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Stearns Roger Services

Automated Refueling Bridge



Framatome's expertise ensures reliability and optimal performance during fuel handling operations

Challenge

During refueling operations of a reactor, it is imperative no delays are experienced due to fuel handling equipment failure. Reliability and obsolescence risks due to aging refueling systems have become critical to predictable outage success. Utilities require a full range of services for all PWR and BWR fuel handling equipment since these systems are instrumental to a successful refueling outage. Typical requirements include engineering support for mechanical, electrical, digital design and software as well as site outage support for fuel moves. Today's plants need a vendor they can trust to handle turnkey fuel handling equipment support from design through installation and training for their teams.

Solution

Framatome incorporates outage services lessons learned, operating experience and customer feedback to enable evolutionary fuel handling equipment upgrades. Working with your teams, Framatome can assess, upgrade or replace manipulator cranes and refueling platforms to ensure total reliability and optimal performance during fuel handling operations. Framatome's Technical Training Center houses an operational BWR refueling platform and PWR manipulator crane to provide practical experience in a safe, controlled, real-world environment. The exclusive advantages of working with a turnkey supplier include Framatome's expertise at providing engineering, equipment and installation support along with 10 CFR 50.59 evaluations and design change package writing.

Customer benefits

Maintenance Platform

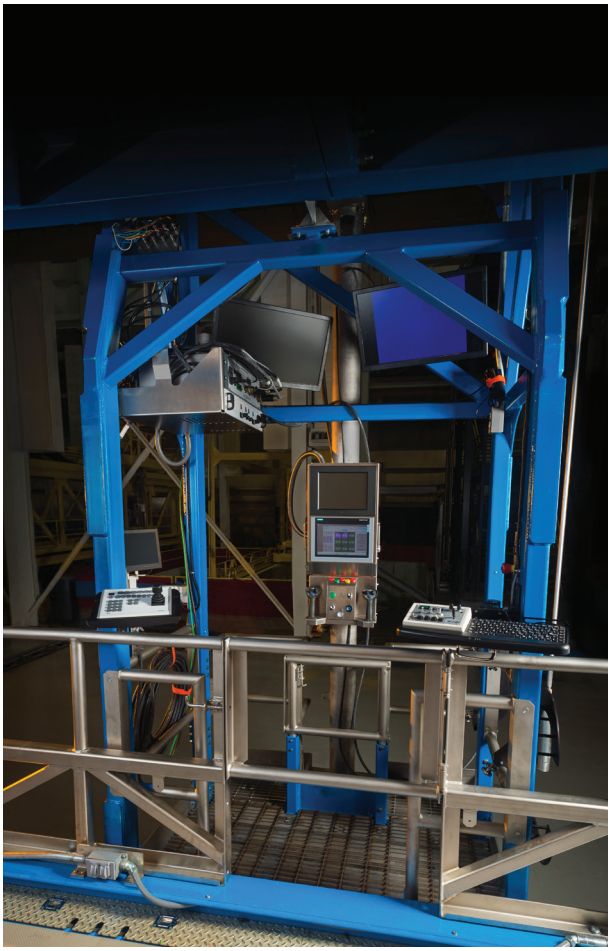
- Upper platform can access hoist during scheduled preventative maintenance
- Components on upper platform to improve ergonomics
- Maintenance walkways for hoist and controllers — removes scaffolding requirement

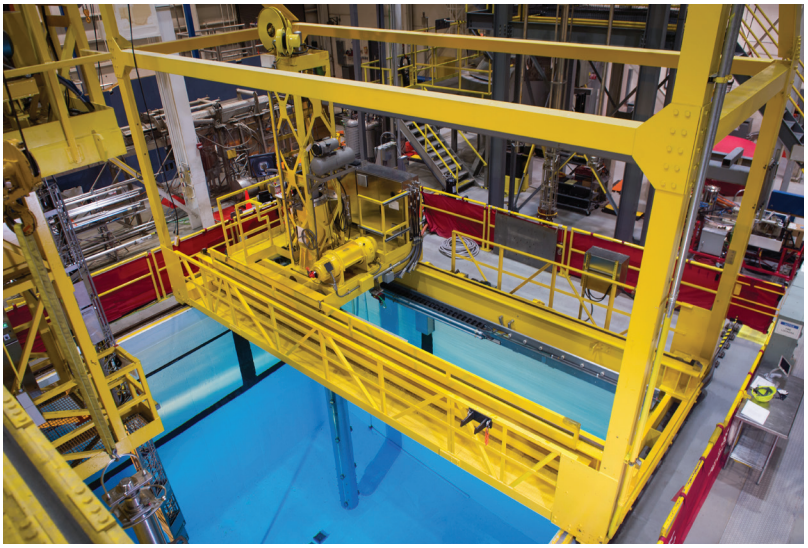
Operator Control

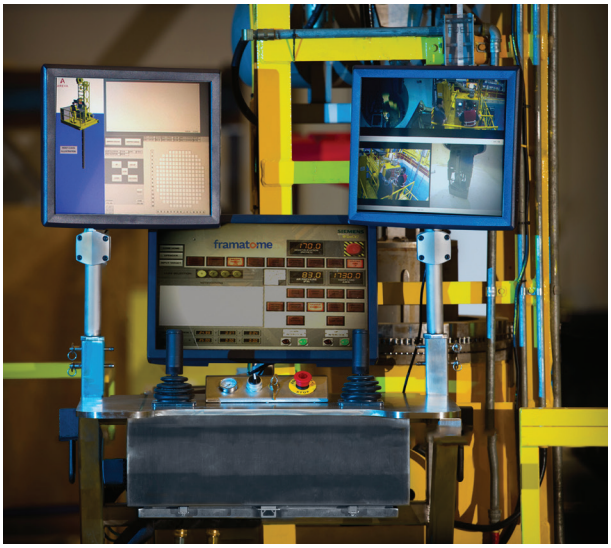
- Touchscreen, with on-the-screen control
- Advanced diagnostics
- Ergonomic joystick controls
- Fuel tracking
- Adaptable controls
- Improved human performance

Features

- Automatic, semi-automatic and manual modes — proven, optimized I&C architecture; high safety features with redundancies and interlocks
- Increased speed
- Cyber security compliant — critical digital asset
- Precise positioning of trolley and bridge during refueling operations
- Mechanical architecture and mechanisms based on proven technologies with improved safety and reliability
- Laser and encoder positioning
- X/Y combined movements for optimized travel paths (specific trajectories)
- Human machine interface for increased functionality
- Optional dual hoist design, added versatility
- Transfer system auto initiate from bridge, eliminates Fuel Transfer System (FTS) operator requirements
- Boundary Zone Protection System with programmable, in-work area exclusion zones
- Wider work platforms with stainless steel handrails
- Quality control validation of software and interlocks through extensive functional testing
- Off-bridge system monitoring and diagnostics — verify system operation during use







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Contact: outage@framatome.com | www.framatome.com

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