



L&T Valdel Engineering, India

Key Facts

Company: L&T Valdel Engineering Ltd.

Website: www.lntvaldel.com

Description: L&T Valdel Engineering Limited offers comprehensive engineering capabilities covering the complete project lifecycle, including concept studies, FEED, basic engineering, concurrent, 3D model-based detailed engineering, special studies including safety, risk assessment and pre-service engineering.

Industry: Oil & Gas

Country: India

Products Used:
CAESAR II®

Key Benefits:

- Reduce labor time using both skilled and unskilled staff
- Generate accurate results despite changes occurring during the project
- Reduce changes to existing drawings
- Increase modeling accuracy

L&T Valdel Increases Productivity for Ghana Offshore Project

L&T Valdel Engineering saves labor hours and increases modeling accuracy with CAESAR II

Identifying Goals

L&T Valdel Engineering Limited (L&T Valdel), the engineering group of Larsen & Toubro Limited's upstream oil and gas operating company, provides engineering services for oil and gas projects including well head and process platforms, floating production storage and offloading (FPSO) facilities, pipeline systems, and drilling rigs. More than 600 employees in India and the UAE have completed more than 500 projects worldwide.

L&T Valdel client Tullow Ghana Limited and partners were developing a Tweneboa, Enyenra and Ntomme (TEN) discovery in the Deepwater Tano (DWT) block off the coast of Ghana, West Africa. The client chose MODEC International to serve as the engineering, procurement and construction contractor for a very large crude carrier (VLCC) conversion for the project.

The facility provides production and treatment of 80,000 barrels per day (bpd) of crude oil, 65,000 bpd of produced water (non-concurrent), and 180 million cubic feet per day of gas. MODEC in turn awarded L&T Valdel the detail design engineering contract for the FPSO vessels.

L&T Valdel's assignment included seven pipe rack modules and 18 modules with 209 pieces of equipment that included compressors, pumps, separators and exchangers. Piping diameters ranged from 3/4 inch to 36 inches.

Overcoming Challenges

Addressing client changes and staff limitations on complex offshore installation

The company performed a stress analysis on 138 piping systems involving 1,095 line systems operating in normal and severe environments with 128 load combinations, all while facing a short schedule and using both skilled and unskilled staff.

The client changed inputs during the project, and L&T Valdel had to interface with the pipe vendor to resolve these. A decision to perform the blast analysis of explosion risk assessment came after the approved for construction drawings were issued. The challenge was to pass the systems without changing major routing in already issued drawings.

Realizing Results

Reducing engineering work-hours with CAESAR II®

“With the help of CAESAR II’s flexible input and output capabilities, we were able to develop a macro to interface PDMS and CAESAR II which saved us 85% in work-hours for modeling,” explained Sonali Parekh, senior technologist at L&T Valdel. This allowed the staff to concentrate on technical solutions. L&T Valdel developed another macro to interface with Microsoft® Excel® to generate client and internal reports.

The company saved an additional 90% in work-hours for its layout engineers and 50% of time for the structural engineers. The automatic Isogen isometrics helped it deliver fast output, and the accuracy on modeling for internal clients increased enormously.

“Even new engineers became quickly productive,” Parekh added.

Eliminating manual errors with CAESAR II

CAESAR II eliminated manual input and calculations that would have significantly increased the chance for errors and the time it would have taken for L&T Valdel to determine the optimum piping and equipment design. The team avoided performing manual support markup by extracting isometric drawings automatically using Isogen and the manual validation of the various international engineering codes, saving additional hours while ensuring accuracy.

L&T Valdel was able to leverage CAESAR II to greatly reduce the number of review meetings and satisfy the client with technically competent, cost-effective solutions for the almost 80 systems and do so in much less time, even absorbing additional changes and requirements.

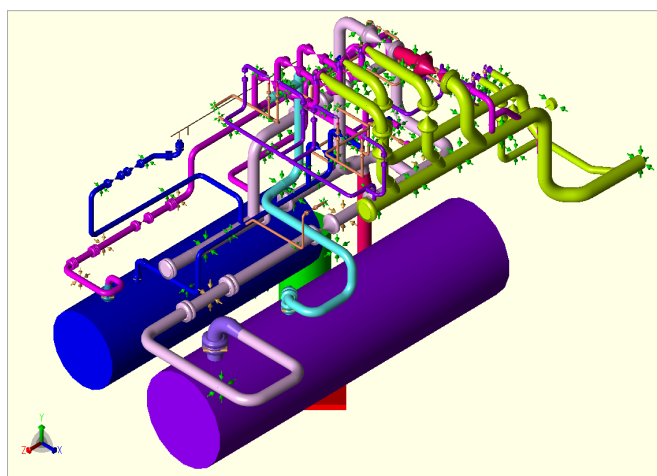
Moving Forward

Winning repeat business from satisfied clients

Leveraging CAESAR II, L&T Valdel achieved client satisfaction by providing technically competent, cost-effective solutions within a short schedule while absorbing the client’s changes throughout. Additional and repeat business is coming to L&T Valdel as a result.

Award-Winning Project

L&T Valdel received the first place CAESAR II Drivers of Success Award for its use of the software. The annual Drivers of Success competition recognizes innovative applications of Hexagon PPM products, impressive project results and significant benefits from collaboration among disciplines and the integration of the products.



About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Hexagon’s PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 21,000 employees in 50 countries and net sales of approximately 3.9bn EUR. Learn more at [hexagon.com](https://www.hexagon.com) and follow us @HexagonAB.