

COMPLEX PROJECTS, EXPERT SOLUTIONS



AltairStrickland

An EMCOR Industrial Services Company

Among the country's premier authorities in process unit upgrades, revamps and turnarounds, La Porte, Texas-based AltairStrickland, an EMCOR Industrial Services company, is proud to serve some of the biggest names in refineries, petrochemical plants, chemical facilities, gas plants, power plants and ammonia plants.

Over the past 40 years, by listening to and collaborating with clients, the company has honed its sweet spot. AltairStrickland specializes in both scheduled and unscheduled (emergency) work on fluid catalytic cracking units (FCCUs), delayed coking units (DCUs) and ammonia units. However, the company's experience doesn't stop there. AltairStrickland is experienced in virtually all aspects related to turnarounds, including how to work through the many issues and challenges that stem from getting turnaround clients back on line safely and quickly.

"On every turnaround, we look for ways to go above and beyond for clients," said Rick Ramirez, director of sales and marketing for AltairStrickland. "By using the depth and range of experience we have gained over the past 40-plus years, we are able to provide solutions to our customers' most complex challenges. We are committed to customer

satisfaction and to being best in class for the services we provide."

Averaging some 25 turnaround projects annually, AltairStrickland is busy and productive, many times being called upon by clients to return and engage in additional work. According to Jeff Webber, AltairStrickland's president, more than 75 percent of the company's work comes from repeat customers.

"That percentage speaks volumes," Webber said. "It shows our goal isn't to perform one project for a customer, but to build a relationship that lasts in perpetuity. We strive to work in a manner that consistently shows customers just how seriously AltairStrickland approaches quality, pre-planning, safety and value. When it comes time for additional project opportunities, we want to be our customers' preferred contractor. We want to earn the chance to work for them over and over again."

Success at a major Gulf Coast facility

AltairStrickland recently completed a major FCCU turnaround for a client in Louisiana. Engineering Manager Diego Rojas revealed that, although the project was by no means AltairStrickland's largest in terms of manpower, its complexity sets it

apart in the company's portfolio of ongoing success at major manufacturing sites.

"When you look at the job from the start, in comparison to our large cat cracker and coker jobs, it doesn't stand out as a very large job in terms of the total number of workers," Rojas said. "Those jobs typically require 200-300 individuals, whereas this one was closer to 150-170. But the job was incredibly complex. We planned it for over two years, and some of these lifts — the setting of the equipment, its orientations and elevations — have been critical and very difficult due to the required tolerances.

"In particular, the equipment that we removed — called external cyclones — are fairly large in size. The primary cyclone itself is about 67 feet tall and 10 feet in diameter, and it has some very awkward nozzles that made it very difficult to extract it from the structure itself. That particular lift required us to 3-D model the entire structure, the cyclone itself and the rigging to ensure all the clearances were met

— and it worked perfectly according to plan. We knew we would have an inch or two of clearance, and that's exactly what we had."

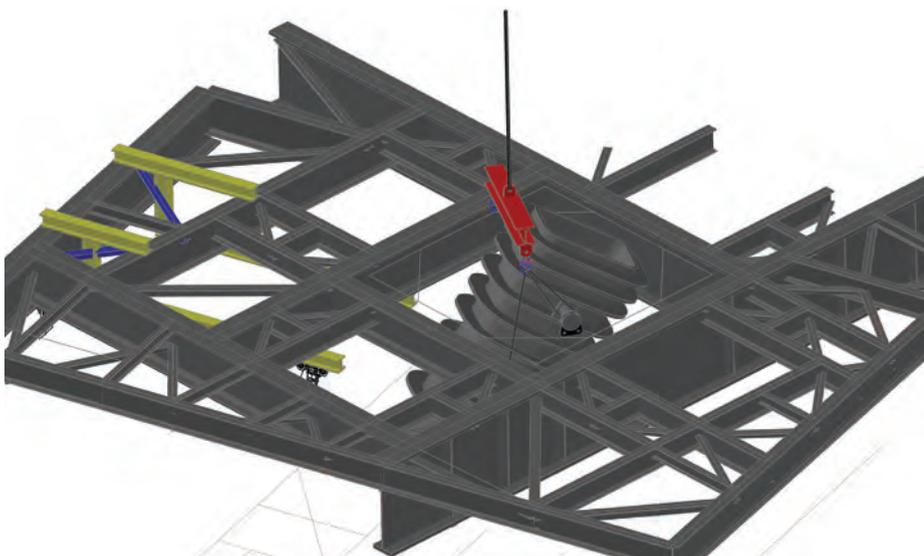
Rojas recalled how rewarding it was to witness this success, noting "you could tell folks on the job were excited doing that work because, in the event that lift hadn't happened,

"One lift required us to 3-D model the entire structure to ensure all the clearances were met — and it worked perfectly."

