Engineers India Limited, India

Key Facts

Company: Engineers India Ltd.

Website: www.engineersindia.com

Industry: Petrochemical

Country: India

Products Used:

- PV Elite®

Engineers India Limited Succeeds with PV Elite on Coalescer Design

Established in 1965, Engineers India Ltd. (EIL) is a leading provider of design, engineering, procurement and construction services in the oil and gas and petrochemical industries.

Bharat Petroleum Corporation Limited (BPCL) selected EIL to provide mechanical engineering of the tail gas coalescer for the Sulfur Recovery Unit (SRU) at its Kochi, India facility. The coalescer separates sulphur from tail gas to prevent its discharge, something that is severely restricted by environmental regulations. The equipment requires constant heating using internal and external steam coils to avoid choking by sulphur which could lead to a costly shutdown of the SRU.

Evaluating Support Options with PV Elite

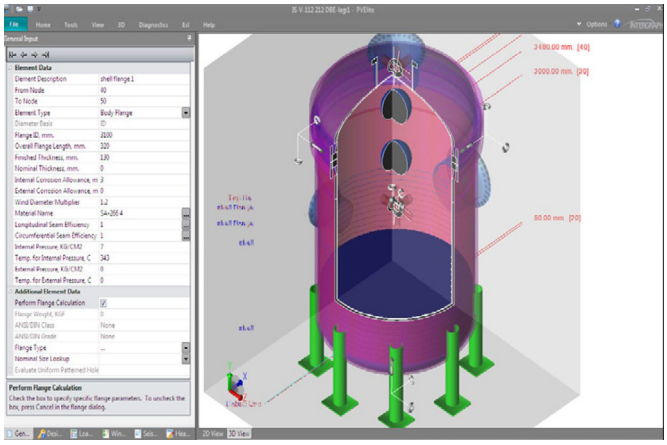
Process specifications typically start after the design of long lead items, and PV Elite proved vital throughout the project. Due to the size and weight and the requirement of the steam coil both inside and outside the vessel, the initial choice of support was skirt.

However, after the PV Elite model design, the company's piping department determined that the skirt was not viable due to the space constraints. A second natural choice would be brackets, but the evaluation indicated that would result in less area coverage for the steam coil, causing them to lose their primary purpose.

Designing a Solution Beyond Governing Standards

Out of the options, they determined to support 62.4 MT of weight on pipe legs for both the process and piping requirements. This rare design involved eight legs of 250 nominal bore (NB) 120 schedule pipe and a base plate with four bolts instead of the standard two bolts, a 124-inch flange design with the leg and base plates above standard.

With the short remaining time, designing this equipment became even more challenging when it was determined that the size of body flange would be 124 inches, a size with no governing standard. The maximum size in the ASME B 16.47 standard was 60 inches and the largest installation to date was only 96 inches. The overall vessel was 4,180 mm long and 3,100 mm in diameter with a fabricated weight of 22 MT and a hydro-test (field) weight of 62.4 MT.



Saving 15% in Material with PV Elite

PV Elite provided wind and seismic design, internal pressure, detailed calculations and all other required deliverables. “Not using PV Elite would have certainly delayed the project schedule,” explained Sourabh Agarwal, senior engineer at EIL, “but more importantly, without the confidence of PV Elite, the equipment would likely have been sent back for reevaluation by either the process or piping department, which would have thrown the entire project into unknown territory and costly delays.”

PV Elite saved EIL 15% in material, plus it provided engineers with confidence to create this type of over-dimensioned equipment because of the software’s simplicity in use, its powerful tools and ease of communication between design and analysis.

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 3.8bn EUR. Learn more at hexagon.com and follow us @HexagonAB.