CRITICAL NUCLEAR VALVE SOLUTIONS

TRUSTING THE COPES-VULCAN HERITAGE: 120 YEARS OF BEST-IN-CLASS PRODUCTS, WITH OVER 45 YEARS OF ENGINEERING EXCELLENCE IN NUCLEAR VALVES
Celeros Flow Technology are a full lifecycle optimisation partner and advisor to the world’s critical flow systems. Through our renowned pumps, valves and pipeline access brands, we manufacture and market products, components, services and technologies that are integral to meeting today’s challenges and tomorrow’s needs. Celeros FT offer an engineering environment where innovation is fostered, and the real needs of industry are understood, transforming ideas into powerful solutions to help customers meet their goals, overcome business challenges and thrive in a complex, constantly changing marketplace.

QUALITY COMMITMENT

Celeros FT is committed to quality throughout the company. Our Quality Management System is fully approved to ISO 9001:2015 and independently verified to comply with the latest quality standards. Our commitment extends to meeting the rigorous criteria of ASME ‘N,’ ‘NA,’ ‘NPT,’ and the 10CFR50 Appendix B Program in our quality programs. We also understand the challenges faced to acquire and maintain the high standards required to design and build nuclear coded valves, and the company has three coded facilities with a long history of excellence; Glasgow, UK, Annecy, France and Houston, USA.

AFTERMARKET SUPPORT

Copes-Vulcan offers experienced field service technicians and qualified engineering support to customers, and has been actively providing refurbishments and upgrades of installed equipment, which has reduced nuclear power plant maintenance and operation costs while improving plant performance. In addition, Copes-Vulcan has expanded its product offering to include nuclear refurbishments and upgrades in response to quality concerns over non-OEM suppliers. Copes Vulcan continually strives to meet our customers’ critical needs for improved cost savings as part of plant life extension, power up rate and other nuclear plant programs. Copes Vulcan can offer the following:

- Refurbishment of existing valve components and assemblies to extend the life of the OEM equipment.
- Upgrade and modernization of original equipment such as:
  - Quick disconnect kits for D100 actuators which eliminates the need for spinning the actuator on and off during maintenance.
- Replacing the threaded trim with a quick change trim.
- Configuration/material changes to resolve potential operational issues due to changes in operating temperatures, pressures and flow rates.

CRITICAL NUCLEAR VALVE SOLUTIONS

Copes-Vulcan, a Celeros FT brand, boasts over 45 years of expertise in engineering and manufacturing valves for the nuclear industry. The team take pride in the production of a wide range of valves, including globe, control, swing check, butterfly, ball, and sampling valves, to meet the specific needs of our nuclear customers. Over the years Copes-Vulcan has delivered technical solutions for a diverse array of nuclear applications, such as feedwater, steam dump, pressuriser spray, reactor coolant, sampling, service water, and safety injection valves.

Copes-Vulcan takes pride in its commitment to customer satisfaction by providing dedicated field service technicians and technical support. With a long-standing track record of actively engaging in equipment refurbishments and upgrades of existing equipment to assist utilities in effectively reducing maintenance costs and facilitating power uprates. The Copes Vulcans’s expertise extends to the production of high-quality valves tailored for various reactor types, such as boiling water reactors (BWR), heavy water reactors (CANDU), and pressurised water reactors (PWR). With a global reach, our valves are currently installed in numerous countries, including the United States, Canada, Mexico, South Korea, China, Japan, Switzerland, Brazil, and many more.

OVER 45 YEARS OF EXCELLENCE IN NUCLEAR VALVES
TRIM OPTIONS

Copes-Vulcan boasts one of the largest selections of control valve trims available in the nuclear market. This diverse range of trim configurations empowers us to tailor our valve designs precisely to our customers’ unique needs and operating conditions. In doing so, we achieve optimal performance with designs ranging from general service port throttling trim to Raven™ - a stacked disc, velocity control trim.

