Monopiles and more

Sarens Projects expands its offshore wind power presence with a monumental job for the Coastal Virginia Offshore Wind farm.

Sarens Projects in the United States is supporting client Virginia International Terminals (VIT) with operations at the Portsmouth Marine Terminal (PMT), the hub for offshore wind projects, including the momentous Coastal Virginia Offshore Wind (CVOW) farm.

There are currently only 12 wind turbine generators off the Eastern U.S. coast, and CVOW promises to be the largest project of its kind in the U.S.

"Our presence on this important project reflects Sarens' long-term commitment to the future of offshore wind projects in the U.S. and across the globe," said Matthias Sarens, head of the Sarens engineering R&D team.

The pivotal 2.640 MW Coastal Virginia Offshore Wind project, developed by Dominion Energy, is located some 26 to 40 miles off the coast of Virginia. It will consist of 176 wind turbine generators (WTGs) connected to three offshore substations, each capable of transferring 880 MW. These substations will then convert the generated power from 66kV to 235kV before transferring it onshore.

From now through 2025, Sarens will receive and load out a total of 176 monopiles, 176 transition pieces, and jackets and topsides for the three offshore substations.


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Proven engineering

Sarens' on-site involvement in the project started in October 2023 with the arrival of the vessel *SunShine*, after the Sarens team in Rostock, Germany loaded it with the first eight monopiles.

Over the course of three days, the Sarens' VIT team smoothly and successfully unloaded the monopiles, swapped out the shipping saddles, moved the piles to storage and returned the shipping saddles to the vessel. Construction at the site was finished in time to receive the transition pieces in early 2024, when some 168 more monopiles were set to be offloaded and stored.

The monopiles were moved on K24 SPMTs configured in a 3-by-16-axle line unit and a 3-by-10-axle line unit, according to Sarens' Vince Pryke. The SPMTs were driven aboard the vessel and picked up the monopiles on shipping saddles.

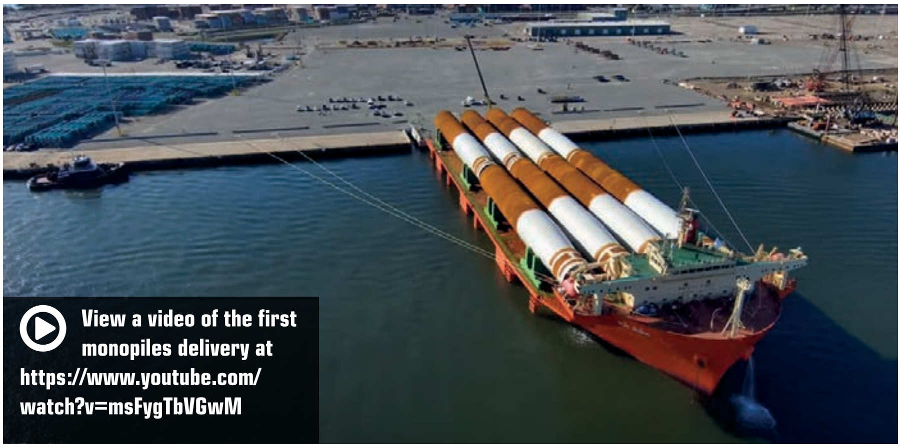
"The shipping saddles are then removed from the monopiles, which were then driven to the storage area and set down on support structures," he said.

The monopiles are of various dimensions, either 8.5 meters, 8.8 meters, 9.2 meters or 9.5 meters in diameter. Typical sizes are 8.5 meters, which are approximately 69.59 meters long and weigh about 1,142 metric tons. The 8.8-meter monopiles are approximately 72.32 meters long and weigh about 1,217 metric tons.

Pryke said safety concerns were mitigated by proven engineering in the development of the transport method.

"Clear communication and understanding of responsibilities were in place across the various stakeholders involved in the operations, including the Port of Virginia and their stevedores; the developer of the site; the vessel operator; the owner of the assets; and the Sarens team," Pryke said.

Lifting operations will occur for load out of the monopiles when they head offshore for installation in the ocean windfarm. ■


View a video of the first monopiles delivery at https://www.youtube.com/watch?v=msFygTbVGwM