



# Innovative Solutions for Nuclear Power

Proven ways to increase productivity and profitability

aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



ENGINEERING YOUR SUCCESS.

# Why Parker Instrumentation now?

An in depth understanding of what's going on now in **nuclear**:

## NEW PLANTS

Fueled by growing concerns about coal's environmental impact, the cost and diminishing availability of oil, and the increasing need for energy, interest in nuclear as a clean, affordable power solution is growing worldwide. The most significant area of opportunity? Asia. With 112 nuclear power reactors currently in operation, 37 under construction, and firm plans to build 84 more, East and South Asia represent the greatest growth area.

## PLANT UPDATES

In addition to numerous proposed reactors, many facilities are seeking license extensions and using planned outages to update equipment and technology. Focused on increasing productivity and profitability, nuclear power companies are:

- Utilizing new technologies designed for hostile environments
- Strengthening their safety culture
- Driving down production costs
- Employing new supply chain strategies
- Standardizing operations

## Proven

Parker Instrumentation has been a key supplier to the nuclear market for decades, setting the standard for leak-free performance in fluid system instrumentation technologies for more than a half century. In fact, its CPI™ tube fittings – with their unique, interchangeable single ferrule technology – continue to replace the older double ferrule technology still found in nuclear power plants today. But CPI fittings are just one of the many innovations Parker has brought to nuclear. The division manufactures numerous components for nuclear power generation companies – components that are currently installed at nuclear plants worldwide.



## Innovative

Parker has made a multi-million dollar commitment to nuclear research and development to support the more than 500,000 components the company provides to meet the needs of nuclear power companies.

Re-energized and re-focused on nuclear, Parker is actively partnering with plant personnel and EPCs to set the standards and engineer the systems that will shape the future of this critical power source. With a mandate for continuous improvement, we're creating solutions that are smaller, lighter, more sustainable, and more energy efficient, with the reliability and cost effectiveness the industry demands.



## Certified and approved

Parker Instrumentation received its ASME N Stamp certification for its Class 1, 2 and 3 valves in 2007, making it only one of about 100 companies to make the grade. The division meets the following certifications and approvals relating to nuclear power:

- ISO 9001: 2008
- ASME U Stamp
- ASME UV Stamp
- ASME QSC (NCA-3800)
- RCC-M
- NQA-1
- 10CFR50 Appendix B Program



## A comprehensive supplier

Parker Instrumentation's fluid system offerings are both broad and deep. They include safety-significant and safety-related nuclear grade products, as well as high quality "off-the-shelf" commercial components for non-regulated areas of the plant.

## A proactive partner

Parker is there for its customers. In response to the industry's widespread workforce shortage, we're helping take the place of retired technical staff by working with customers to meet new specifications from updated nuclear standards and regional regulations.

## Label Parker "N" for Necessary

Not all nuclear valves are the same. Added to the normal criteria for valves and components are the Section III Rules for Construction of Nuclear Facility Components given by the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers. Parker's N Stamp program allows us to make valves that meet those requirements where commercial vendors cannot.



## The Parker Nuclear Portal

Parker Instrumentation can now bring a wide range of products from different Parker divisions to the nuclear market under an industry-compliant quality assurance program. The Portal has been developed under Parker Instrumentation's existing NQA-1 and 10CFR50 Appendix B quality assurance programs, and utilizes best practices and guidance from industry and regulatory documents. For more information on the Portal, including a list of qualified products, contact Parker Nuclear Technical Support at 256-885-3880.

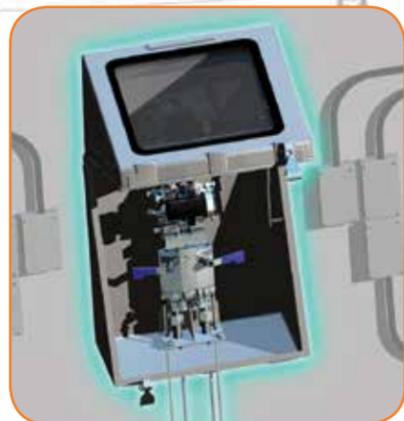


# Engineered solutions for today's nuclear plants

## SYSTEMS

### CCIMS

Available in remote mount, our integrated manifold solution (CCIMS) offers a precise, high-performance flow measurement and a quick disconnect replacement alternative, reducing exposure to radiation.



