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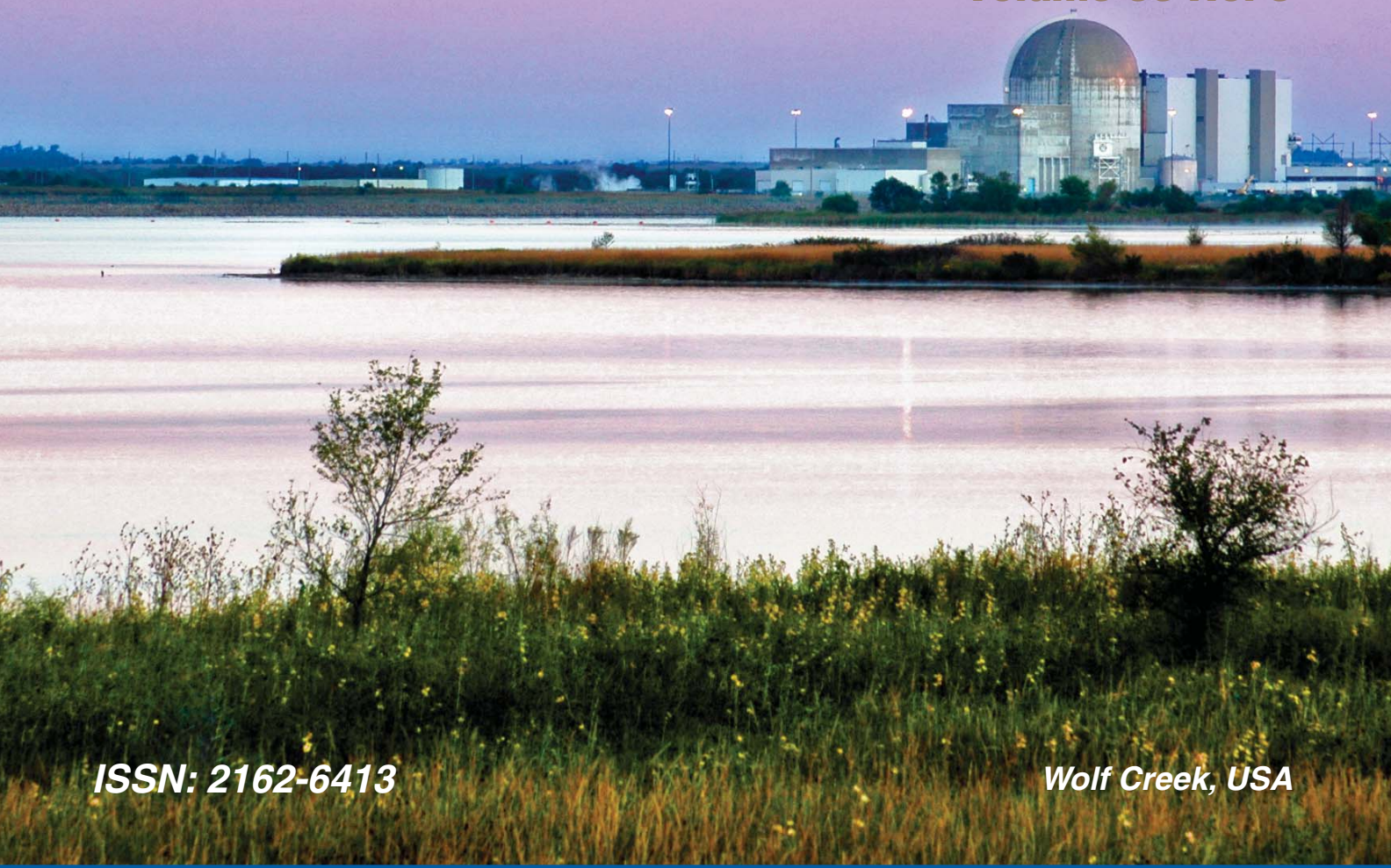

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Wolf Creek, USA

A Few Highlights:

Mitigating Outage Challenges

By Christopher Cox, PSC.

Christopher Cox

Christopher Cox has 20 years of engineering experience. He has developed solutions, including several patent-pending designs, for clients spanning the nuclear, steel, heavy lift and transport industries. He is a licensed professional structural engineer in multiple states.

Christopher joined PSC in 1999 as a structural engineer. Leveraging his expertise, business acumen and passion for his work, Christopher ascended to the role of vice president.

Under his leadership, PSC has grown significantly. The company now provides engineered solutions, fabrication, heavy lift and rigging solutions for industrial and commercial clients.

Christopher is active in several professional associations including the American Nuclear Society, the Specialized Carriers & Rigging Association (SC&RA) and the American Institute of Steel Construction. He earned a Bachelor of Science degree in civil engineering from Southern Illinois University. Prior to joining PSC, Christopher served as design engineer for David Mason & Associates and Nooter Corporation.

