

Appendix A: Technical Specification N03 Replacement Condenser Valve Purchase

1.0 Location of Property

The property on which the work is required by this Specification is at the JEA Northside Generating Station located at 4377 Heckscher Drive, Jacksonville, Florida 32226.

2.0 Scope of Work

2.1 This specification covers the purchase, testing, and delivery of sixteen (16) new 60-inch rubber-lined butterfly valves for the Northside Unit 3 condenser water system. These valves replace the existing Henry Pratt Triton XR-70 valves. The valves are critical to controlling condenser cooling water flow, enabling reverse-flow backwashing, and preventing leakage that causes pump reverse rotation.

2.2 The work includes purchasing the following components:

- Sixteen new 60-inch rubber-lined butterfly valves
- Sixteen new Limitorque actuators
- Sixteen new Limitorque gearboxes
- All necessary fasteners, gaskets, supporting components, and other soft goods required

3.0 Condenser Valves Specification

3.1 All valves shall conform to AWWA Standard C504-06. Manufacturers must have experience producing 60-inch Class 150 valves suitable for condenser water service.

3.2 The takeout (face-to-face) dimension shall be exactly 15.00 inches \pm 0.06 inches. Deviation outside this range is not permitted.

3.3 Valve body shall be ductile iron or equivalent and fully rubber lined. Disc shall be rubber-lined to ensure durability in brackish river water with high chloride content and suspended solids. Rubber lining shall be neoprene, EPDM, or approved elastomers rated for brackish water exposure. Lining must be defect-free and abrasion-resistant.

3.4 Valves must support high-volume condenser flow and reverse-flow backwashing. Valves must maintain tight shutoff to prevent leakage that impairs condenser cleaning and causes reverse pump rotation.

- 3.5 Each valve shall include a heavy-duty gearbox and compatible electric actuator providing remote open/close control and position feedback to the DCS.
- 3.6 External surfaces shall have an epoxy industrial coating suitable for coastal environments. All fasteners must be stainless steel or corrosion protected.
- 3.7 Valves shall include a 5-year warranty against defects and lining failure. Contractor installation warranty shall be a minimum of 1 year.

4.0 Actuator and Gearbox Specification

The equipment covered under this specification is an electric motor-operated actuator assembly consisting of a Limitorque MXB-20 actuator coupled to a Limitorque WG-75-1SD-B gearbox. The assembly shall provide rotary motion suitable for operating large butterfly valves or other quarter-turn valve types requiring high torque and controlled operating speed.

4.1 Electric Actuator

- Manufacturer: Limitorque
- Model: MXB-20
- Type: Weatherproof electric actuator (WP rated)
- Power Supply: 3-phase, 60 Hz, 480 VAC
- Motor Speed: 155 RPM

4.2 Gearbox Model

- Manufacturer: Limitorque
- Model: WG-75-1SD-B
- Type: Worm-gear reduction gearbox designed for high-torque valve operation
- Mounting: Direct-coupled to MXB-20 actuator
- Output: Quarter-turn rotary output to valve shaft
- Sealing: Weatherproof, grease-lubricated gear housing

- 4.3 The actuator-gearbox assembly shall have a total valve stroke time of 105 seconds (from full open to full close or vice-versa). Output speed must be regulated by the gearbox ratio and input motor speed to ensure $\pm 10\%$ maximum deviation from the required operating time. Output torque rating shall meet or exceed the torque requirements of the connected valve. The WG-75 gearbox must provide sufficient gear reduction to support full-load torque at the specified 105-second stroke time.

- 4.4 Capable of full operation under rated voltage conditions without overheating. Actuator shall provide smooth, controlled motion with no excessive vibration or backlash
- 4.5 It is the Vendor responsibility to ensure the gearboxes can operate the new valves.

5.0 Functional Testing

- 5.1 In the factory the Vendor shall hydrostatic, leakage, and operational testing per AWWA C504-06 as required. FAT documentation shall include dimensional verification of the 15-inch face-to-face requirement.

