CCI is a global leader in the design, manufacture and service of control and isolation valves for the severe service applications of the power, oil and gas and nuclear industries. The ability of CCI to design control valves that maximize plant performance is unsurpassed in the industry with over 50,000 severe service valves installed worldwide. Our products are proven to withstand the most critical applications and employ either DRAG® or cage technology depending on the site specific needs.

Our diverse portfolio of over 70 severe service technologies encapsulates a distinguished 50 year history of creating cutting-edge, customized solutions devised by a team of highly trained experts known as Valve Doctors®. These specialists draw from decades of experience and on-going technical training to devise the most appropriate valve solutions that maximize system performance and customer profit. Customers from around the world, and in all severe service applications have come to expect the highest level of performance from CCI and our technology, and our ability to deliver has enabled us to become known as the leader in severe service valve applications.
CCI is a global leader in the design and manufacture of severe service control and isolation valves, mechanical equipment and maintenance support for electricity generation. The ability of CCI to design control valves that maximize plant performance is unsurpassed in the industry. With over 50,000 severe service valves installed worldwide, CCI products are proven to withstand the most critical applications.

Our diverse portfolio of over 70 severe service technologies encapsulates a distinguished 50-year history of creating cutting-edge, customized solutions devised by a team of highly trained CCI Valve Doctors®. These specialists draw from decades of experience and ongoing technical training to devise the most appropriate valve solutions that maximize system performance and customer profit. An industry-acclaimed team of specialists, CCI’s Valve Doctors provide a unique combination of engineering expertise and global resources with one paramount goal: to prevent or cure customer problems. Customers around the world have saved millions of dollars in downtime and gained millions of dollars in improved productivity by using the knowledge and experience of a CCI Valve Doctor®.

As part of the IMI family, CCI customers benefit from IMI’s dynamic, worldwide network of subsidiary businesses that share one common goal—to convert industry knowledge and market insight into customized, design-engineered solutions that give customers a valuable advantage. IMI’s commitment to ongoing product development and longstanding reputation for technological differentiation enhance CCI’s ability to push the envelope of severe service valve performance.
CCI offers a broad portfolio of severe service valve and control technologies designed to increase efficiency, reliability and profitability for its customers. Our extensive industry experience enables the CCI team to accurately assess process systems and engineer the ideal combination of technology to deliver the desired results.

**DRAG® control valves**
CCI’s patented DRAG control valves have been used for more than 40 years across multiple industries to prevent the development of high fluid velocities across all valve settings. By incorporating multiple disk stacks featuring varying numbers of pressure reducing stages, CCI DRAG valves offer superior control that improves plant performance, prevents cavitation damage, eliminates erosion and reduces maintenance and operational costs.

**Linear actuators**
CCI offers a complete line of linear pneumatic and hydraulic actuators designed for operation of flow control devices in power plants, refineries, nuclear facilities, compressor stations and on board vessels. The use of built-in permanent lubrication systems, patented by CCI and common to the full range of CCI actuators, ensures extremely smooth operation without required maintenance. CCI actuators are integrated by a wide range of positioners and accessories developed to meet the most adverse operating conditions.

**Customized industrial silencers**
CCI is a premier supplier of customized vent and exhaust silencers to the power, oil and gas, petrochemical, refinery and pulp & paper markets. Our products combine over 35 years of experience with extensive research in acoustics to provide low noise solutions to a wide range of customers.

**Desuperheaters**
CCI is the industry leader for desuperheating. Our valve experts scrutinize the way water droplets breakdown in order to create the finest mist possible for rapid evaporation in the steam flow. Known as Coolmist, this technology uses advanced atomization technology to increase the efficiency of spray water evaporation and provide better system control.