### Specialty valve systems

Specialty valve systems provide compliance with regulatory issues such as 10CFR50 Appendix B and ASME Section III (N Stamp valves), retrofit for legacy equipment (hydraulic servovalves), and alternatives for non-critical systems (solenoid valves).



## COMPONENTS



### Union bonnet valves

- Compliant with ASME Standard B31.1
- Provide a high integrity seal under severe service
- Packing below power threads protects and isolates thread lubricants from the media
- Dust seal prevents external contamination



### A-Lok® fittings

- Industry standard for instrumentation grade double ferrule tubing
- Silver-coated threads reduce galling
- Back ferrule with Suparcase™ resists inter-granular corrosion for superior sealing, longer shelf life



### MPI™ fittings

- Designed for added strength with thick-wall tubing
- Longer thread area for vibration resistance
- Molybdenum Disulfide coated nuts prevent galling
- Reduce installation and rework time by 50%



### Phastite® tube connectors

- Push-fit (no ferrule) system for permanent, leak-free connection without threaded components
- Reduce installation time and costs
- Eliminate work prep, hot work permits, and welding equipment



### B Series ball valves

- 2-way, 3-way diverting, or spring-loaded 3-way selector designs
- Broadest temperature/pressure ranges: -65°F (18°C) to +450°F (232°C); up to 6,000 psi (413.7 bar)
- Lower inventory requirements by 60%
- Widest variety of seats, seals, and port connections



### Weld-lok™ fittings

- Socketweld connectors meet ASME Section III and ANSI B31.1, B31.7 codes
- Permanent, leak-free connection
- For critical applications and high temperatures such as steam



### CPI™ tube fittings

- Simple 3-piece design; excellent for high thermo-cycling, superior body seat surface finish
- Molybdenum Disulfide coated nuts prevent galling, provide lubrication
- Single ferrule system with Suparcase™ reduces tube shear

# Empowering productivity

How Parker delivers the availability, flexibility, sustainability, and profitability you need

## AVAILABILITY:

WORLDWIDE. AND WORLD RENOWN.

With 50,000 employees serving 500,000 customers in almost 50 countries, Parker is literally everywhere you need us to be. By working with us, you have access to an integrated network of 316 manufacturing plants, 13,000 distributors and MRO outlets, and over 1,500 ParkerStores. Not only that: our technicians and market-specific engineers are ready to help you with system or subsystem design, on-site or off.



## FLEXIBILITY:

SYSTEMS THAT OPTIMIZE VALUE

As the world's motion control expert, Parker offers you a complete range of proven, off-the-shelf products. Engineered to work together, these products deliver streamlined systems and subsystems with exceptional quality and durability. Whether for nuclear or other energy alternatives, our system solutions reduce costs and advance performance. Cleanly. Efficiently. And reliably.

## SUSTAINABILITY:

PROTECTING PEOPLE AND ENVIRONMENT

Parker can help you meet the need for efficient, low-emission, high-performance energy. Our advanced technologies and innovations improve emissions performance, minimize waste, meet environmental regulations, monitor air and water quality, offer longer life, and help create greater fuel efficiency. All with the greatest safety for the people you employ.

## PROFITABILITY:

LEAN AND CONTINUOUS

At Parker, we actively seek new and better ways to do things as part of our mandate for continuous improvement. Committed 100% to total support, we partner with our customers to focus on creating solutions that are smaller, lighter, more energy efficient, highly reliable, and extremely cost effective. And we offer services that reduce outage times and operational costs, such as:

- **An international network of support facilities:** to meet emergency needs and reduce downtime.
- **Vendor-managed inventory:** including custom-tailored bin-filling programs managed by us.

## Expanding U.S. opportunities

As reported in the June 6, 2010 issue of *Parade Magazine*, nuclear power is on the rise.

"Right now, nuclear reactors generate 19% of electricity in the U.S.; this is compared to 80% in France, 44% in Sweden, 29% in Japan, and 15% in Canada. In the U.S., 104 reactors are operating in 31 states..."



Proposed nuclear sites under consideration\*

... A 2005 law offering incentives for nuclear energy companies created a surge of proposals, and President Obama has committed billions in federal loan guarantees to aid construction of new plants... A new reactor in Tennessee is scheduled to come online by 2013, two more are under construction in Georgia, and the NRC is reviewing applications for another 21 reactors at 17 sites."

\* Source: U.S. Nuclear Regulatory Commission



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