



Kinectrics' Nuclear Newsletter – Summer 2020



Innovation Hub: PPE Production and Testing

Kinectrics is working to support the needs of frontline workers in the fight against COVID-19, while maintaining critical support to the electricity industry.

Kinectrics has mobilized staff to support the **production of PPE** including face masks for provision to frontline medical facilities, and more complex resin-based parts for medical devices or repair of equipment where sourcing parts is a challenge. Our experienced designers, machinists, and reverse engineering staff are committed to support the needs of the Province of Ontario and Canada throughout the COVID-19 pandemic.

We are also **adapting our leading test capabilities**, normally utilized for testing of HEPA filters and respiratory PPE for the nuclear industry, towards medical needs. This “Made in Ontario” model will ensure a long-term stable supply of testing to the Province, and to the rest of Canada. [Read more...](#)

Kinectrics' Virtual World - Nuclear Labs in 360°

Kinectrics' Nuclear laboratories & facilities are best-in-class and world renowned. From fuel channel inspection and major component testing to radioactive materials and chemistry services - we ensure that Nuclear utility assets perform safely, reliably and efficiently throughout their entire life cycle. Unable to come for a visit in person? No problem! [Tour our labs online via our 360° videos!](#)



Featured Insight: Reverse Engineering - Solving the Issue of Obsolescence

Recreating obsolete parts and components from first principles

The issue of obsolete parts and components is becoming more critical as nuclear plants worldwide continue to age and components used in safety systems are no longer commercially available. At Kinectrics, we design new equipment to replace aging units as form, fit and functional equivalents to originally installed items.



Our focus is on saving our customers time and money by providing high reliability replacement components for obsolete items that can be directly and harmoniously installed into an existing system, maintain the safety function, have minimal impact on station documentation and no negative effect on system performance.

An integrated approach to reverse engineering

We follow a rigorous process that is fully aligned with the U.S. Nuclear Regulatory Commission methodology to ensure replacement components are fit for system use. First, the component's safety function is defined from first principles based on: customer technical specifications, station wiring diagrams, OEM literature, and legacy component walk-down.

Then, critical design characteristics based on FMEA analysis of the safety function are derived.

We utilize legacy design wherever possible in our replacement components to avoid introducing new failure mechanisms into the system.

Watch our [video](#) to learn more.

Project Highlight: Darlington Unit 2 Return-to-Service

Kinectrics is proud to be one of the key contributors to the success of Unit 2's return to service this month, part of Ontario Power Generation's (OPG) Darlington Refurbishment Project; this comes 10 years after originally being awarded the contract to provide Owner's Support Services (OSS) to the refurbishment.

Kinectrics' Nuclear Safety & Licensing (NS&L) team supported multiple operational support and safety case activities, and our Risk Management team completed Level 1 and Level 2 Probabilistic Safety Assessments and conducted reliability assessments in support of plant modifications. Kinectrics' support to the Unit 2 refurbishment also included a proactive and comprehensive study to identify design changes that would present Safety Improvement Opportunities (SIOs) which formed the basis for several design modifications.



At the peak, over 120 Kinectrics staff were co-located onsite at the Darlington Energy Complex, with the Design Engineering & Sites (DES) team downtown executing over \$40M annually in engineering & site services, owner's engineering, retube & feeder replacement oversight, feasibility studies, condition assessments, construction management, field engineering, quality engineering, and senior consultation.

Kinectrics' President and CEO, David Harris, commented “we are proud to have supported Darlington Unit 2 to this return-to-service milestone, bringing over 30 years of clean, reliable and affordable power to Ontario. We are also committed to continue our support through the successful completion of Refurbishment for Units 3, 1, and 4.”

Read the full news release [here](#).