Inclement weather can play havoc on nuclear plant maintenance schedules. Winds as low as 20 miles per hour can shut down crane-based lifting operations. Poor visibility from rain and fog can increase the hazards from suspended loads — potentially endangering personnel and hindering rigging operations critical to supplying materials to elevated equipment hatches. Failure to get critical path maintenance components inside the plant means slipped schedules and lost revenues.

To solve this problem, PSC reimagined heavy lifting. The company's new patent-pending Pipe Modular Lift System (PMLS) eliminates the hazards of suspended loads, impacts from wind, and reliance on cranes by employing a platform that mechanically raises and lowers safety-related components. This approach delivers a safer, faster method of lifting equipment and materials up and into elevated equipment hatches.

Flexible Configuration

"We recognize that every nuclear plant is different, so we designed the PMLS with flexibility in mind," said Bogdan Gaita, director of projects with PSC.

The PMLS's capacity and footprint can be custom configured for every site. The system accommodates lifting capacities of 400, 800 and 1,200 tons at a vertical travel distance up to and exceeding 50 feet depending on the application, with exact height tailored to match project requirements. Lift speed is 20 inches per minute, twice as fast as strand jack systems.

The standard column section can be increased in 10-foot increments or customized to meet plant needs. The PMLS can be constructed in square, rectangular and round layouts based on site-specific conditions. It is designed for five percent side loading with clear span openings configurable to 50 feet or larger.

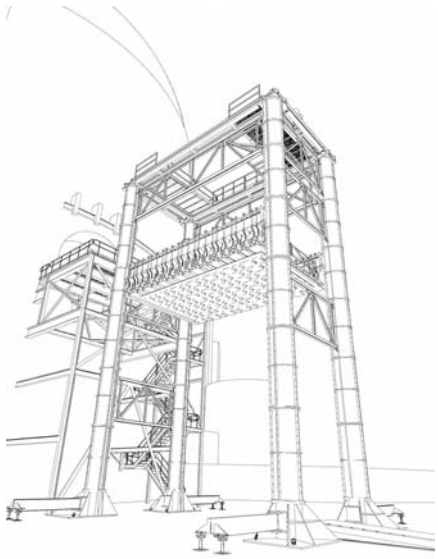
Safe, Reliable Operation

This flexible, platform-based approach offers numerous advantages. There are no cable drums or strands that can fail or hydraulics that can leak. The self-locking PMLS provides synchronized lifting and positive mechanical engagement of the cargo and the platform — 100 percent of the time.

Computerized controls keep the platform moving at a constant speed and set the vertical travel distance based on user input. Should the PMLS lose power, the load remains in place on the secured platform until power is restored. Performance is not impacted by unbalanced load.

The PMLS is also easy to transport and quick to assemble. It ships in 12 standard ground transportation trailers, versus 25 to 30 trailers needed for cranes or gantries. It requires no wide load or heavy load permits, and the PMLS assembles in five shifts, or fewer, compared to three to four weeks for comparable systems.

Because the PMLS platform accepts any mobile material handling equipment, such as PSC's self-propelled modular transporter (SPMT), with the cargo in place, load handling is minimized.



The original design concept and the real-world result of the PMLS which was utilized at a nuclear power plant located in the Midwest to lift materials and equipment 50 feet above the ground to gain access to the building's only equipment hatch.

PSC's patent-pending Pipe Modular Lift System (PMLS) was erected and fully functional in just five shifts.

PSC's trained operators simply drive the loaded SPMT onto the PMLS platform. This approach eliminates the need for additional equipment and lifts to transfer components from one system to another, thereby reducing risks to personnel and equipment. Once the PMLS reaches the desired elevation, the SPMT drives off the platform and transfers the cargo to the adjoining structure for delivery.

High Wind Tolerance

Another unique feature of the PMLS is its ability to operate in winds up to 50 miles per hour and withstand winds of 120 miles per hour. This high wind tolerance recently proved beneficial to a Midwestern nuclear plant. The PMLS helped the plant keep a large maintenance project on schedule, in spite of numerous windy days.

The utility needed to replace 48 cooling coils in four containment coolers inside its reactor building. This work, along with other activities, was performed during the plant's regularly scheduled refueling outage. Any schedule loss could cost the utility substantial loss of revenue per day. To complicate matters, all equipment had to be lifted 50 feet above the ground to access the reactor building's only equipment hatch.

After erecting the PMLS, which took just five days, PSC used its SPMT to move the cooling coils, knuckle boom cranes, and other materials onto the PMLS platform. Once each load reached the elevated equipment hatch, PSC drove

(Continued on page 46)