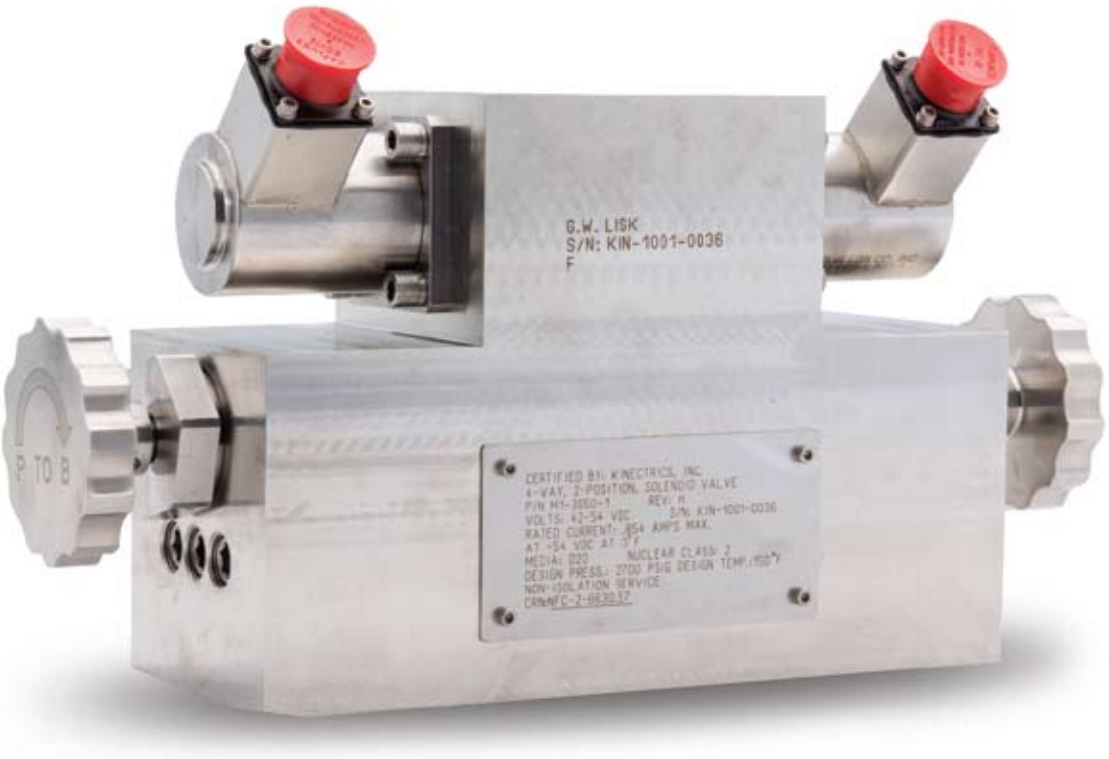
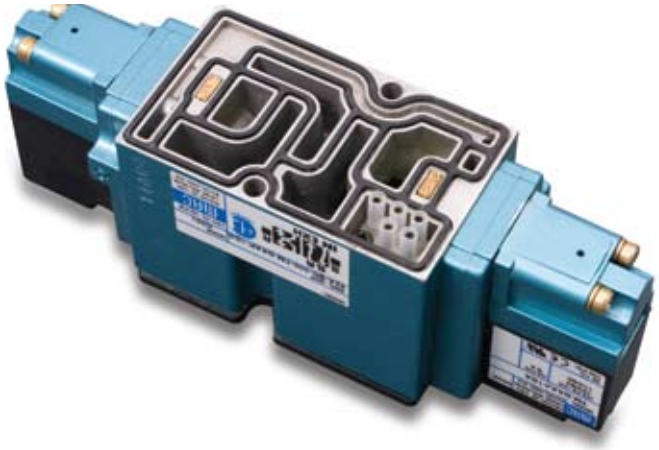
KINECTRICS

Putting Commercial Grade Products To The Test

Turnkey Services By Qualified Industry Experts





ADVANCED TECHNICAL RIGOR - SPECIALIZED TESTING SERVICES - UNIQUE PRACTICAL EXPERIENCE

Detailed Dedication Plans
- Safety Function
- Critical Characteristics
- Environmental Requirements
- External Events
- Component Life
- Industry Experience

Product Testing & Validation
- Seismic Testing
- Mechanical Testing
- Positive Material Identification
- Chemical Testing
- Electrical Testing

Quality Tracking and Reporting
- 10 CFR 50 Appendix B
- NQA-1
- ISO 9001
- Part 21 Reporting
- Forensic Analysis Support

WHAT IS COMMERCIAL GRADE DEDICATION?