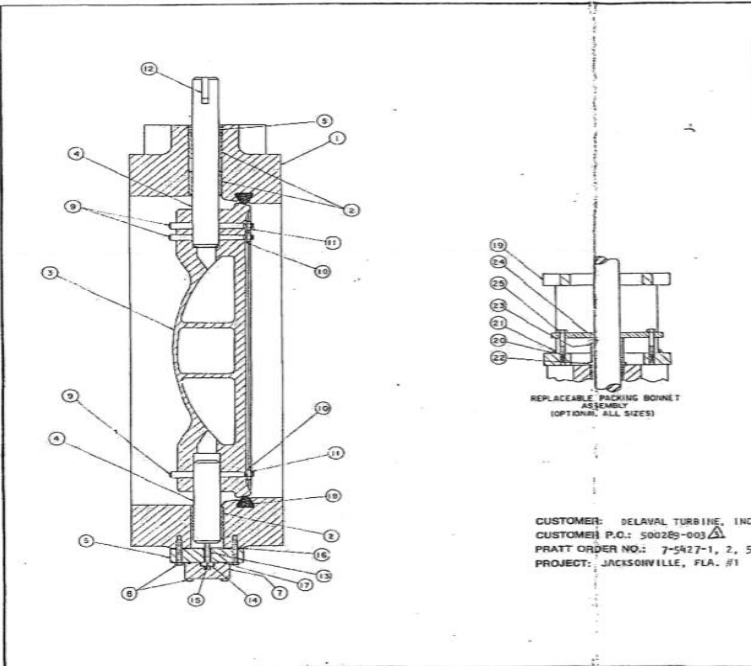
6.0 Shipment

- 6.1 The Vendor shall be fully responsible for the safe shipment, storage and handling of the components, and shall be fully responsible for the material on the job site until the system is turned over to the Plant. The contractor is responsible for all shipping costs and for all truck loading and unloading of material at the job site.
- 6.2 Miscellaneous parts shall be packed in suitable boxes for storage at the job site.

7.0 Documentation

- 7.1 Manufacturers shall provide certified drawings, material certifications, and FAT documentation. Contractors shall supply installation procedures, as-built documentation, and test results to the JEA Project Manager
- 7.2 Vendor shall provide the JEA Project Manager with a detailed resource loaded project schedule within 2 weeks of

award.



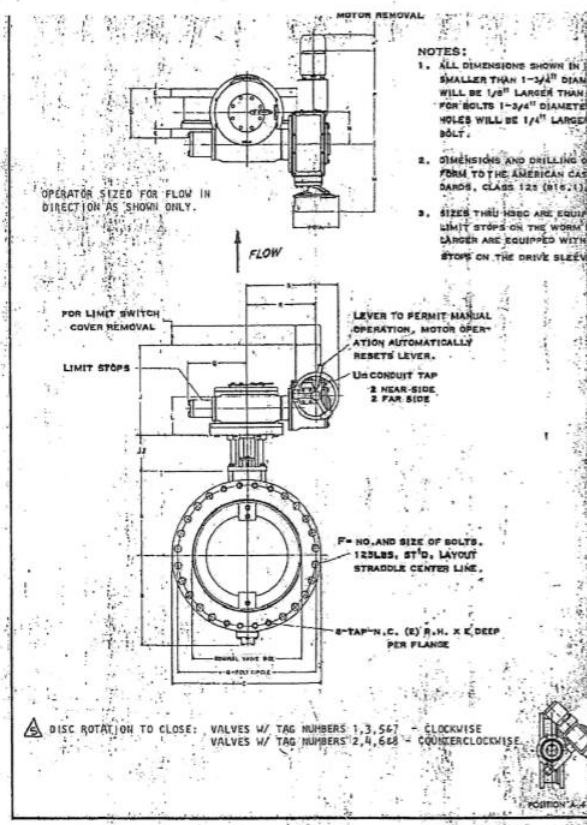
ITEM NO.	DESCRIPTION	MATERIAL
1	BODY	CAST IRON ASTM A126 CLASS B
2	BEARINGS	TEFLON LINED-FIBERGLASS BACKED
3	DISC	ALUMINUM BRONZE ASTM B-148 OR S1 CAST IRON ASTM A48-CLASS 40 DUCTILE IRON ASTM A536 CLASS 65-45-12
4	STUB SHAFTS	STAINLESS STEEL 18-8 TYPE 304 STAINLESS STEEL 18-8 TYPE 316
5	PACKING	COTTON DUCK IMPREGNATED W/ RUBBER & VULCANIZED
6	BOTTOM COVER	CAST IRON ASTM A126 CLASS B
7	BOTTOM COVER CAP	CAST IRON ASTM A126 CLASS B
8	CAP SCREWS	STAINLESS STEEL 18-8 TYPE 304
9	TAPER PINS	STAINLESS STEEL 18-8 TYPE 316
10	LOCKWASHERS	STAINLESS STEEL 18-8 TYPE 316
11	HEX NUTS	STAINLESS STEEL 18-8 TYPE 316
12	SQUARE KEY	STEEL AISI 1045 DRAWN
13	STUD-FULL THREAD	STAINLESS STEEL 18-8 TYPE 304
14	TURNST COLLAR	STAINLESS STEEL 18-8 TYPE 316
15	DOWEL PIN	CAST ALLOY BRONZE ASTM B-52
16	COVER GASKET	GRANITE
17	"O" RING	BUNA-N (RUBBER)
18	BUSHING SEAT	RESORCINOL-3
19	BONNET	CAST IRON ASTM A48 CLASS 40
20	LOCKWASHERS	CARBON STEEL CAD. PLATED
21	CAP SCREWS	STEEL SAE GRADE 2 CAD. PLATED
22	PACKING RETAINER	ALUMINUM BRONZE ASTM B148 ALLOY "A"
23	PACKING GLAND	BRONZE ASTM B144 ALLOY "3B"
24	FOLLOWER	BRONZE ASTM B144 ALLOY "3B"
25	SELF LOCKING BOLTS	STEEL SAE GRADE 2 CAD. PLATED

