

INDUSTRIAL CRANES
NUCLEAR CRANES
PORT CRANES
HEAVY-DUTY LIFT TRUCKS
CRANE SERVICE
MACHINE TOOL SERVICE

KONECRANES[®]
Lifting Businesses[™]

Nuclear Single Failure Proof Cranes

SAFE, RELIABLE & USER-FRIENDLY BACKED BY OVER A HALF CENTURY OF NUCLEAR EXPERIENCE



SAFETY, RELIABILITY FULL COMPLIANCE



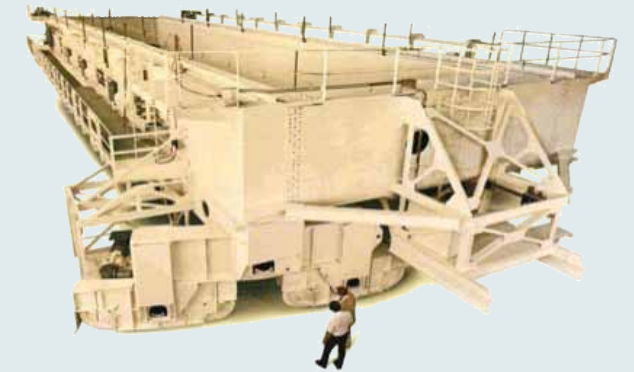
Single failure proof cranes are designed to provide enhanced safety for critical nuclear applications. As a leader in the nuclear industry, and with over half a century of nuclear experience, Konecranes and its affiliated companies have the experience and knowledge to provide every type of nuclear single failure proof crane. Konecranes Supersafe™ single failure proof technology is recognized worldwide for its in-depth design, and is compliant with stringent nuclear safety and regulatory requirements, including the U.S. Nuclear Regulatory Commission.

Experience

Supersafe™ single failure proof crane technology has been used in rocket launch cranes and molten steel handling cranes. As a result, Konecranes has valuable experience regarding the application of single failure proof technology in extremely severe applications with high temperatures, high duty cycles and harsh operating environments. This experience provides Konecranes with a valuable accelerated learning environment, resulting in extensive knowledge regarding long-term reliability and safety.

Regulatory Compliance

The Supersafe™ single failure proof cranes meet or exceed regulatory requirements for single failure proof cranes. Konecranes is intimately knowledgeable regarding NUREG-0554 and ASME NOG-1 requirements, and is an active member of the ASME NOG-1 Crane Committee.



SUPERSAFE™ SINGLE FAILURE PROOF TECHNOLOGY IN COMPLIANCE WITH ASME NOG-1, NUREG-0554 & NUREG-0612

- > Dual load path reeving designed in compliance with regulatory requirements, to provide redundancy in the unlikely event of the failure of any single wire rope in the hoist lifting system.
- > Redundant hoist machinery and gears are mounted in heavy duty steel-fabricated horizontally split gear cases designed to allow easy inspection and maintenance. All gears are precision machined to AGMA standards.
- > Dual heavy duty hoist brakes provide redundancy in the unlikely event of a single brake failure.
- > Overload, load hang-up and two-block protection is provided in compliance with NURGE-0554 and ASME NOG-1 using Konecranes patented hydraulic protection system which is designed to absorb the energy of overload or load hang. This system utilizes multiple methods of overload detection to ensure added safety.
- > Mis-reeving protection designed to monitor the position of the hoisting wire rope to validate that the wire rope is correctly positioned on the hoist lifting drum.
- > Onboard diagnostics provide real time output of key operational and diagnostic features to allow the operator to verify equipment operation.
- > Smartorque® programmable variable speed control provides precise crane positioning capability. Smartorque® incorporates diagnostic features to check key crane control functions and simplify troubleshooting.
- > Emergency hoist lowering is provided to safely lower a load during the unlikely event of a hoist system failure. The emergency lowering system uses a self-generated power source which is designed to safely lower the load at a controlled speed, even during a complete loss of crane power.
- > Site-specific seismic design is completed by Konecranes highly experienced in-house seismic specialists.
- > Konecranes routinely provides equipment to the nuclear power industry and is an IOCFR 50 Appendix B and NQA-1 Quality Compliant company. The Konecranes nuclear quality control program has been audited and approved by the Nuclear Procurement Issues Committee (NUPIC).

A legacy of expertise and quality, and a descendant of P&H® overhead cranes

Konecranes Nuclear Equipment & Services LLC was formed after the 2006 acquisition of Morris Material Handling, Inc. the original manufacturer of P&H® overhead cranes, hoists and replacement parts and now a wholly owned subsidiary of Konecranes Inc. P&H® is a registered trademark of Harnischfeger Technologies Inc. and is used by Morris Material Handling, Inc. under license. Morris Material Handling, Inc. is not affiliated with Harnischfeger Technologies Inc. or P&H Mining Equipment Inc.



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Konecranes is a world-leading group of Lifting Businesses™, serving a broad range of customers, including manufacturing and process industries, shipyards, ports and terminals. Konecranes provides productivity-enhancing lifting solutions as well as services for lifting equipment and machine tools of all makes. In 2010, Group sales totaled EUR 1,546 million. The Group has 10,000 employees at 578 locations in 46 countries. Konecranes is listed on the NASDAQ OMX Helsinki (symbol: KCR1V).

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