



KINECTRICS

Design Engineering For the Nuclear Industry

Delivering a full range of innovative engineering
and analysis solutions



Kinectrics offers the full range of technical services needed to address the unique engineering challenges faced by nuclear utilities today. From routine, single-discipline design modifications to major component replacements and system upgrades, Kinectrics has produced thousands of engineering change packages across a wide breadth of engineering disciplines. Our ability to provide comprehensive design engineering support is further augmented by our broader speciality engineering and analysis capabilities, allowing Kinectrics to deliver complete, innovative, high-quality and practical engineering solutions within our clients' cost and schedule requirements.

THE FULL SUITE OF SERVICES

Kinectrics offers clients the full range of engineering design and drafting capability covering all disciplines required to support any plant modification:

- Mechanical
- Civil and Structural
- Electrical
- Instrumentation and Control (I&C)
- Piping and Pressure Boundary Design
- Computer Design

Our core engineering skills are complemented by expertise in specialty engineering and analysis services, including:

- Human Factors Engineering
- FEA and CFD analysis
- Seismic engineering and analysis
- Cyber and physical security
- Probabilistic Risk Assessment
- Nuclear analysis including reactor physics, health physics, thermal hydraulics, containment, thermal performance
- Fuel performance and design
- Environmental Qualification
- Life cycle and aging management
- Regulatory and licensing support
- Environmental assessment
- Fire Protection
- Flow Accelerated Corrosion
- Electrical load flow calculations (ETAP, DAPPER)



WE SUPPORT CLIENTS AT ALL STAGES OF THE DESIGN LIFE CYCLE

Kinectrics offers clients the full range of engineering design and drafting capability covering all disciplines required to support any plant modification:

Engineering services are conducted by staff trained in client engineering change control processes, or the Standard Design Process as applicable, and in accordance with relevant regulatory and pressure boundary requirements. Kinectrics supports the full life cycle of a design engineering modification – from concept through to close out, including:

- Conceptual design and scoping studies
- Preparing modification outlines and modification requirements
- Detailed engineering including:
 - Calculations
 - Technical Specifications
 - Regulatory and licensing correspondence and interface
- Procurement engineering and support
- On-site construction support
- Root cause and apparent cause evaluations
- Support to commissioning and available for service activities
- Implementation and outage on-site support to include resolution of work order issues and assistance through field changes
- License renewal and decommissioning activities
- Long range planning support including estimating and procurement

QUALITY PROGRAMS

Kinectrics offers US and Canadian audited and accredited Quality Assurance Programs.

- In the US, our program complies with 10CFR50 Appendix B and ASME NQA-1, and 10CFR21 and has been audited by industry groups such as NUPIC and NIAC
- In Canada, our program complies with the requirements of ISO 9001:2015; CSA N286-12, CSA N286.7-99; CSA Z299.1-85; CSA N299.1-16; 10CFR50 Appendix B; ASME NQA-1; 10CFR21; CSA N285.0-12 (including NCA 4000) for design and construction; applicable aspects of ASME B&PV Section III for the conduct of engineering analysis services, and has been audited by industry groups such as NUPIC, NIAC, CANPAC, and the TSSA.
- We are a learning organization. Our utility-aligned Corrective Action Program receives accolades from our clients for our ability to identify and correct issues internally, resulting in higher quality deliverables.

THE KINECTRICS DIFFERENCE

Kinectrics applies our project management principles and processes as needed for the size and complexity of each scope of work. By offering a comprehensive skill set that encompasses the major engineering disciplines, speciality engineering and analysis capabilities, and extensive project management experience, we deliver to our clients:

- High quality engineering products. Kinectrics has demonstrated the ability to complete large volumes of design engineering work to an aggressive schedule while maintaining high quality – routinely achieving a much lower rate of field changes per modification than other design contractors.
- Innovative and practical solutions. We approach each scope from a lens of innovation so we can minimize the cost to our clients while delivering correct, practical and high-quality design products.
- Cost and schedule certainty through robust project management processes. We pride ourselves on our strong project management skills that focus on minimizing project risk, clear communication and routine reporting.
- Best Value Solutions By offering such a wide range of skills in house, we can minimize the vendors required for a scope of work, and remove the inefficiencies that can arise when interfacing with multiple organizations. Combined with our project-driven approach to delivering high quality work and innovative solutions, our work is high value and represents the lowest overall cost to our clients.



KINECTRICS

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