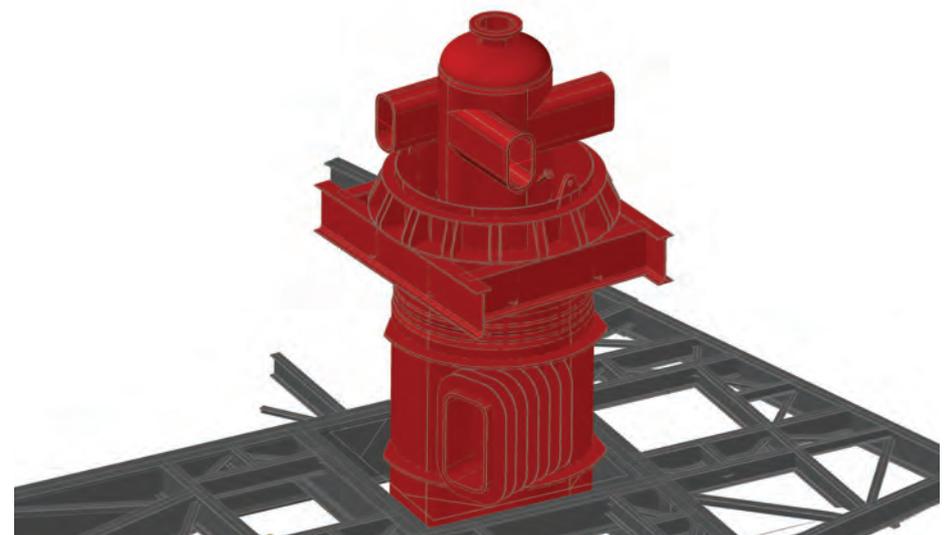
— Diego Rojas, AltairStrickland

some significant modifications to the structure would've had to occur while loads were on the crane, and that is a very hazardous activity." Instead, AltairStrickland proved the accuracy of its pre-planning.

Another complex lift involved a rigging plan that would accommodate not only the primary cyclone but also four secondary cyclones



Cyclone 3-D model screenshots illustrating a removal lift.



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simultaneously. “The primary cyclone ties into four secondary cyclones — patterned in a square, if you will — so we had to come up with a rigging plan,” Rojas explained. “With the load cells, we were able to make the minor adjustments to the rigging and again make those lifts successfully. Just on this project alone, if you aggregate all the loads, we’ve lifted well over 1,750 tons.”

Rojas emphasized the complexity of this project lay in its precisely planned stacking of equipment. “There were a lot of simultaneous operations happening at different elevations,” he said. “Cat crackers tend to be erected stacked on top of each other, and that’s exactly what the situation was, so there was just a lot of planning that had to happen.”

Simple safety innovation

When it comes to complex projects such as the one AltairStrickland performed for this client, Rojas explained that although his company is “very comfortable” with planning challenges, it also treats them as an opportunity for innovation — especially in safety.

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— Rick Ramirez, AltairStrickland

“One of the environmental hazards we had on this particular job was how congested the work area was,” Rojas stated. “We had so many folks working on top of each other at different elevations, so one of the big safety hazards was dropped objects. Even a small, half-inch stud can do serious damage to an individual if it falls several decks.”

Many safety programs aim to reduce the hazards associated with dropped objects on industrial jobsites, but AltairStrickland devised its own methods on-site to more effectively work toward this goal. “Right before every major break — lunch, shift changes, etc. — all the craftsmen were told to do housekeeping, whether it be picking up water bottles or anything else around them, and the number of miscellaneous dropped objects fell nearly to zero,” Rojas explained. “It was a very simple implementation that kept our folks safer.”

