CASE STUDY

L&T's heavy engineering IC succeeds with Octave Aspect Pressure Vessel in its multi-project environment

Key facts:

Company: L&T-Chiyoda Ltd.

Website: www.larsentoubro.com

Industry: Chemical & Petrochemical

Country: India

Octave products used: Aspect Pressure Vessel *(PV Elite)*

Headquartered in Mumbai, India, and serving clients in 40 countries, Larsen & Toubro's Heavy Engineering IC (L&T) designs, engineers and manufactures equipment and systems for clients in the oil & gas, refinery, cracker, coal gasification, petrochemical, fertilizer and related sectors. This includes thermal and mechanical design, engineering and stress analysis, procurement, project management, logistics and specialized services. Leveraging Aspect Pressure Vessel, L&T has successfully designed pressure vessels and heat exchangers for refineries and fertilizer and petrochemical plants plus related equipment and facilities.

Identifying goals

L&T has found Aspect Pressure Vessel to be versatile on a wide range of projects, including designing the largest ACN Reactor for a petrochemical project in Thailand, an ammonia converter vessel with 250 mm shell thickness for a fertilizer plant in Thal, India, and a 460 mm thick tubesheet for the synthesis loop waste heat boiler for a fertilizer plant at Sohar, Oman.

Overcoming challenges

To ensure an efficiently designed project, L&T customers often specify non-code requirements. "With Aspect Pressure Vessel, we can complete full vessel designs, even those including custom codes, eliminating the need for other supporting software or custom spreadsheets for the calculations," explained Dhanaji Jadhav, manager of the Design and Analytical cell at L&T. "Aspect Pressure Vessel provides everything, including the design of non-pressure parts such as trunnions and base rings."

Key benefits:

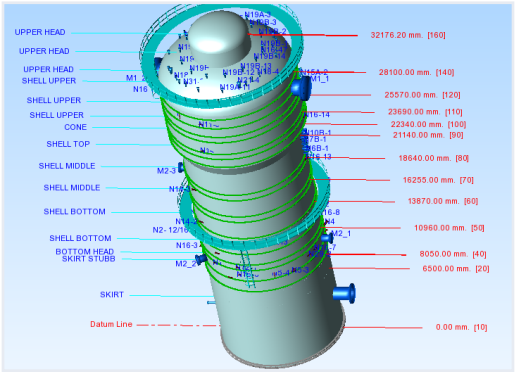
- Streamlined vessel design process, incorporating custom codes and eliminating the need for additional software or spreadsheets.
- Accurate weight and center of gravity calculations, reducing manual effort while enhancing transportation and handling planning efficiency.
- Reduced design cycle time, facilitating faster proposal development for competitive bidding and increased order submissions, thereby expanding client orders.

Estimating weight and center of gravity accurately are critical for transportation and handling. “We found that Aspect Pressure Vessel calculates actual weight and center of gravity more accurately, which allows us to eliminate the time-consuming practice of manual calculations,” said Jadhav.

In order to complete projects on time, bills of material must be placed as early as possible. This requires preliminary design approval from the client and third-party inspecting agencies. Given the wide-scale acceptance of Aspect Pressure Vessel across various industry sectors, L&T can expedite approvals and accelerate orders by sharing the same files with both customers and inspection agencies.

Realizing results

Aspect Pressure Vessel’s user-friendly interface allows new engineers to learn and become productive within one week, with the department working at peak capacity. This allows L&T to evaluate 400 or more designs annually, and accurate calculations and quick iterations during design have



helped them reduce the design cycle time substantially. When developing proposals for competitive bidding, timing is also critical. “Our engineers are able to carry out iterations quickly and submit the bids on time,” added Jadhav. “Faster design helps us submit more bids and increase our client orders.”

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Dhanaji Jadhav
Manager of Design and Analytical Cell, L&T Heavy Engineering

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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