**High Integrity Pressure Protection Systems (HIPPS)**
CCI is leading the way in providing a custom engineered HIPPS solution where each specific HIPPS applications must be investigated thoroughly. CCI provides the complete support needed during each phase of the HIPPS project in defining HIPPS architecture, fault tree analysis, analyzing pressure rise and project stroke times and set points to realize an optimized and cost-effective HIPPS solution that includes the field sensor through the logic solver to the final elements.
Combined Cycle and Conventional Plants

CCI has for the past 50 years been working with fossil power plant operators to improve plant performance, reliability and output. Today, more than 20,000 severe service valves and over 6,000 turbine-bypass systems have been installed worldwide using our various platforms of DRAG®, BTG, ABJ, and various technologies acquired from Sulzer Ltd.; which testify to our commitment to industry leadership and an innovative spirit. CCI specializes in offering comprehensive solutions to steam conditioning, turbine throttle/stop, turbine bypass, feedwater systems and other applications where an emphasis is placed on eliminating cavitation and erosion, and/or limiting noise and vibration; particularly in combination with high pressure and temperature systems.

Combined Heat and Power Plants

CCI has a proven history of supplying steam conditioning and desuperheating valves with more than 20,000 installations worldwide. Some of the very first valves installed were for turbine bypass systems into pulp and paper facilities. Building upon this experience, our bypass valves have been designed specifically for the various turbine bypass arrangements over the years with the common goal of supplying repeatable and reliable performance with accurate control of pressure and temperature.

Customer – Florida Power and Light
Site – Martin County, FL USA
Requirement – In order to meet the needs for higher efficiency and still meet the changing power profile facing the Florida grid, Florida Power and Light recently converted two simple cycle gas turbines to become combined cycle units at the Martin power plant. In addition, two more combined cycle units were added to bring the total plant generation capacity to 1,100 MW. After only operating the converted units for a short period of time in a cyclic operation it was found they were demonstrating erosion and vibration issues.

Solution – In order to provide the necessary performance and reliability these cutting edge gas turbines systems were placing on the system it was found that the existing equipment needed to be replaced in the hot reheat turbine bypass system. Magnetite strainers and warming lines were installed on new 16in x 24in DRAG 100H + DAMD valves to handle the over 1000°F steam. The cyclic nature of the plants operation was further driving a need for faster and a more reliable actuator than what was already in place, which led to the selection of the QuickTrak III actuator. The units have been placed into commercial operation and are helping meet the needs for efficient and dispatchable power in southern Florida.

- Turbine bypass
- Main feedwater pump valve recirculation
- Startup and main feedwater regulation
- Attemperator spraywater valves
- Start-up/separator Level control
- Deaerator level control
- Auxiliary steam
- HP heater bypass
- Soot blower control
- High-level heater drain

- Sampling systems
- Steam turbine bypass to process
- Steam turbine bypass to condenser
- Turbine extraction/exhaust desuperheater
- Process desuperheaters
- Auxiliary PRDS system
- Inter-stage and final-stage attemperators
- Vent Valves and Silencers
- Other severe service valves
- Air vent to atmosphere

“We would like to say thanks for all your hard work and support. We currently have a large population of CCI DRAG® valves at our station and have plans to add more in the near future. Your product is currently the Cadillac of the industry and we look forward to working with CCI in the future.”
Oil & Gas Production/Transportation

CCI’s Valve Doctors® have spent years developing technology that meets the demands of today’s oil & gas field environment. The challenges of higher wellhead pressures, with aggressive fluids and entrained solids, have been met with the combination of advanced materials and DRAG® velocity control technology.

LNG

CCI has been a worldwide leader in providing severe service valve solutions in LNG plants for 30 years. Quick stroking requirements for the compressor recycle have reached less than one second using low cost and highly reliable pneumatic actuation. Repeatable tight shutoff is ensured with a proven balance seal design. In addition, CCI is the leader in the development of multi-stage noise standards.

With severe service valves installed in the majority of LNG trains worldwide, our engineers accurately determine valve and system characteristics for various valve sizes and materials based on the demanding operating conditions of cryogenic applications. CCI has earned a distinguished reputation with its history of designing and manufacturing control valves that withstand the strict demands of this application.

Gas Processing/Gas Transmission/Petrochemical/Refinery

With a presence in all facets of the reacting and refining process, CCI has continually provided reliable solutions and severe service valves since the inception of our company. In applications ranging from pump and compressor recycle to vent-to-flare and level control valves, DRAG® technology has provided the optimal control valve solution and has ensured the longevity and reliability of these systems.

