

# NUCLEAR POWER





# ABOUT US

## SARENS IS WELL POSITIONED TO MEET THE DEMANDS OF CLIENTS AROUND THE GLOBE AND ACROSS ALL PHASES OF TODAY'S NUCLEAR POWER PLANT LIFE CYCLE.

Sarens has been providing exceptional heavy lift and specialized transport services for over 60 years, building a thriving enterprise that now touches every continent with offices in more than 65 countries and dedicated employees who embody the spirit of the company's motto – nothing too heavy, nothing too high.

The success of Sarens as a specialist of the extraordinary is built around an unwavering commitment to safety, engineering creativity and operational excellence. Add state of the art design tools to one of the world's largest inventories of cranes, transporters and specialty rigging equipment, along with a team of highly skilled professionals and it becomes clear why Sarens has evolved into a worldwide leader in heavy lifting and engineered transport.

Success in servicing the nuclear power segment demands a level of commitment and skill that few can offer. From engineering creativity & expertise, to operational excellence, with an industry leading toolkit, Sarens has for nearly 40 years met the challenges of the nuclear industry with solutions and team members who possess

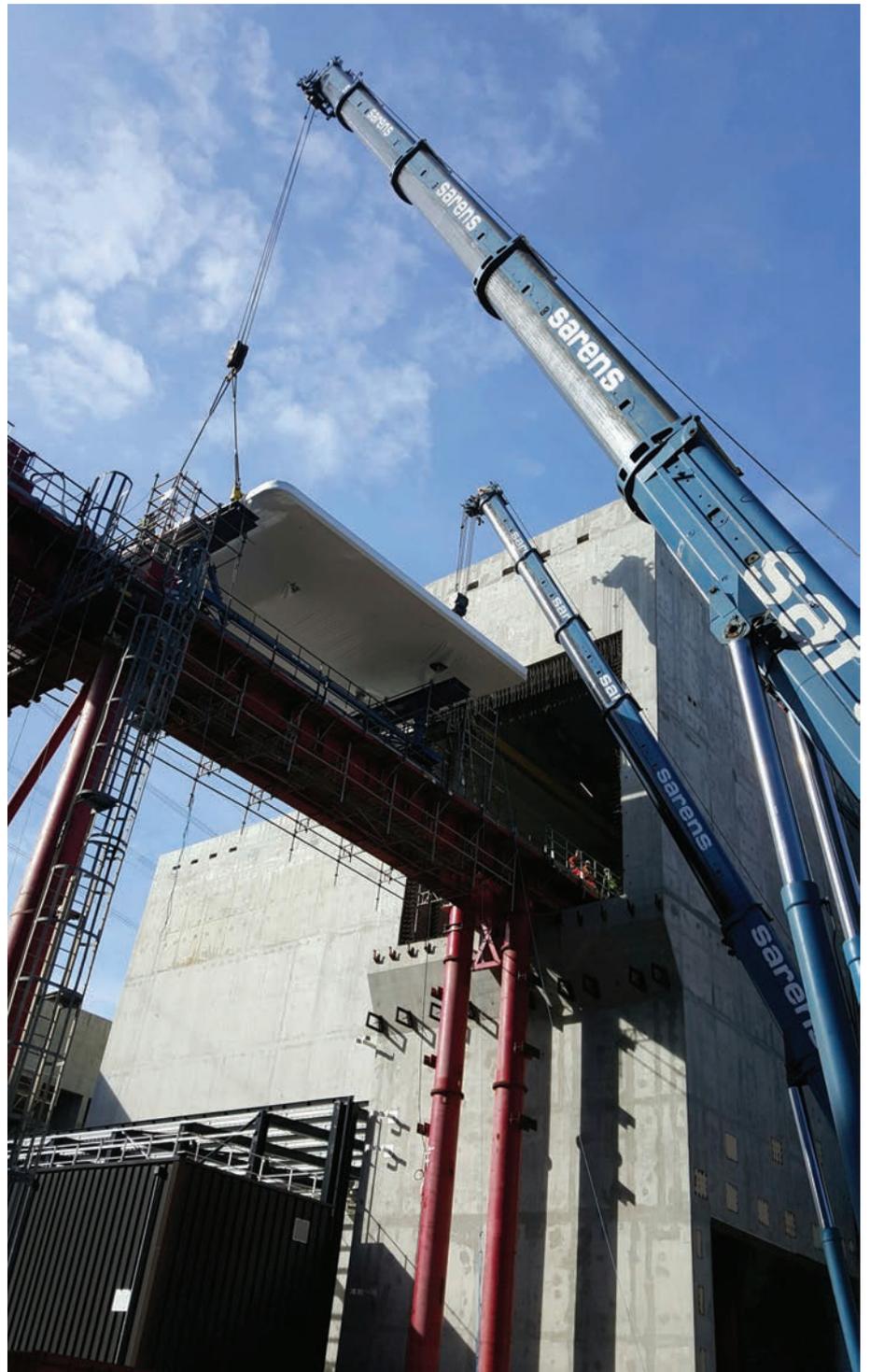
an unwavering commitment to safety, quality and the environment. From the 1970's when we first entered the nuclear power sector with the transport of Nuclear Steam Supply System (NSSS) components to today, building new plants with one of the largest cranes in the world, our SGC-140 – our work history shows that we consistently and successfully respond to the diverse and specialized challenges of the nuclear power sector.