CUSTOMER: DELAVAL TURBINE, INC.
 CUSTOMER P.O.: 500289-003
 PRATT ORDER NO.: 7-5427-1, 2, 5 & 6
 PROJECT: JACKSONVILLE, FLA. #1

GEMS CODE:
 N03-XE12

5-1-75	TH	6-10-75	U/L	TH
8-10-75	U/L	6-10-75	U/L	TH
REV. DATE	BY	REV. DATE	BY	APP. DATE
PRATT HENRY PRATT COMPANY AURORA, ILL.				
GENERAL ARRANGEMENT DRAWING TRITON XR-70 BUTTERFLY VALVE PARTS AND MATERIAL SPECIFICATIONS				
DRAWN BY B.C.S.			DATE 2-11-70	
CHECKED BY J.R.W.			SCALE NONE	
APPROVED J.R.W.				

011074



- NOTES:
- ALL DIMENSIONS SHOWN IN INCHES FOR BOLTS SMALLER THAN 1-3/4" DIAMETER. BOLT HOLES WILL BE 1/8" LARGER THAN DIAMETER OF BOLT. FOR BOLTS 1-3/4" DIAMETER AND LARGER, BOLT HOLES WILL BE 1/4" LARGER THAN DIAMETER OF BOLT.
 - DIMENSIONS AND DRILLING OF END FLANGES CONFORM TO THE AMERICAN CAST IRON FLANGE STANDARDS, CLASS 125 (B16.1).
 - SIZES THRU H30C ARE EQUIPPED WITH EXTERNAL LIMIT STOPS ON THE WORM SHAFT. H40C AND LARGER ARE EQUIPPED WITH INTERNAL LIMIT STOPS ON THE DRIVE SLEEVES.

ITEM NO.	DESCRIPTION	MATERIAL
1	GRAB	BRONZE
2	OPERATOR	BRONZE
3	DISC	ALUMINUM BRONZE
4	STUB SHAFTS	STAINLESS STEEL
5	PACKING	COTTON DUCK IMPREGNATED
6	BOTTOM COVER	CAST IRON
7	BOTTOM COVER CAP	CAST IRON
8	CAP SCREWS	STAINLESS STEEL
9	TAPER PINS	STAINLESS STEEL
10	LOCKWASHERS	STAINLESS STEEL
11	HEX NUTS	STAINLESS STEEL
12	SQUARE KEY	STEEL
13	STUD-FULL THREAD	STAINLESS STEEL
14	TURNST COLLAR	STAINLESS STEEL
15	DOWEL PIN	CAST ALLOY BRONZE
16	COVER GASKET	GRANITE
17	"O" RING	BUNA-N
18	BUSHING SEAT	RESORCINOL-3
19	BONNET	CAST IRON
20	LOCKWASHERS	CARBON STEEL
21	CAP SCREWS	STEEL
22	PACKING RETAINER	ALUMINUM BRONZE
23	PACKING GLAND	BRONZE
24	FOLLOWER	BRONZE
25	SELF LOCKING BOLTS	STEEL

GEMS CODE:
 N03-XE12

5-1-75	TH	6-10-75	U/L	TH
8-10-75	U/L	6-10-75	U/L	TH
REV. DATE	BY	REV. DATE	BY	APP. DATE
PRATT HENRY PRATT COMPANY AURORA, ILL.				
GENERAL ARRANGEMENT DRAWING TRITON XR-70 BUTTERFLY VALVE LOW PRESSURE-REPLACABLE PACKING BONNET H40C OPERATOR-GRAB MOTOR				
DRAWN BY B.C.S.			DATE 12-10-70	
CHECKED BY J.R.W.			SCALE NONE	
APPROVED J.R.W.				

011073