 1.6 QUALITY ASSURANCE

- A. Materials in Contact with Potable Water: Certified to NSF Standards 61 and 372.

#### 1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.
- B. Manufacturer to apply ASME UV stamp to valve.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 66 00 – Product Delivery, Storage, and Handling Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Section 40 05 51 – Common Requirements for Process Valves.
- C. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- D. Store materials according to manufacturer instructions.
- E. Protection:
  - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
  - 2. Furnish temporary end caps and closures on piping and fittings and maintain in place until installation.
  - 3. Provide additional protection according to manufacturer instructions.

## 1.9 EXISTING CONDITIONS


### A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

## PART 2 - PRODUCTS

### 2.1 PRESSURE-VACUUM RELIEF VALVES, WEIGHT LOADED – Tag Type PRV1

#### A. Manufacturers:

2.  Substitutions: Or Engineer-approved equal.

#### B. Description:

1. Comply with API 2000.
2. Size: As indicated on Drawings.
3. Configuration: Vent to atmosphere.
4. Seat Rings: Replaceable and interchangeable.
5. Performance and Design Criteria: Per Valve Schedule:
  - a. Maximum Leakage Rate: Less than 1 scfh of air at 90 percent of set point.
  - b. Maximum Pressure Setting: Up to 2 psig.
6. Materials:
  - a. Body: Type 316 stainless steel.
  - b. Guide Stem and Posts: Type 316 stainless steel.
  - c. Insert: PTFE.
  - d. Weights: Lead.
7. End Connection: Flanged, ASME B16.5.
8. The pressure/vacuum relief valves shall have set points to relieve and vent pressures in excess of 10 inches of water column pressure, and to relieve and vent vacuums in excess of 6 inches of water column vacuum. Consider the impact of the vacuum and discharge screen when sizing the valve.
9. Oxygen-cleaned, tested, packaged per ASTM G93 and CGA G-4.1. Passivated per ASTM A380.
10. Provide Type 316 stainless steel, No. 22 mesh, screen on vacuum and discharge openings. Loss of area due to the screen shall not reduce capacity of the valve more than 5% when compared to nominal valve capacity.

### 2.2 PRESSURE-RELIEF VALVES, SPRING LOADED– Tag Type PRV2

#### A. Service: Ambient air, GOX, OZ, disinfected raw water (DRW).

B. Manufacturers:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

6. Substitutions: Or Engineer-approved equal.

C. Description:

1. Size: As indicated on Drawings
2. Spring opposed, angle or in-line-pattern design, as shown on Drawings, with adjustable relief pressure and locking nut.
3. Performance and Design Criteria:
  - a. Flow Capacity: per valve schedule.
  - b. Maximum Pressure Setting: per valve schedule.
  - c. Pressure Setting Available Range: per valve schedule.
4. Materials:
  - a. Body: Same material as pipeline in which valve is installed.
  - b. Trim: Type 316 stainless steel.
  - c. Spring: Elastomer-coated and isolated from process flow.
  - d. Seat: PTFE.
5. End Connection: Threaded for water service. Flanged, ASME B16.5 for gas service.
6. Oxygen-cleaned, tested, packaged per ASTM G93 and CGA G-4.1. Passivated per ASTM A380.

2.3 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for testing, inspection, and analysis.
- B. Provide shop inspection and testing of completed assembly.
- C. Certificate of Compliance:
  1. If manufacturer is approved by Authorities Having Jurisdiction, submit certificate of compliance indicating Work performed at manufacturer's facility conforms to Contract Documents.
  2. Perform ASME or SPI for PRV2 and PRV1, respectively, in factory.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Section 01 73 00 "Execution": Requirements for installation examination.
- B. Verify that field dimensions are as indicated on Shop Drawings.

### 3.2 PREPARATION

- A. Section 01 73 00 "Execution": Requirements for installation preparation.
- B. Thoroughly clean end connections before installation.
- C. Cleaning: Clean surfaces to remove foreign substances.

### 3.3 INSTALLATION

- A. According to manufacturer instructions and local code requirements.
- B. Install with nameplate and test cock accessible.
- C. Verify factory setpoint is as specified or otherwise notify the Owner's Representative.
- D. Provide proper support for piping and valve.
- E. Repair damaged coatings with material equal to original coating.
- F. Section 40 05 51 – Common Requirements for Process Valves.

### 3.4 FIELD QUALITY CONTROL

- A. Section 01 73 00 "Execution": Requirements for testing, and adjustments.
- B. Testing: Test each valve for leak tightness at 75 percent of set point according to API 2000.
- C. After installation, inspect for interferences and proper supports.
- D. Repair damaged coatings with material equal to original coating.

### 3.5 CLEANING

- A. Sections 01 73 00 "Execution" and 01 77 00 "Closeout Procedures": Requirements for cleaning.
- B. Keep interior of valves clean as installation progresses.

3.6 DEMONSTRATION

- A. Section 01 79 00 "Demonstration and Training": Requirements for demonstration and training.
- B. Demonstrate equipment startup, shutdown, routine maintenance, and emergency repair procedures to Owner's personnel.

END OF SECTION