AWWA C516, Proof of Design - Cycle Test Certification
102" & Larger 150B Resilient-Seated Butterfly Valves

1. ITEM TESTED:

108" 150B Val-Matic model 20108 resilient-seated butterfly valve, with 108" integrally-cast end flanges drilled in accordance with AWWA C207 Class D, ductile iron body and disc construction, welded nickel overlay body seat, 17-4PH stainless steel shafts, fiberglass-backed Teflon-lined bearings, EPDM seat and packing. Valve actuated by a Val-Matic LSG-8A traveling nut actuator fitted with a Limitorque L120 electric motor actuator.

2. PURPOSE:

Perform the Section 5.2.3 (Cycle testing) portion of the Proof of Design Test in American Water Works Association Standard AWWA C516-14, Larger-Diameter Rubber-Seated Butterfly Valves.

3. RECORD OF TEST:

The subject valve was tested with the pipe axis horizontal and the shaft axis horizontal and sealed with ductile iron blind flanges. Prior to the test, the valve was leak tested to >150 psig (155 to 160 psig) for 10 min. in both directions and found to be drop tight.

An adjustable water pump was set at ~163 psig and connected to shaft side of the valve. The valve was rotated closed by the actuator which caused the pump to build a differential pressure of >150 psig across the closed disc. A pressure switch closed once the pressure exceeded ~157 psig, and then the valve was signaled to open which relieved the pressure. The disc rotated ~4.8° open, before pausing and reclosing to the original position. The process was repeated through 200 cycles over four days.

After 200 cycles, the valve was pressure tested at >150 psig in each direction for 10 minutes and found to be drop tight. No adjustment to the seat was required.

Subsequent to this cycle test, the performance and hydrostatic proof of design tests were also performed. (See Drawing SS-4179.) Following all testing, the valve was disassembled and examined for damage and wear. No packing or shaft surface wear was observed, and the shaft and thrust bearing components were not bent or otherwise damaged. The journal bearings and body seating surface showed no signs of extensive wear, cracking, or failure. No permanent deformation was detected in the disc or body.

4. CERTIFICATION:

Based on the above Test Record, we hereby certify that the subject valve has passed the Proof of Design Cycle Test and in accordance with AWWA C516, qualifies all similar valves in the 102" & larger 150B size range. A representative of Lockwood, Andrews & Newnam, Inc. (LAN), an independent engineering consulting firm, witnessed the tests.

Certified by: _____ **DATE: 11-26-2019**

Timothy M. O'Shea, P.E., Engineering Project Manager
Val-Matic Valve & Manufacturing Corp.

Witnessed by: _____ **DATE: 11-26-2019**

Osvaldo Garza, P.E.
Lockwood, Andrews and Newnam, Inc.

102" & LARGER 150B BUTTERFLY VALVE PROOF OF DESIGN CYCLE TEST CERTIFICATION	**DATE** 11-26-2019
VAL-MATIC VALVE AND MANUFACTURING CORP.	**DRWG. NO.** SS-4178