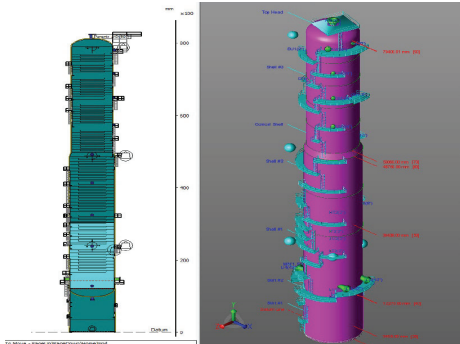


CASE STUDY



CADWorx & Analysis Solutions



L&T Chiyoda Addresses Mega Project Challenges with PV Elite

L&T-CHIYODA LIMITED (L&T Chiyoda) is an engineering consultancy company formed by Larsen & Toubro Limited of India and Chiyoda Corporation of Japan, world leaders in engineering, construction, and related fields. L&T Chiyoda specializes in design and detailed engineering for projects such as petroleum refining, petrochemicals, chemicals, fertilizers, oil and gas, and LNG and LPG facilities.

To meet project requirements, LTC uses various software packages for the automation of engineering and design processes, ranging from drafting software to high-end intelligent software that makes engineering easier, faster, and more accurate. These programs include Intergraph PV Elite, CodeCalc (now part of PV Elite), and other engineering and design programs.

Addressing challenges of complex petrochemical mega project

For this complex and ongoing petrochemical mega project, L&T Chiyoda has provided engineering and design for static equipment such as pressure vessels, shell and tube heat exchangers, columns, reactors, and filters. The scope of work includes the design and detailed engineering, including process, piping, civil, equipment, electrical and instrumentation engineering through 3D Modeling.

Developing accurate, on time deliverables with Intergraph PV Elite

L&T Chiyoda developed very complex ASME code calculations for this project such as minimum design metal temperature, maximum allowable working temperature, maximum allowable pressure, external pressure, center-of-gravity, and wind and seismic design for a wide variety of design codes using PV Elite. The CodeCalc module provides fast component analysis when not designing a complete vessel or heat exchanger.

One of the larger pieces of equipment was a column with dimensions of 9,600 X 8,700 mm and a length of 82,000 mm. The fabricated weight was 1,007 tons, with an operating weight 2,575 tons and a hydro-test weight of 5,834 tons. Due to the column's size, it was fabricated in one piece, cut into two pieces, shipped to the site, and welded back together on site.

Benefitting from design automation

"We found PV Elite very user-friendly with its detailed reports and help compared to other similar software available in the market," explained Mitul Patel of L&T Chiyoda. PV Elite does design calculations per ASME, PD-5500, EN-13445, and WRC standards and provides a wide variety of wind and seismic design codes for international project requirements. "The software is up-to-date with the latest codes, addenda, and interpretations so we can avoid manual and spreadsheet-based calculations," Patel added. The software's Nozzle Pro finite element analysis (FEA) run directly from PV Elite makes analysis easy. "These levels of automation help us meet dates in fast track engineering projects. Also, various suppliers and clients use PV Elite which allows us easy comparison and approval of design calculations," Patel stated.

Avoiding delays in issuing engineering deliverables

In the highly competitive engineering sector business scenario, using the latest tools and software such as PV Elite helps L&T Chiyoda maintain schedules. "We can minimize chances of errors that can occur with manual and spreadsheet calculations and avoid delay in issuing engineering deliverables. In short, we cannot imagine the design of static equipment without PV Elite," concluded Patel.

"We found PV Elite very user-friendly with its detailed reports and help compared to other similar software available in the market"

Mitul Patel, Engineer
L&T Chiyoda

PRODUCT INDEX

Intergraph PV Elite®

INDUSTRIES SERVED

- Chemical & Petrochemical
- Refineries & Fertilizers



Intergraph CAS

12777 Jones Road, Suite 480
Houston, TX 77070 USA
Phone: +1 281-890-4566 • Fax: +1 281-890-3301
E-mail: sales.icas@intergraph.com
Web: www.coade.com

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