

NUCLEAR MODERNIZATIONS

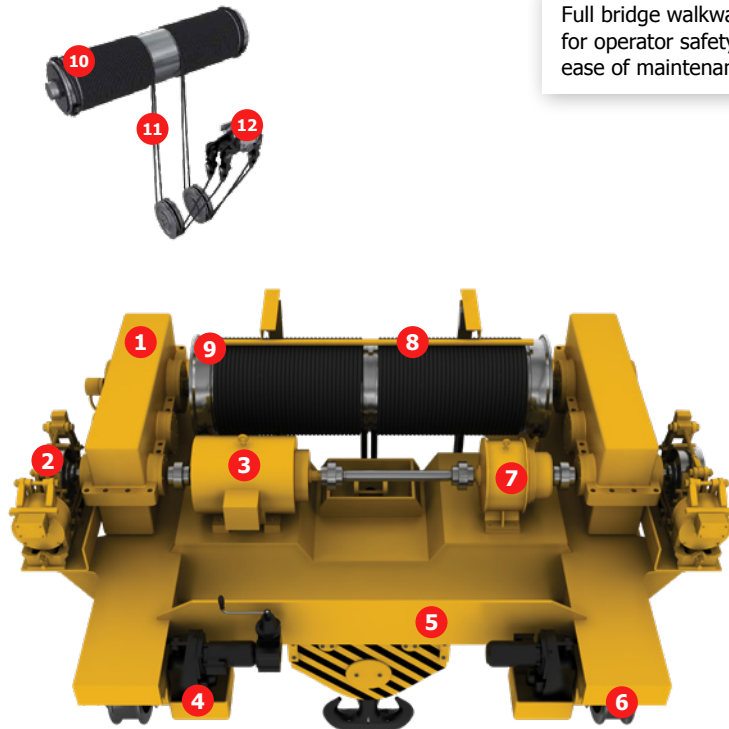
Upgrade for safety and reliability

A modernization can help your operations stay safe and productive as cranes age, design standards change and new safety regulations emerge. Konecranes has completed many modernizations at nuclear power generation facilities and can upgrade equipment to include enhanced safety features, modernized technology and improvements in reliability. Our experienced technicians routinely modernize both our own and other manufacturers' equipment and are highly trained to work in nuclear power generation facilities. We also have a dedicated team of engineers who can provide modernization analysis and recommendations.

