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Engineered Rigging Facilitates Powerplant Upgrade

Custom Lifting Solution Safely Elevates Heavy Load in Tight Space

VALPARAISO, IN, February 1, 2021 — When it came time to replace its coal ash conveyor, the Ottumwa Generating Station faced a logistical challenge. The new conveyor was 110-feet long and weighed a hefty 138 tons—and it needed to be lifted 10 feet so permanent legs could be installed to support the structure. Adding to the complexity was the low headroom and congested space inside of the power plant. These factors precluded the use of a crane and bulky cribbing stacks. Engineered Rigging put its team of innovative engineers to work and the result was a modular lift system that can be customized for similar situations around the globe.

After assessing the project's goals, the Engineered Rigging team created a three-part lifting strategy using 3-D modeling to avoid surprises when the equipment reached the plant. First, the engineers identified how to move the massive conveyor adjacent to the boiler. They designed a system (as shown in photo below) featuring 16 omnidirectional

load skates each with a 10-ton capacity, and 12 custom-fabricated, 23-foot-long support beams, each with a 19-ton capacity. This solution enabled the company to translate the conveyer about 20 feet and position it on grade.

The second part of the plan involved the development of a lift fixture to set four hoppers onto the conveyor. The custom fabrication for this portion of the project was completed at Engineered Rigging's facility in Russellville, Ark.

For the final phase of the project, Engineered Rigging developed a powerful, space-efficient solution to elevate the entire assembly 10 feet so that the conveyor's support legs could be installed. For this task, Engineered Rigging created a customized lift system comprised of 24 lifting columns.

Given the length and weight of the conveyor, safety was a top priority. Engineered Rigging designed the lift system so that a single operator could remotely control the 24 lifting columns. In addition, as the columns raised the conveyor, they mechanically locked into place which enabled the installation of the legs without a suspended load.

The modular lift system was rapidly assembled inside of the plant in just two days of double shifts. The system lifted the 138-ton conveyer into place and positioned it on grade with a total lift time of only 30 minutes. Tear-down was accomplished in a single day of double shifts.

"By having a breadth of talent, heavy lift technology and fabrication capabilities in-house, Engineered Rigging is able to deliver rapid turnaround times for custom heavy lift solutions," said Engineered Rigging's president, Christopher Cox, P.E. "From concept to completion, we fulfilled the Ottumwa Generating Station Bottom Ash Conversion Project's needs in just 16 weeks,"

For this multi-faceted project, Engineered Rigging provided engineering consultants, design, fabrication, heavy lifting equipment rentals and onsite technical support. The modular lift system's gauge and column spacing can be customized to accommodate lifted items that are various lengths and widths, making it a practical solution for numerous applications.

About Engineered Rigging

Engineered Rigging (ER) is a global innovator in heavy lifting solutions. By leveraging decades of experience and a wealth of technical knowledge, ER overcomes the most complex logistical challenges for a variety of industries. The company provides equipment rentals and sales, engineering services and the design and fabrication of custom lifting technology. For more information, visit www.EngineeredRigging.com.

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