

Fuel-handling Equipment and Outage-critical Cranes Service and Support

Background

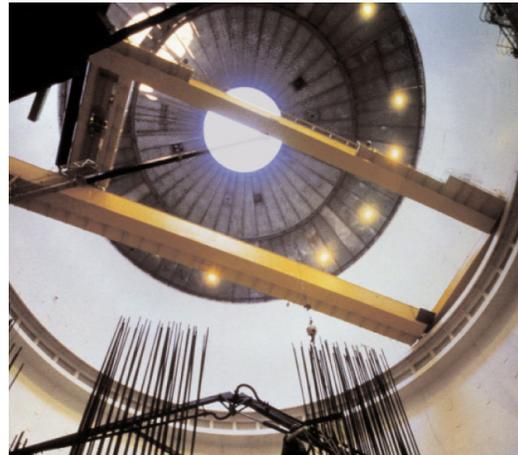
PaR Nuclear, a subsidiary of Westinghouse Electric Company LLC, provides all types and sizes of cranes for use in nuclear power plants, with particular expertise and experience in outage-critical cranes. An outage-critical crane, a polar crane or reactor building crane, is one whose performance has the potential to impact refueling outage duration. As nuclear plants progressively reduce refueling outage durations, crane performance increasingly affects critical-path outage time.

Given the age of some nuclear fleets, PaR Nuclear has extensive experience in upgrading crane performance. Such upgrades can include single-failure-proof (SFP) trolleys (described on the next page), modernizing obsolete electrical control systems and generally increasing safety, speed and reliability.

Description



350-Ton Polar Crane

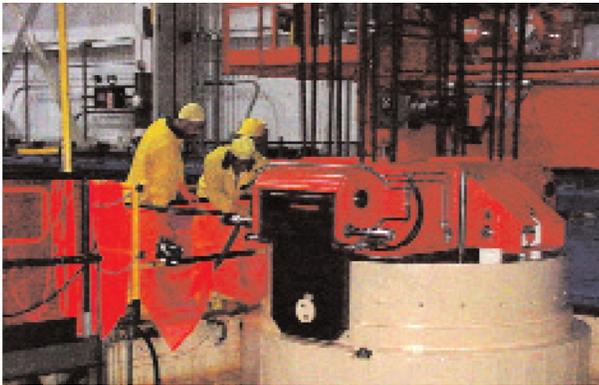


250-Ton Polar Crane

Polar Cranes or Reactor Building Cranes Polar cranes are designed for heavy lifts and operate on circular rails inside pressurized water reactor (PWR) reactor containment buildings. In order to overcome potential binding issues when operating on a circular track, PaR Nuclear has successfully

developed a wheel and end carriage design. Recent developments for single-failure-proof polar crane design include remote pendant control as well as enhanced operator interfaces such as position displays and load path monitoring.

Cask-handling Cranes



Cask handling

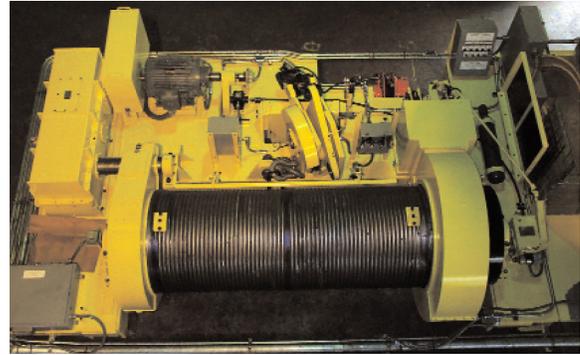


Cask-handling crane

Cask-handling cranes are used for handling a spent fuel transfer cask and are typically found in the auxiliary building. These cranes are designed to meet U.S.

Nuclear Regulatory Commission (NRC) guidelines for the safe movement of fuel. PaR Nuclear has upgraded numerous cranes to meet the NRC guidelines for single-failure-proof cranes required for handling casks. When needed we also reperform seismic analysis and provide engineering, equipment upgrade and licensing support for existing crane structures.

Single-failure-proof Cranes and Hoists



SFP hoist

When a heavy load handling application requires that any single failure in the hoisting system will not drop the load, PaR Nuclear provides SFP cranes and hoists. Our extra safety and monitoring (X-SAM®) system protects against the primary causes of dropped loads, e.g. double blocking and load hand-ups. X-SAM exceeds the minimum guidelines of NRC NUREG-0554 for SFP cranes, serving to protect the nuclear power industry against the inherent risks of dropping a critical load.

Turbine Building Cranes

Turbine building cranes in nuclear power plants are large, typically in the capacity range of 200 tons or more, often with long spans. They are frequently used to handle outage support equipment in addition to turbine and generator maintenance.



Turbine Building Crane