Customer – Chevron  
Site – Angola

Requirement – Control systems on gas compression trains place strict demands on valves within the process. Requirements for continual control with the ability to provide full capacity in 30 seconds add to the stress on the valves in the system. Bechtel knew control would be especially critical for the Angola LNG project. They required a special breed of valves that would respond quickly and accurately to control signals to protect plant equipment in a way that would not impact process stability.

Solution – To help ensure the plant’s efficiency, reliability and cost-effectiveness, Bechtel turned to CCI to provide over 30 severe service DRAG valves – including the largest anti-surge, high-pressure recycle valves ever supplied by CCI for LNG liquefaction service. The 36”X42” valves had 36” plugs that required a 30” stroke to be actuated in 1.5 seconds. Other contracted control valves included fuel gas knockout, drum-level, feed gas, expander bypass and heater bypass control valves.

• Wellhead/production chokes  
• Separator level control  
• Gas lift  
• Injection pump recycle/overboard dump  
• Gas regulator  
• Surge relief  
• Gas injection/withdrawal (storage)  
• Metering stations (active monitor)  
• Compressor recycle/anti-surge  
• Emergency depressurizing/gas to flare  
• Amine letdown  
• Expander bypass (JT valve)  
• Methanol injection  
• Compressor recycle/anti-surge  
• Hot gas bypass  
• Overhead to flare  
• Emergency depressurizing  
• Feed gas regulator  
• Steam header control  
• Feedwater control  
• Steam vent  
• Slug catcher/KO drum level control  
• Emergency depressurizing/gas to flare  
• Amine letdown  
• Emergency depressuring  
• Expander bypass (JT Valves)  
• Lean amine pump recycle  
• Air vent to atmosphere  
• Process gas to vent /flare  
• Separator level control  
• Sour water letdown  
• Steam conditioning valve  
• Steam turbine bypass  
• Feedwater regulator  
• Spraywater  
• Steam vent to atmosphere  
• Feedwater pump recirculation  
• Steam header pressure control  
• HIPPS  

A Partner You Can Trust

Of all process plant equipment, valves are some of the most abundant and critical components supporting the safe and efficient operation of vital and costly equipment. Productivity, profitability and, most importantly, process safety can be quickly compromised when valves fail to perform to industry and factory specifications.
Nuclear Industry

CCI has a full portfolio to cover the most severe control valve services in the various designs serving the Nuclear industry. Our various valve designs have proven to be some of the most reliable in the industry, having achieved accreditation from certification bodies across the world for applications ranging from turbine bypass to feedwater regulation and spray water control valves. Capable of providing the various control technologies has made CCI a successful partner on most of the nuclear facilities around the world which could only be accomplished thru our dedication to safety and detail.

Renewable Industries

Growth in the biomass, geothermal and solar thermal industries has been aided by the technical prowess of the Engineering team at CCI. As these plants apply new technology and grow in scale, each plant has a unique set of design conditions which impacts the thermal properties and efficiencies. Building upon the vast history of customer demanded customization in the cogeneration industry, CCI has now successfully provided turbine bypass, boiler feedwater regulating and auxiliary steam valves; as well as silencers and pulsation dampners to meet the needs of customers generating renewable energy.

Customer – Södra Cell, a division of Södra Group
Site – Värö pulp mill, Väröbacka Sweden

Requirement – Södra Cell, one of the world’s leading manufacturers of paper pulp, recently upgraded its Värö mill with a new recovery boiler and steam plant. The remarkable transformation that qualified the Swedish mill as the world’s first fossil-fuel-free pulp and paper mill required precise control of steam pressures and temperatures to support production of over 425,000 tons of pulp annually.

Solution – At Värö, steam is conditioned to three different pressures and temperatures to support various stages of production. Process steam temperatures vary depending on flow and require temperature reduction or desuperheating. Södra selected CCI’s DAM-2025 desuperheaters as each one is equipped with multiple variable-section spray nozzles to achieve large spray water flows. Each nozzle prevents flashing inside the nozzle while maintaining a certain water atomization pressure at any flow condition. The DAM distributes the spray water evenly in the steam desuperheater while permitting no pressure drop in the steam line.

