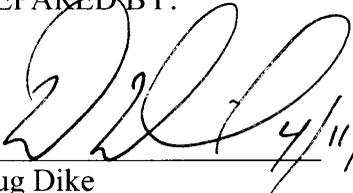


SPECIFICATION FOR PROCUREMENT OF  
HIGH PRESSURE INDUSTRIAL WATER (HPIW)  
THIRTY (30) INCH GATE VALVE FOR SSC HPIW  
11JGD-GM02  
MARCH 2013  
Revision 2

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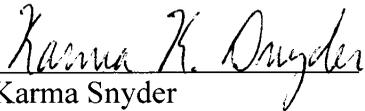
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**Document History Log**

<b>Change/ Revision</b>	<b>Change Date</b>	<b>Originator/ Phone</b>	<b>Description</b>
Basic	2/26/2013		
1	3/2013	Doug Dike/ ext. 8-2803	Completely revised and rewritten.
2	4/11/2013	Doug Dike ext. 8-2803	Part 1.0 – Design Requirements Part 2.0 – Non-Destructive Examination Changed NDE to read “Non-Destructive Examination (NDE) and NDT to read “Non-Destructive Testing (NDT) Part 2.2 – Shop Welds Deleted “If applicable” in first sentence Part 4.0 – Cleaning Changed definition. Part 6.2 – Welding Changed WPS/PQR to read “Welding Procedure Spedification (WPS) / Procedure Qualification Record (PQR) in first sentence.

**SPECIFICATION FOR 30 INCH WATER MOTOR GATE VALVE  
11JGD-GM02**

**1.0 DESIGN REQUIREMENTS**

- a. Size/Type: 30" motor metal seat gate valve of a rotating double disc design with either OS&Y or NRS design.
- b. Quantity: Ten (10) each.
- c. Service: Water
- d. Design pressure/temperature: 300 psig at temperature range of 20 degrees F to plus 150 degrees F.
- e. Material of construction: Body, body, yoke and disc, cast iron, grey iron or cast steel. Trim, Shaft shall be stainless steel and bushings shall be bronze.
- f. Flanges: Shall meet ASME B16.1, Class 250 and shall be raised face.
- g. Maximum allowable face to face dimension: 31 inches
- h. Valves shall have lifting lug(s) and no metric threads are allowed.
- i. Electric actuator: Enclosures shall be NEMA 4X compliant. The motors shall be a maximum of five (5) horsepower. Jogging motors shall not be allowed. Cycling speed shall be 120 seconds to open and 120 seconds to close. Motor voltage and phase shall be 220/440, three phase, 60 cycles. Available circuit breaker is 15 amps with a size 1 motor starter. The actuator shall be capable of stopping by use of limit switches or limit sensors. The current rating shall be 5A resistive at 120V. Limit sensors shall be contact-less halls effect sensors with a maximum angular resolution of 7.5 degrees at the output shaft. The actuator shall be furnished with torque limiting switches or a torque sensor. The current rating shall be 5A resistive at 120V. There shall be one SPDT contact each for the OPEN and CLOSE directions. A declutching mechanism shall be integral to the drive allowing the use of a manual override handwheel to position the valve when powered and/or during a power outage.

**2.0 NON-DESTRUCTIVE EXAMINATION**

Individuals performing any Non-Destructive Examination (NDE) shall be qualified for Non-Destructive Testing (NDT) Level II for each NDE process conducted in accordance with the ASNT CP-189. An NDE Specialist Level III shall interpret the results of any NDE examinations

## 2.1 CASTINGS

Pressure-containing castings shall be inspected by NDE. All castings shall be inspected by the following methods:

- a. Visual Examination (VT): Visually inspect 100% of the surfaces of all 10 castings. VT shall be performed as specified in MSS SP-55. The casting shall be free of the following: adhering sand, scale, cracks, and hot tears. Surfaces shall be repaired per standard shop procedures and a repair report shall be submitted to the Contracting Officer (CO).
- b. Radiographic Examination (RT): Casting shall be 100% inspected by RT. The following apply to castings up to 2 inches in thickness. The manufacturer shall advise the CO of any castings with thickness greater than two inches. Procedures for RT examination shall be carried out in accordance with the ASTM E 94 and ASTM E 1030. Acceptance criteria: Radiographs shall be compared to reference radiographs in accordance with ASTM E 446. Acceptable severity levels of defects according to imperfection category shall be as follows:

<b>Maximum Severity Level</b>		
<b>Imperfection Category</b>	<b>Casting Thickness &lt;1 inch</b>	<b>Casting Thickness 1 inch to &lt; 2 inch</b>
A - Gas porosity	1	2
B - Sand and slag inclusion	2	3
C - Shrinkage (four types)	1	3
D - Cracks	0	0
E - Hot Tears	0	0
F - Inserts	0	0
G - Mottling	0	0

Rejected castings shall be replaced at no cost to the government.

