

# Fisher® Next Generation Nuclear Control Valves

Improving your bottom line, safely and reliably



# Improve Your Bottom Line, Safely and Reliably with Fisher® Next Generation Nuclear Control Valves

## Proven Reliable

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For more than 40 years, Emerson Process Management has been serving the nuclear industry. Their line of Fisher® nuclear control valves are installed and providing reliable service in nearly 90% of the world's nuclear energy plants. And now, through facility expansion and a dedicated global network of nuclear application experts, Emerson has become uniquely positioned to handle any next generation nuclear plant project.

The Emerson Innovation Center located in Marshalltown, Iowa, U.S., has the largest flow test lab in the world. This facility was used to test a custom-engineered Fisher next generation nuclear control valve using the exact piping configuration and flow capacities it will experience in a major new reactor design. This type of extensive testing and the chance to witness reliability first-hand are not offered anywhere else in the world.

### Reliability Features

- Use of existing, test-proven valve actuation and sizing principles.
- Designed with a low center of gravity to provide superior seismic performance (greater than 33 Hz) and meet minimum 6G tri-axial loading.
- Ultra high purity graphite packing systems maintain stem seal integrity and are available with or without high-seal, live-loaded springs.
- Bellows seals are available on specific package designs.
- Welded plug stem assemblies.

## Proven Safe

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Requirements for safe and dependable nuclear control valves and instruments have become more stringent. You can be equipped to meet these standards with Fisher next generation nuclear control valves. Every Fisher nuclear next generation nuclear control valve and instrument is approved and certified to all major regional and international nuclear standards. They are engineered to meet all major design standards and next generation customer requirements.

### Safety Features

- Spring-return pneumatic actuators designed to meet key safety-related functions.
- Dedicated mounting locations provide easy access to accessories and other parts for ease of maintenance and less time in containment.
- Metal seals and seats maintain long-term post-accident shutoff.

## Proven to Improve Your Bottom Line

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You can realize maximum uptime when you install Fisher next generation nuclear control valves and instruments. Pre-engineered Fisher next generation nuclear control valve packages, as well as customized solutions deliver long-lasting quality and durability to meet your immediate and long-term needs to produce nuclear energy. When used with the industry leading FIELDVUE™ digital valve controller and TopWorx™ GO™ Switch leverless limit switches, there is simply no other control valve supplier who can offer such a reliable and cost effective solution to you.

### Cost-Effective Features

- Top entry rotary valve installation allows for easy maintenance as the valve does not need to be removed from the line.
- Easier removal of actuator and quick change trim requires no special tools and minimizes downtime.
- Each Fisher next generation sliding-stem nuclear valve package is available with Class V shutoff and MSS-SP61 seat closure.
- FIELDVUE nuclear grade instruments provide automated performance monitoring of the valve assembly while controlling the process.

# Typical Fisher® Next Generation Nuclear Control Valve Designs



## Residual Heat Removal Valve

- Proven valve flow capacity.
- Cammed ball valve for extended seat life.
- Characterized flow curve and high flow rates for increased efficiency.
- Constructed with 316L pressure retaining components for easy weldability.
- Extremely tight shutoff.



## Pressurizer Spray Valve

- In-line replaceable rotary trim for ease of maintenance and improved safety.
- High rangeability and easy maintenance.
- High seismic capability.



## Feedwater Valve

- Cavitation protection at low travels for start up.
- Integrated hand-wheel, spring-return actuator, and long-stroke spring-return piston actuator.
- High performance packing for low friction and excellent sealing.
- Trim designed for extended service life.



## Air Operated Globe Valves

- Newly designed diaphragm and casing for extended service life and higher over-pressure capability.
- Available back seats.
- Simplified spring bench set adjuster easily accessible with no special tools required.
- Large yoke windows allow for easy access to bolting and packing and improve seismic resistance.



## GO Switch Leverless Limit Switches

- Rugged, dependable stainless steel proximity position sensor with no lever arm to adjust.
- Meets or exceeds qualifications for next generation and existing nuclear plants.
- Offers PLC and higher current ratings with AC/DC - NO/NC wiring flexibility.
- Consumes no power to operate.
- Qualified for 60 years, plus 1 post-accident.



## FIELDVUE Digital Valve Controller

- Non-contact, linkage-less feedback ensures highly accurate positioning in harsh environments.
- Remote-mount option for improved safety.
- Performance Diagnostics analyze valve and actuator performance while valve is in-service.
- Extreme temperature elastomer package and radiation resistant.

**For more information on Fisher next generation nuclear control valves and instruments, please contact your local business partner or go to [www.EmersonProcess.com/Fisher](http://www.EmersonProcess.com/Fisher)**



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