Single failure proof technology

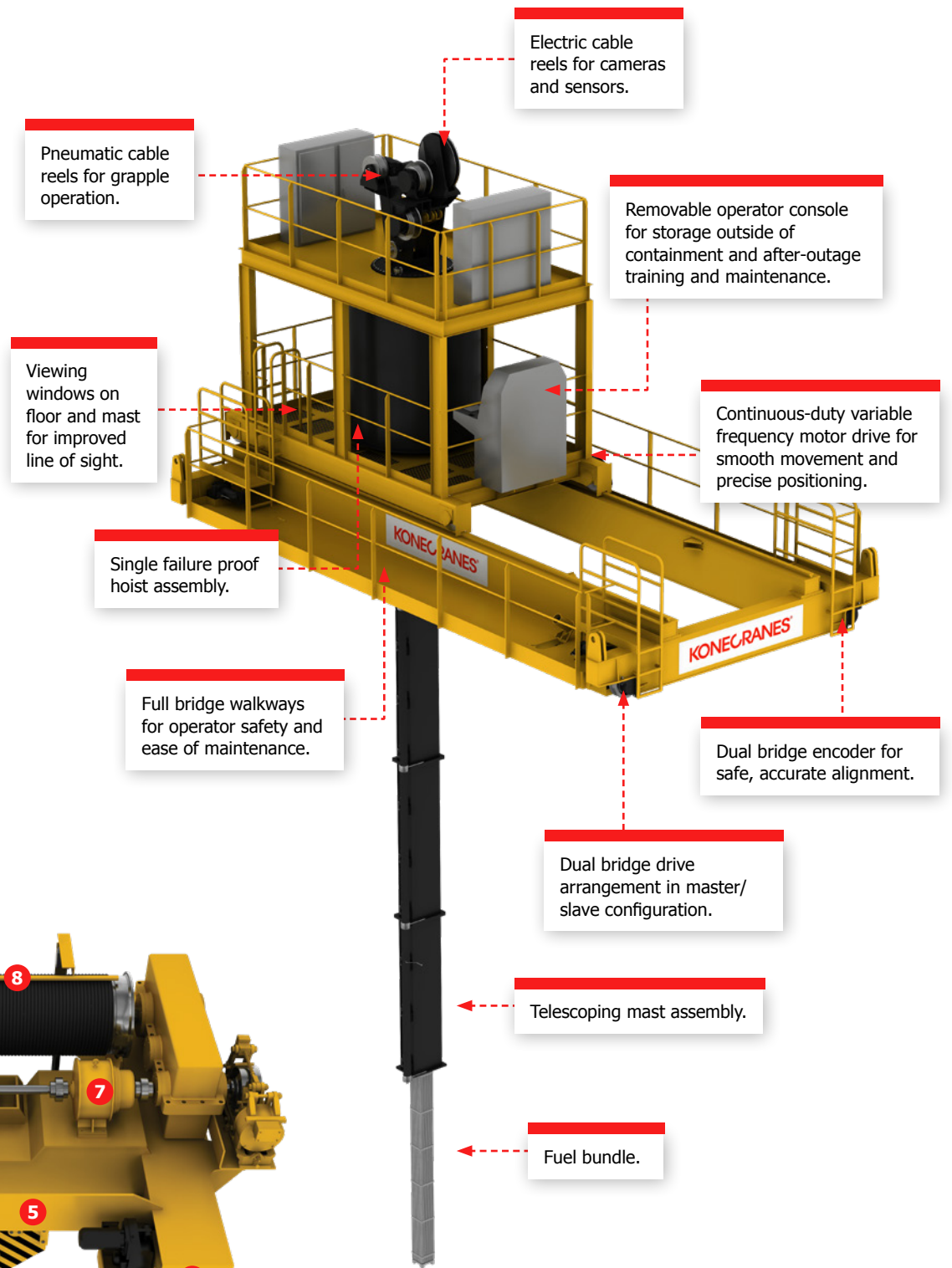
Konecranes SUPERSAFE single failure proof cranes provide an unprecedented level of safety for the most critical nuclear operations, such as nuclear fuel handling. These highly specialized cranes are designed to prevent load drop during a single failure of the lifting system.

1. Redundant single failure proof gearboxes to prevent uncontrolled motion in case of failure.
2. Redundant nuclear compliant shoe brakes for additional safety.
3. Continuous-duty variable-speed motors provide precise positioning.
4. Travelling motors with manual crank for operation in case of loss of power.
5. Two-block safety system to prevent hook collision with the trolley frame.
6. Wheel and axle load drop protection system.
7. Eddy current brake system for redundant braking and emergency lowering during loss of power.
8. Miss-reeving detection system.
9. Drum catchers to limit rope drum drop.
10. Rope safety factor of 10:1 compliant with major nuclear specifications.
11. Single failure proof redundant rope reeving to prevent load drop and uncontrolled motion.
12. Equalizer with load safety system to detect hung-loads, overloads and slack rope.



Fuel handling equipment

Konecranes fuel handling equipment utilizes SUPERSAFE™ single failure proof technology, which is designed to comply with stringent nuclear worldwide regulatory requirements. Key safety and diagnostic systems continuously monitor equipment operation, which is displayed to the operator in real-time graphics. Our fuel handling equipment is designed to provide improved operating cycle efficiency and minimize refuelling costs. Operators controls are ergonomically designed to allow simplified operation and increased safety.



Polar crane

Our polar cranes utilize a multi-purpose design that maximizes operational capability by combining numerous lifting features into a single compact and weight efficient trolley. The design improves productivity and reliability by providing four primary lifting systems including a main hoist, auxiliary hoist, maintenance jib crane, and containment inspection man lift, all located on one trolley.