CCI’s VST-SE steam conditioning valves are also essential tools employed in the Värö Steam Plant. The valves are positioned parallel with the turbine and feature excellent steam conditioning performance, direct cooling water proportioning, long service life with low maintenance requirements and superior high rangeability (> 50:1) with water injection after final pressure reduction. Paired with CCI’s Advanced Control System, the valves function in a bypass mode if the turbine is not available.

Application of CCI’s thorough knowledge of thermal dynamics and their excellent valves in our new bio-fuelled Steam Plant gives us precision control of steam pressure and temperature to our processes. As an added benefit, we produce more electricity than we need. We sell the excess to the grid as ‘green’ power.”
Customer – Tampa Electric
Site – Tampa, FL USA

Requirement – As the largest gas fired combined cycle power plant in the Tampa Electric generation portfolio, providing 1,752 MWe to the 625,000 residents of Tampa Florida. The Gannon power station was originally a coal fired plant. Although the plant originally went operational in 2004 the original equipment began showing problems of fatigue and noise after conversion which are hallmarks of undersized equipment placed into a severe service application. “When the Tampa Electric Company’s Gannon Station converted from coal fired generation to gas, the plant began a new era of cleaner but more cyclical operation. As the operating conditions needed more variable operation, the severe service valve solution needed re-engineering to help us improve the temperature and thermal shocks this kind of clean generation requires, in addition to reducing our maintenance costs” said Paul Lofton of Tampa Electric Company.

Solution – After evaluating the operation and configuration, seven interstage attemperators and boiler feedpump recirculating valves, as well as three exhaust silencers were found to be in need of replacement to improve plant reliability and efficiency.

“CCI provided us with the sales, engineering and product design support necessary to solve our problem. Thank you for helping us to be successful in achieving our goal of reduced maintenance and down time along with increased reliability.” These cyclic load conditions place an immense amount of severe service on the valves, which is where CCI’s equipment is well positioned.

Field Service
With over 200 highly trained field service technicians, and six dedicated repair centers located strategically around the globe, CCI is always close by and ready to meet your service and repair needs at a moment’s notice.

With exclusive access to original factory drawings and specifications, CCI’s field service technicians are uniquely capable of conducting critical dimension analysis (CDA) to ensure your process is functioning safely and at peak capacity. Once valves have been inspected by trained CCI technicians, upgraded with necessary CCI replacement parts and recalibrated for optimal performance, warranties are re-extended to help safeguard your investment.

OEM Replacement Parts
No matter the degree of preventative maintenance employed, the unexpected can and will happen. Being prepared with a stock of necessary replacement parts will help promote the long-term efficiency and continuous productivity of your plant. Ensuring your parts inventory is of the highest quality and consistent with the latest industry certifications and factory improvements is critical.

Selecting CCI replacement parts over non-OEM alternatives can drastically reduce the risk of catastrophic failures and costly process shutdown. Only CCI replacement parts are manufactured to the specifications of original valve drawings and infused with ongoing improvements gleaned from our expansive installed base.

Upgrades
Your process equipment represents a significant investment. Periodic upgrades of CCI valve components can help keep pace with increasing production demands or effectively support deviations from original process designs.

We specialize in solving control valve problems in severe service applications such as turbine bypass control valves, reheat and superheat attemperation, spray valves, boiler start up valves, feed water regulators, pump minimums recirculation, vent valves and compressor anti-surge.

Drawing upon a vast collection of industry experience, CCI can help identify and execute necessary upgrades of both CCI and non-CCI severe service valves to help eliminate energy induced problems such as erosion, vibration, leakage, noise, etc. and achieve improved plant performance, efficiency and reliability.

Focused on efficiency
We are committed to helping your plant operate at optimal efficiency both technically and operationally. Our highly trained and experienced aftermarket field teams and our state-of-the-art repair centers are globally positioned to better meet your needs, when you need them where you need them.
Global Standard of Excellence

CCI is committed to providing you with exemplary service and flawless products that will perform safely, reliably and efficiently. To ensure this industry leading level of quality, a global Quality Management System (QMS) has been implemented across all manufacturing locations. This program provides a foundation for quality certifications, manufacturing processes and technology requirements throughout CCI’s value chain.