As a technically innovative, technology-driven company, customers have always relied on our leading-edge technology for their nuclear heavy lifting and special transport requirements. With over 125 highly qualified engineers working at locations across the globe, we provide not only innovation for the greatest possible value that is cost-effective and safe but immediate solutions. Sarens is an ISO certified organization with a team of engineers and operational staff who are well acquainted with the unique challenges of operating in a nuclear environment, executing projects to meet industry and regulatory standards.



**SARENS DELIVERS A  
MULTI-DISCIPLINARY  
APPROACH  
WITH INDUSTRY-  
STANDARD, FRONT-  
END ENGINEERING  
DESIGN (FEED)  
WORK PROCESSES  
AND EXPERTS THAT  
POSSESS DECADES  
OF EXPERIENCE.**

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# NEW PLANT CONSTRUCTION

Since the 1970s, Sarens has been a pioneer in new plant construction. Our expertise in the new build sector includes small- and large-scale nuclear plant development. Sarens possesses the unique capability to develop, implement and operate first of kind lifting and transportation systems in a nuclear environment. These proprietary systems are able to withstand the scrutiny of regulators, third party reviewing engineers as well as our clients and Sarens' own high standards.

After years of developing proprietary lifting and transportation systems for the development of nuclear power; what was once considered extraordinary has now become the industry standard.

Our background includes directing proprietary lift and transportation systems to pioneer construction at Pressurized Water Reactors (PWR) and Boiling Water Reactors (BWR) nuclear power plants. The systems consist of gantry and derrick lift systems as well as innovative transportation methods which enabled the construction of the nuclear power plants that are operating today.

These highly engineered systems led us to develop the SGC-120, our 3.200t super-heavy lift crane which was designed to lift the Nuclear Steam Supply System (NSSS) components for today's larger and modularly constructed next generation of nuclear power plants. This super-heavy lift crane satisfies increased lifting capacities and stringent safety standards that make complex nuclear construction initiatives attainable. Looking at the future development of even larger nuclear plants, we are planning for tomorrow with the development of the SGC-250, the next step in the nuclear heavy lift evolution.

Located across the globe, our cranes provide efficient and cost-effective solutions that maximize use and minimize mobilization. Sarens has one of the largest heavy-lift fleets in the world. From mobile cranes that can lift up to 1.200t and lattice boom cranes that haul 2.000t to lifting tower systems that move up to 20,000 tons, we specialize in logistics solely dedicated to nuclear power. Sarens sets the standard in nuclear plant construction.