Early planning key to complex jobs

AltairStrickland’s unique ability to handle complex projects seamlessly is driven by the extensive planning process. “We identified early on that much of the project’s welding could be performed pre-turnaround to minimize welding during the turnaround,” Rojas said. “As we are all well aware, pre-turnaround maintenance hours are much more cost-effective than turnaround hours, so we actually addressed the majority of our welding as a pre-turnaround activity.”

Rojas went on to say the welding was a crucial element of the job, because although lifts are always “picturesque,” the welding is what “makes or breaks” a project. “The welds themselves were on two-and-a-quarter chrome, which is fairly thick for the cat crackers of the world,” he explained. “It’s rare because cat crackers tend not to have pressures requiring that thickness. We did extensive constructability reviews on these weld details — the bevels, the preparations — and focused on giving our welders the best possible environment to weld, whether it was in the form of cooling suits for confined spaces that require pre-heats, the placement of the welding machines themselves or any other adjustments of settings.

“We do complex jobs, and the way we differentiate ourselves from the competition is the knowledge we have and how we can plan to complete these projects in the safest and most efficient manner. Our supervision has the experience and skillsets to ensure success.”

Ramirez echoed Rojas’ sentiments about the importance of early engagement. “I’d like to emphasize the length of time we’ve been engaged with this client — the planning and constructability, everything we did up until the turnaround to help ensure this job would go as planned. This is what we bring to the table. The engagement of a contractor as early as possible is key to the success of a project.”

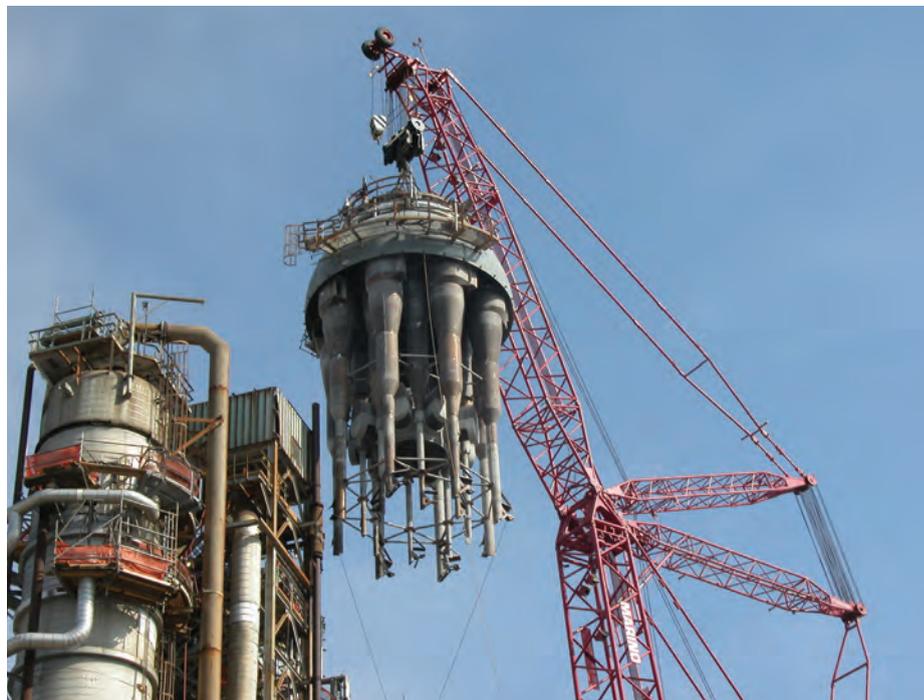
“We’ve been involved at every stage, and it’s all been doable because we were engaged so early on,” Rojas confirmed. “That’s the only way to do a project like this. You can’t come in a month or two into the job and attempt something of this complexity. And this is typical of the work we are known for and what people expect of us.”

“The client had a number of fabricators all across the U.S. and Canada fabricating these components that were being replaced [during the turnaround],” added Ramirez. “We had a lot of interfacing with the client before the turnaround even started, and that’s invaluable.”

Rising to these types of challenges has helped AltairStrickland become a recognized industry name in turnaround construction. According to Webber, by continuing its long tradition of customer satisfaction and innovative problem solving, AltairStrickland looks forward to the future with confidence.

“By applying the same specialized, dedicated focus on planning, safety and quality to everything the company does, AltairStrickland is well positioned to help our customers improve asset reliability and optimization while serving the communities in which we both reside in the safest, most efficient way possible,” he said.

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