Commercial Grade Dedication (CGD) is a process whereby a commercial item is qualified through verification of its critical characteristics for dedicated nuclear use. Testing is performed to provide objective evidence that the subject item will perform its intended safety-related function in the nuclear environment.

CGD is typically performed on items categorized for safety-related applications. Safety-related components are necessary to ensure: integrity of reactor coolant pressure boundary, capability to shut down the reactor and maintain a safe condition, and the capability to prevent or mitigate the consequences of accidents i.e. off-site radiation exposure.

COMPREHENSIVE CAPABILITIES

Kinectrics' facilities are unsurpassed in the ability to perform turnkey commercial grade dedication for the nuclear industry.
We are uniquely positioned to procure, dedicate, store and supply all types of equipment and material including, but not limited to:

- Electrical Components
- Chemicals & Lubricants
- Mechanical Components
- Raw Materials (e.g. concrete, metals, polymers)

Kinectrics will procure commercial components, evaluate all of the critical characteristics and create a dedication plan for customer approval. No matter what the characteristic, Kinectrics has unrivalled capability to perform testing in-house to confirm conformance to the chosen critical characteristics for use in safety-related systems.
Dedication plans are based on the latest EPRI Standards and are mutually agreed upon with our clients to ensure total satisfaction and confidence in the final product. All CGD test data will accompany the product.

MECHANICAL AND ENVIRONMENTAL TESTING

The Kinectrics Mechanical Laboratory can support a wide variety of tests and simulations for plant equipment as detailed below:

- Mechanical cycling tests
- Pressure tests (any medium)
- Humidity tests
- Accelerated thermal aging
- Flow tests (valves)
- Leakage tests (air, helium)

CHEMICAL TESTING AND MATERIALS VERIFICATION

Kinectrics' extensive lab facilities support virtually any chemical or material validation testing required. On-site analytical and materials capabilities include:

- Grease, oil, lubricants, organic analysis per ASTM standards (material verification supports dedication)
- Polymers and other non-metallic materials (typically used in o-rings, seals, etc)
- Chemicals
- Metals, plastics

ELECTRICAL TESTING

Kinectrics has an unrivalled history of advanced research and testing for large and small electrical components. With fully-equipped High Voltage and High Current laboratories with ties directly to the grid, Kinectrics can create voltages as high as 800 kV and currents as high as 900 kA.

Typical tests performed:

- Dielectric strength
- Insulation resistance
- Contact resistance
- Breakdown strength
- Dielectric spectroscopy
- Electromagnetic / Radio Frequency Interference (EMI / RFI)

SEISMIC TESTING

Kinectrics performs a full range of seismic tests to support seismic qualification. The test facility includes one tri-axial table and one single-axis Required Input Motion (RIM) seismic table, which encompass the following test capabilities:

- Sine sweep search for resonate frequencies
- Testing accelerations up to 12 g's
- Payload capacity of up to 4000 lbs.
- RIM (Required Input Motion) Testing

SPECIAL NUCLEAR OPERABILITY TESTING

Kinectrics can use its Equipment Qualification, Decontamination and Refurbishment, and Radioactive Materials Lab facilities to perform special tests in support of our nuclear clients. Kinectrics is licensed to handle contaminated materials—testing can even be performed on contaminated specimens.

COMPLETE DOCUMENTATION

The Kinectrics dedication report is the final record of the work performed for each component and contains the information needed to help plant engineers manage the EQ life cycle. Our team has successfully delivered thorough well-organized CGD reports on a large number of safety-related mechanical and electrical components. A snapshot of components delivered are below.

Actuators	Valves	Batteries
Solenoid Valves	Pressure Transmitters	Shield Plugs
Cables	Motor Starters	Hydrogen Igniters
Relays	Pressure Switches	Heaters
Airlock & Containment Seals	Conduit & Seals	Vibration Detectors
Positioners	DC Transmitters	Power Transformers
Terminal Blocks	Bearings Material	Transport Packages
Lubricants	Oils, Greases	Chemicals / Resins
Motors	Pumps	Breakers

SUPERIOR QA/QC PROGRAMS

Kinectrics is registered to ISO 9001, and maintains 10 CFR 50 Appendix B, NQA-1 and CSA N286.0 programs to ensure customers receive fully-qualified products and services.

Kinectrics has also been audited by NUPIC. Results are available through the NUPIC audit sharing system.

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