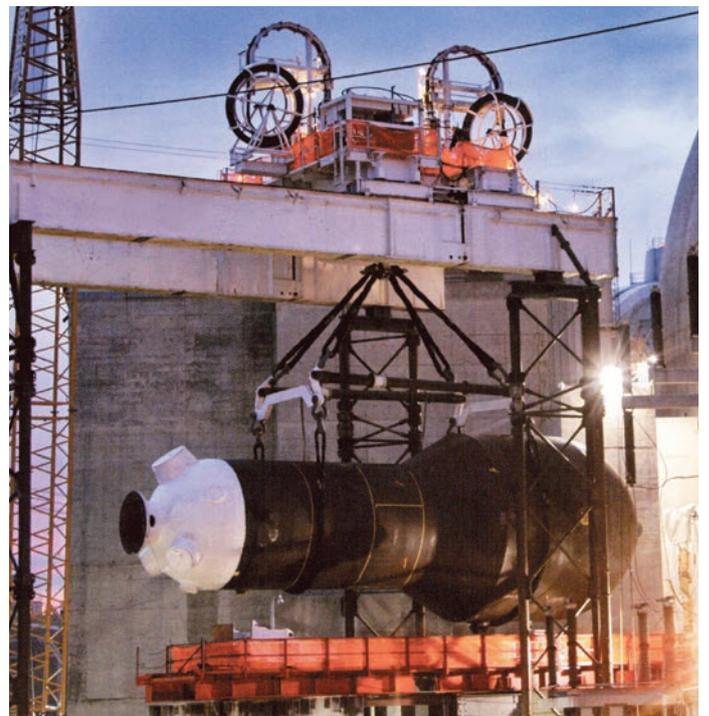
**SARENS IS A LEADER IN PIONEERING SOLUTIONS FOR REPLACEMENT OF CRITICAL PLANT COMPONENTS. WITH EXPERIENCED FIELD OPERATION MANAGERS AND DECADES OF EXPERTISE IN THIS HIGHLY REGULATED SECTOR, WE ENSURE ALL ASPECTS OF NUCLEAR PROJECTS ARE ALWAYS COMPLETELY SAFE—AND FULLY COMPLIANT.**

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#### **STEAM GENERATOR REPLACEMENTS**

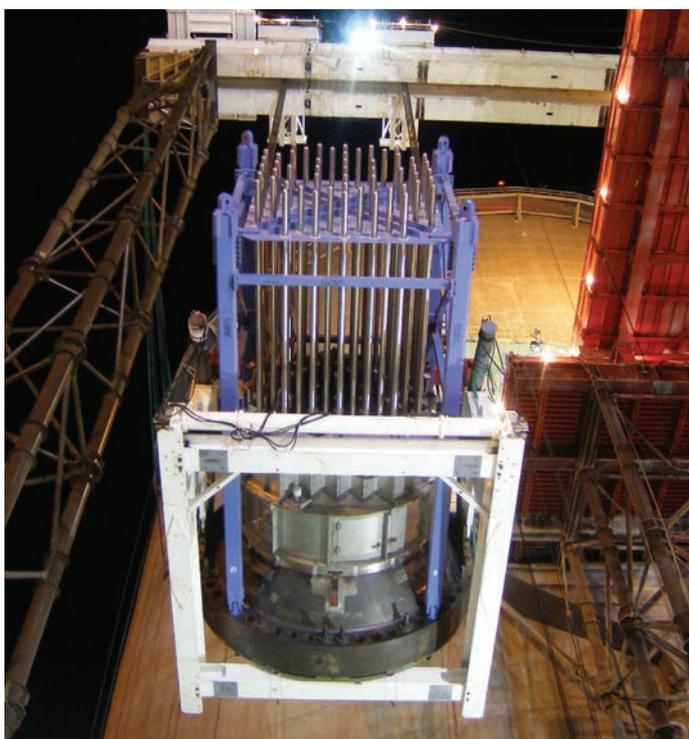
We have successfully completed more than 30 Steam Generator Replacement Projects (SGRPs) since 1990. Over twenty five years of success in component replacement projects has been driven by engineering excellence and operational expertise. Our team of engineers continues to create innovative, custom solutions and equipment for each SGR we perform, resulting in the development of first-of-kind heavy lift and transport equipment that has been successfully deployed to customer sites around the world. From inside and outside containment rigging, to transportation of old and new steam generators, Sarens is well prepared to tackle any SGR project.