## 2.2 SHOP WELDS

All welds shall meet the requirements of ASME Boiler and Pressure Vessel Code, Sections II, V, VIII Div. 1 and IX.

## 3.0 PAINTING

Valve and actuator shall be primed and painted (2 coats) per the Manufacturer's standard shop practices.

#### 4.0 CLEANING

Gate valves shall be visually free of slag, water, rust, grit or other foreign solid particles and contain no visual sign of oil, grease or hydrocarbon.

#### 5.0 TESTING

Testing shall be per the AWWA C500 practices. The shells of all valve bodies shall be hydrostatic tested to 450 psi and the assembled valve leaked checked per manufacturer's standard shop practices. No visible leakage is allowed externally. Each valve shall be fully opened and closed three (3) times prior to the leak test.

#### 6.0 DOCUMENTATION

##### 6.1 OUTLINE DRAWING AND MATERIAL CERTIFICATION

Twenty one (21) days ARO the Manufacturer shall submit an outline drawing that contains the face to face dimension, flange data, overall valve height, valve weight, pressure rating of valve, CV, valve part number and code of construction. The outline drawing shall also include the electric actuator information which shall include actuator manufacturer, actuator rating, schematic/wiring diagram, required voltage/amperage/phase and output torque.

##### 6.2 WELDING

Twenty one (21) days ARO the Manufacturer shall submit its Welding Procedure Specification (WPS) / Procedure Qualification Record (PQR) for all welding processes used in the manufacturing of the valve. Welder certifications and NDE personnel ASNT certification shall also be submitted at this time.

##### 6.3 ASSEMBLY DRAWING

Four weeks (4) before the valve delivery the Manufacturer shall submit a cross section view of the valve and actuator. The view shall contain parts call out and the material of the parts. Recommended spare parts shall be noted.

##### 6.4 TESTING/INSPECTION/EXAMINATION PROCEDURES

Twenty one (21) days before any testing/inspection/examination is performed, the Manufacturer shall notify the Government. The Government at its option will provide a Government representative to witness any and/or all testing/examination. If the Government does not witness the radiographic inspection of the castings then the Manufacturer shall submit all radiographs to the CO for review and acceptance. The Government's NDE Level III representative shall have final acceptance of all testing/inspection/examination results.

##### 6.5 OPERATIONS AND MAINTENANCE MANUAL

Two (2) weeks before delivery of the valve, the Manufacturer shall submit three (3) copies of an Operations and Maintenance manual.

#### 6.6 EXAMINATION/TEST REPORTS

Upon delivery of the valve, the Manufacturer shall submit three (3) copies of all examination and test reports with the valve.

#### 6.7 MATERIAL CERTIFICATIONS

The Manufacturer shall provide material certifications for all pressure retaining materials traceable to each valve serial number. The Manufacturer shall submit certified mill test reports certifying that the casting materials meet the minimum chemical and material properties of material standards referenced herein. The chemical and material properties shall be obtained from test bars formed from the same heat as the casting.

#### 6.8 PRODUCTION SCHEDULE

The Manufacturer shall submit to the CO a schedule of the production of the valves. The schedule shall include procurement, major milestones and hold points. The schedule is to be updated and submitted to the CO on a monthly basis.

#### 7.0 SHIPPING AND IDENTIFICATION

Each valve shall be marked in accordance with MSS SP 25 and shall have the following information permanently attached to each valve:

- Manufacturer's name
- Model number
- Serial number
- Nominal size
- Pressure rating
- Max Cv
- Proof Test Type/Pressure/Date
- Weight
- Flow direction arrow
- Valve's Code of Construction, AWWA C500.

#### 8.0 MAINTENANCE

Design shall allow valves to be repaired to their initial operation and tightness. Manufacturer shall supply one (1) set of any special tooling required to disassembly and reassembly the valve for maintenance.

#### 9.0 WARRANTY

HPIW 30" Gate Valve  
Revision 2

11JGD-GM02

Manufacturer shall provide a one year warranty.