



RISHABH ENGINEERING, UNITED STATES

Key Facts

Company: Rishabh Engineering

Website: www.rishabheng.org

Industry:

- Oil & Gas - Onshore

Country: United States

Products Used:

- CAESAR II®
- CADWorx®
- Intergraph Smart® 3D
- Isogen®

Key Benefits:

- Completed project under tight schedule and resource constraints
- Performed pipe stress analysis despite space constraints and existing structures
- Reduced modeling time by 75 percent
- Minimized documentation time by 7 percent.
- Cut overall man-hours by 22 percent

RISHABH ANALYZES PIPE STRESS FOR LARGE BROWNFIELD REFINERY PROJECT.

Headquartered in Vadodara, India, Rishabh Engineering (Rishabh) provides engineering services to global engineering, procurement and construction (EPC) companies, engineering contractors, original equipment manufacturers (OEMs), fabricators and surveying companies in the oil and gas, chemical, petrochemical, power, water/waste water and utility industries.

MEET TIGHT SCHEDULE ON BROWNFIELD PROJECT

A major EPC firm selected Rishabh to provide pipe stress analyses for a large Louisiana refinery processing 250,000 barrels per day to produce gasoline, jet-A aviation fuel, low-sulfur diesel, and anode grade coke.

The project's 100 systems included a heavy naphtha stripper hydrocracker unit operating at 120 psig and 600° F, a main fractionator operating at 120 psig and 700° F, the catalytic cracking unit, the alkylation unit, and connected piping systems. The 100,000 feet of piping ranged up to 36 inches in diameter. The project involved 180 pieces of equipment and 52 load case combinations.

The brownfield project faced a tight schedule, resource constraints, and challenges due to space restrictions and existing structures. The contractor also required three major revisions in basic layouts plus frequent changes in specifications. The project required strict adherence to international standards, plus seamless and clear communication with the client.

BENEFITTING FROM AUTOMATED TOOLS & SOFTWARE COMPATIBILITY

Rishabh used CAESAR II with its comprehensive library of major international piping codes and ability to perform quick model revisions if a line fails during the analysis and output of comprehensive isometric drawings. The team used CADWorx to model the stress-critical systems then imported the model files into CAESAR II for



analyses, increasing productivity with this compatibility.

There were multiple piping layout changes and numerous locations involving multiple hot-cold conditions that were addressed with CAESAR II's simple and clear analyses. The system's piping required 50 supports, and the 100 systems required 3,500 supports with about 350 to 400 of them necessitating lift-off considerations, typically requiring a manual analysis process.

CAESAR II's intuitive Alternative Sustained Stress (Alt-SUS) case helped cut the required time by half. The engineers were also able to import the client's Intergraph Smart 3D model into CAESAR II. These compatibilities reduced modeling time by 75 percent.

AUTOMATICALLY GENERATING ISOMETRIC DRAWINGS

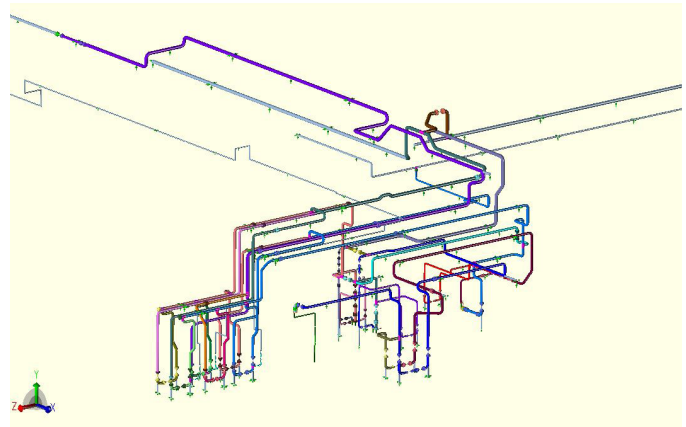
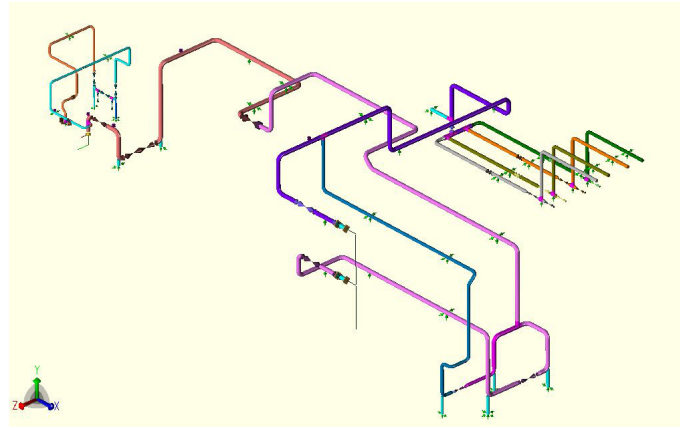
"CAESAR II's built-in Isogen module helped designers extract isometrics and customize them in accordance to the client's templates," explained Arpit Gupta, manager of business acquisition at Rishabh.

The Isogen template also provided issued for construction (IFC) drawings, reducing remodeling time. This in turn significantly reduced documentation time by an estimated 7 percent.

"By using CAESAR II, we reduced overall man-hours by 22 percent from an initial projected 4,880 to 4,000 man-hours," Gupta added.

AWARD-WINNING PROJECT

Rishabh received the 2017 Drivers of Success Runner-Up 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 digital solutions that create Autonomous Connected Ecosystems (ACE). Our industry-specific solutions create smart digital realities that improve productivity and quality across 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 20,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at [hexagon.com](https://www.hexagon.com) and follow us @HexagonAB.