# COMPONENT REPLACEMENT

## REACTOR VESSEL HEAD REPLACEMENTS

Sarens has proudly contributed to the successful removal and replacement of more than 20 reactor vessel heads (RVHs) over the past 20 years—some being the first of their kind. During these projects, precision, ingenuity and safety are paramount—all qualities that we exemplify. The complexity and accuracy required to lift and transport massive components frequently requires our team of highly skilled engineers to custom design containment lift systems, runway systems, and hydraulically operated RVH upending and down-ending carts. The Sarens team of engineers and operational staff are well acquainted with the unique challenges that accompany these replacements.



## OTHER MAJOR COMPONENT REPLACEMENTS

Replacement of steam generators, reactor vessel heads, core internals, condensers, heaters, turbines, stators, and transformers are among the many components handled over the years. The difficult physical access of many plants, requires specialized and often custom designed equipment to complete the replacement, Sarens expertise and experience ensures these are done safely and with minimum impact to the environment and disruption to local communities. As a result of this world-class planning and safe, disciplined execution, all projects are safely and successfully completed – and when time matters, you can trust Sarens to meet your schedule demands.





# DECOMMISSIONING

**WHETHER TRANSPORTING AND ERECTING PRECAST HORIZONTAL STORAGE MODULES FOR SPENT FUEL STORAGE FACILITIES OR REMOVING MAJOR PLANT COMPONENTS TO BE PREPARED FOR DISPOSAL, SARENS HAS THE REQUISITE SKILLS AND EXPERIENCE TO SUCCESSFULLY SUPPORT YOUR NEXT DECOMMISSIONING PROJECT. THE END RESULT FOR OUR CLIENTS IS A SAFELY EXECUTED, COMPETITIVELY PRICED PROJECT THAT ENSURES PUBLIC SAFETY AND MEETS ALL REGULATORY REQUIREMENTS.**

## DECOMMISSIONING AND DISPOSAL

Over the past 20 years, Sarens has removed over 50 large components from containment. From planning and scheduling to packaging, we are at the forefront of nuclear decommissioning and disposal activities.

Excellence in engineering and operational performance has driven our success in the component handling arena. We provide comprehensive and compliant services for decommissioning and disposal including component removal from containment. Upon removal, parts are then packaged and transported to appropriate disposal facilities. Component disposals range from steam generators, pressurizers to reactors and other large containment-ed components; execution includes rigging support of segmentation projects.

Sarens specializes in heavy-lift rigging and transport, primarily with equipment that has a nuclear pedigree. This enables us to handle irradiated components that are headed for decommissioning and disposal, while delivering meticulous attention to As Low As Reasonably Achievable (ALARA) best practices. Sarens project success is based on our strong emphasis on safety, a high level of readiness on the part of plant personnel and the highly experienced Sarens team which includes strategic logistical planning for performing work in parallel

## DRY CASK STORAGE COMPONENTS

Trust the Sarens team for offload, transport and assembly of horizontal storage modules (HSMs). These modules store spent fuel rods from nuclear reactors, and their base units typically weigh over 92t. Our team impeccably transports these from barges to storage sites using self-propelled modular transporters (SPMTs), which lift and set the modules into place using our specially designed gantry systems and SPMTs.



# SARENS IS A RECOGNIZED WORLDWIDE LEADER IN HEAVY LIFTING AND ENGINEERED TRANSPORT.

With state of the art equipment and value engineering, Sarens offers its clients creative solutions to today's heavy lift and transport challenges. With offices in more than 65 countries and dedicated employees, we are well prepared to support your next project.



**9**  
REGIONS



**65**  
COUNTRIES



**4195**  
EMPLOYEES

## EQUIPMENT

### CRANES



HYDRAULIC CRANES



LATTICE BOOM CRANES



HEAVY-LIFTING TOWER CRANES

### TRANSPORT



CONVENTIONAL TRAILERS



MECHANICAL STEERING



MODULAR TRAILERS ELECTRONIC STEERING

### TECHNICAL SOLUTIONS EQUIPMENT



BARGES



GANTRIES



JACKING SYSTEMS



STRAND JACKS



TWIN BARGES

## GLOBAL PRESENCE





# SARENS

## Nuclear

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