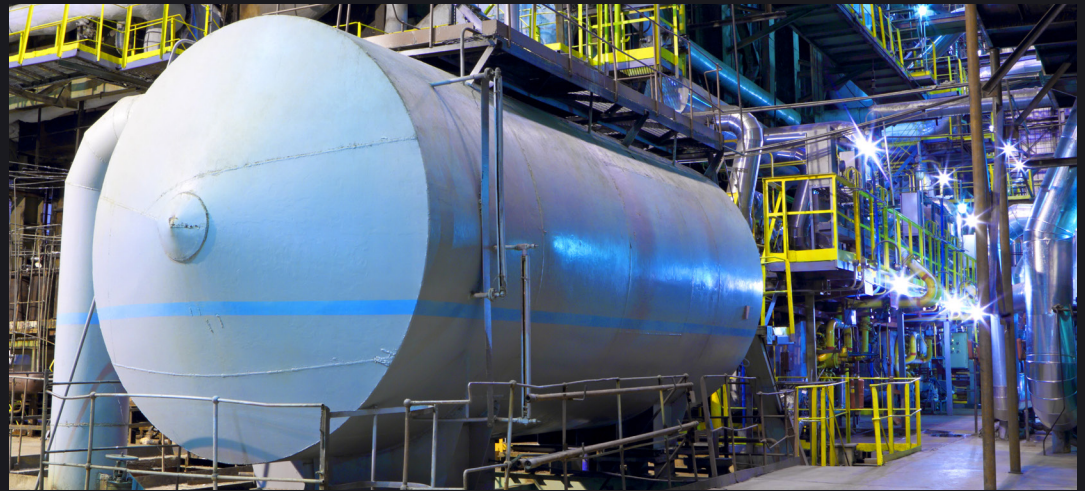




CASE STUDY

GMMOS succeeds on vessel fabrication project in UAE with Octave Aspect Pressure Vessel



Key facts:

Company: Gulf Marine Maintenance & Offshore Service Company LLC

Website: www.gmsuae.com

Industry: Petrochemical & Gas

Country: United Arab Emirates

Octave products used: Aspect Pressure Vessel (PV Elite)

Since 1983, Gulf Marine Maintenance & Offshore Service Company LLC (GMMOS), the high-end steel fabrication division of the VASUDA Group, has been providing equipment and services to the global oil and gas industry. GMMOS has headquarters in Dubai, United Arab Emirates (UAE) and a 35,000 m² fabrication yard in the Jebel Ali Industrial Area 1 in the UAE and at Aktau, Kazakhstan.

The company offers a range of specialized services and equipment, such as pressure apparatus, piping, pipe spooling and skid packages. Its comprehensive offerings include mechanical and process engineering solutions for various sectors. These sectors encompass onshore and offshore environments, marine, shipping, chemical processing, water treatment, desalination, as well as power plant and refinery equipment.

Identifying goals

GMMOS has been working in coordination with a global engineering procurement and construction firm on a large-scale fabrication project for the development of the Shah Gas Field southwest of Abu Dhabi, UAE.

The project includes 31 pressure vessels for multiple purposes and varying sizes with GMMOS providing design, detailed engineering, material procurement, fabrication, inspection, testing, painting, delivery and documentation of the pressure vessels.

Key benefits:

- Safely devised all new pressure vessel assets while adhering to ASME standards
- Achieved a quicker and more precise completion of necessary design calculations
- Effectively ensured all new assets could withstand hydro-test conditions
- Seamlessly and accurately fulfilled all project requirements and quality standards

Overcoming challenges

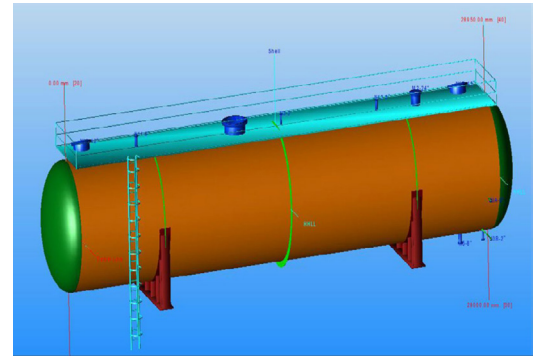
A challenge arose because these were low pressure vessels, the thickness required for internal pressures was not sufficient to provide the structural stability needed during operation and hydro-test conditions. Of the project's 12 largest horizontal vessels, two had an inside diameter (ID) of 6 meters and tan-to-tan length of 29 meters and two had an ID of 5 meters and tan-to-tan length of 25 meters.

By using Aspect Pressure Vessel, GMMOS produced accurate mechanical strength calculations for pressure vessels per ASME BPVC Sec VIII Div-1 Ed 2007 + 09 Addenda and Ed 2010 rules for the design and construction of pressurized boilers and vessels.

"We completed the required calculations faster and produced more accurate output by using Aspect Pressure Vessel," said Muthalagu Alagappan, supervisor of Engineering Design.

Realizing results

Since the majority of these were sloping vessels, the saddle at the shorter side needed to have enough height so that its moment of inertia (MOI) equaled or exceeded the stiffener rings provided. Aspect Pressure Vessel provided a saddle



design input option called height of web at center, to ensure that the MOI of the saddle was sufficient – where the circumferential stiffener ring was broken – to allow for saddle placement on the vessel.

This type of project with its extremely large vessels, very high diameter-to-thickness ratios and great distances between saddle supports presented a challenge in finalizing the geometry, thickness and location of supports. "By leveraging Aspect Pressure Vessel, we were able to meet all of the project's requirements and quality standards," Alagappan said. "This helped ensure a good reference from the client for future jobs."

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Muthalagu Alagappan
Supervisor of Engineering, GMMOS

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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