FEATURES

- Designs ranging from general service port throttling trim to Raven™ - a stacked disc, velocity control trim
- Our trim selection can be fitted to all of our globe valves and steam conditioning valves

CONTAINMENT SAMPLING ISOLATION VALVE

The Copes-Vulcan globe valve products include a specialized valve for sampling applications, custom designed for the nuclear industry. The sampling valve features a robust stainless steel body, with a diaphragm operator. It provides FCI 70-2 Class V shutoff, with excellent performance in high differential pressure applications. One of the key benefits of the Copes-Vulcan sampling valve is the ability to replace the plug and the seat in the field without removing the actuator.

Such high-pressure water, steam and gas applications demand exceptional seat tightness. The Copes-Vulcan design incorporates a high-thrust actuator with thru-hardened trim components to ensure better than ANSI 70-2 Class V leakage at 2500 psid (17,225 kPa) at 680°F (360°C) is standard.

Materials of construction were chosen for borate water service. These same materials are excellent choices for service water, steam and hydrogen media. Stainless steel is used for body, seat, plug/ stem, actuator frame, frame-to-body mounting components and packing gland. The absence of hardfacing limits cobalt to minor residual elements. The use of inert and radiation-resistant materials reduces maintenance and the risk of failure. The only non-metallic component used on the valve assembly that could experience degradation from exposure to radiation is the diaphragm.

The Copes-Vulcan has qualified the EPDM diaphragm material to 20 years service at 2.0 x 107 rads.

FEATURES

- Positive shutoff
- Reliable operation
- Radiation resistant materials
- Fast, easy maintenance
- No need for piping supports or restraints

valves are also available. A maximum design pressure and temperature rating of 2500 psig (17,225 kPag) at 680°F (360°C) is standard.
NUCLEAR BALL VALVES

Specifically developed for nuclear applications in response to customer needs, the Copes-Vulcan Nuclear Ball Valve line has been meticulously crafted to meet the unique requirements of our clients. They needed a “nuclear” valve – not an upgraded commercial design. The ball valve line has evolved to include two and three piece designs, and can be customised to fit within existing face-to-face dimensions for replacements of existing equipment. The Copes-Vulcan ball valve is robust and requires minimal maintenance.

FEATURES
- 1 – 8 inch, Class 150/300
- Bi-directional Class V and Class VI shutoff available
- Pneumatic piston or manual operators
- Two and three piece designs available

CHECK VALVES

Copes-Vulcan has supplied check valves to the nuclear industry since the early 1970’s. It is designed to provide positive shutoff even at low differential pressures.

FEATURES
- 3 – 18 inch, Class 150 – 1500+
- Bolted bonnet
- Available without cobalt
- Carbon, stainless and special materials

HIGH PERFORMANCE BUTTERFLY VALVES

The proven performance of the Copes-Vulcan High Performance Butterfly Valve is the result of over 35 years of experience with quarter turn designs. This has permitted Copes-Vulcan to develop a highly reliable valve with exceptional sealing capabilities requirements.

FEATURES
- 2 – 36 inch, Class 150 – 600
- Torque or position seated
- Offset disc minimizes seat-to-disc interference reducing torque requirements
- Independent flow testing to EPRI guidelines
- MOV sizing per EPRI NP-7501
- Bi-directional Class V and Class VI shutoff available

GATE VALVES

The Copes-Vulcan nuclear gate valve was originally supplied to the industry in the 1970’s. The design has continued to be enhanced to ensure compliance with NRC Generic Letter 89-10 and the EPRI MOV Performance Prediction Methodology.

FEATURES
- 3 – 18 inch, Class 150 – 1500+
- Bolted bonnet and pressure seal configurations
- Addresses pressure locking and thermal binding
- Full port and Venturi port designs
- Compliant with EPRI PPM guidelines
- Flex wedge and parallel slide configurations
OUR CELEROS FLOW TECHNOLOGY SITES

EUROPE / AFRICA
Winsford, UK  P: +44 1606 552041  E: copeinquires@celerosft.com

AMERICAS
Houston, USA  P: +1 281 231 3690  E: copeinquires@celerosft.com

ASIA
Shanghai, CN  P: +86 21 2208 5888  E: CopesVulcanSouthAsia@celerosft.com

MIDDLE EAST
Abu Dhabi, UAE  P: +971 2 408 1900  E: copeinquires@celerosft.com
Dubai, UAE  P: +971 4 5289 555  E: copeinquires@celerosft.com