CASE STUDY

EPC creates fast turnaround 3D model for power plant facility on a tight schedule

Key facts:

Company: Rishabh Engineering

Website: www.rishabheng.com

Industry: Power

Region: India

Octave products used: Forte 3DWorx *(CADWorx Plant Professional),* Facets P&IDWorx *(CADWorx P&ID Professional),* Aspect Pipe Stress *(CAESAR II)*

Key benefits:

- Overcame inefficiencies in engineering and modeling
- Reduced modeling work hours by 30%
- Increased overall productivity by 20%
- Recorded better than 95% accuracy enabling better capital planning and a stronger reliability culture

Rishabh Engineering (Rishabh), a division of Rishabh Software, provides multidisciplinary engineering services to the oil and gas, chemical, petrochemical, power, water and wastewater and utility industries. Clients include global engineering, procurement and construction (EPC) companies, detailed engineering contractors, original equipment manufacturers, fabricators and surveying companies.

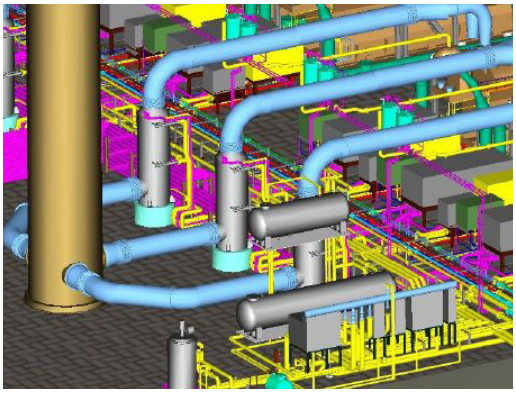
Identifying goals

The United States Agency for International Development (USAID) contracted with the Louis Berger Group/Black & Veatch Joint Venture to build the modern 105 MW Tarakhil Power Plant in Kabul, Afghanistan. It appointed Oilfield Supply Centre as the EPC with Rishabh to provide field engineering and an intelligent 3D model for the entire plant, including piping, equipment, civil and structural.

Covering almost one square mile, the project consists of 18 diesel engine generators of 5.8 MW each housed in three power blocks containing six generators. Each is capable of collectively producing 105 MW of electricity.

Overcoming challenges

"Prior to using Octave's integrated solutions, we often experienced project delays with missed deadlines," said the assistant manager of Business Development at Rishabh.



These added engineering work hours were due to the inherent inefficiencies from the systems being used and caused lost opportunities for the firm and its clients.

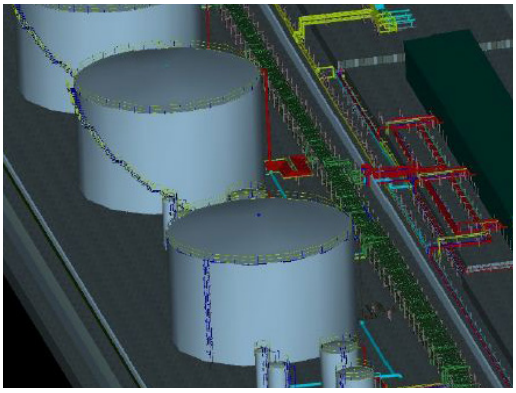
The Tarakhil project was also on a very tight schedule, and there were severe environmental problems at that site that had to be addressed.

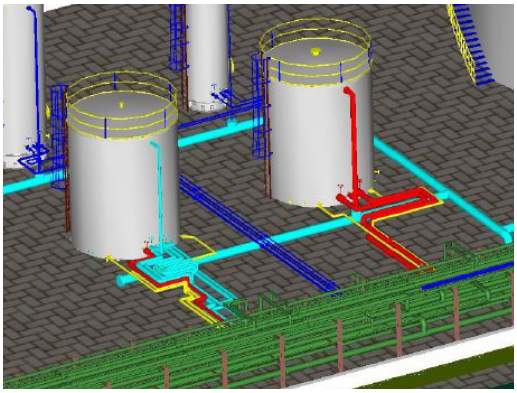
Using Forte 3DWorx and Facets P&IDWorx, Rishabh first completed a site survey of the power plant facility to collect the data required for the piping routing and 3D modeling. Equipment modeling included the diesel engine, generator, thermal boiler, storage tanks and numerous other installations.

Structural modeling covered the engine, radiator, pipe rack, pipe trench, unloading station and loading bay. Rishabh also modeled the complete piping arrangement and physical supports.

"Octave has very reliable software. We can trust Forte 3DWorx to complete our project in the given timeline."

Rishabh Engineering





Realizing results

With these Octave solutions, Rishabh was able to overcome these issues while addressing the project's challenges, greatly reducing schedules while increasing accuracy. The Forte 3DWorx integration with Aspect Pipe Stress for piping analysis enabled interdisciplinary model reviews with the client and made clash detection easy. Rishabh used Forte 3DWorx to automatically extract layouts and piping isometrics, saving considerable time.

"Forte 3DWorx reduced the modeling labor hours by 30%, increasing overall productivity by 20%," said assistant manager.

"We also achieved better than 95% accuracy, extracting bills of material automatically from the model." Forte 3DWorx helped Rishabh to meet the project's tight deadline and delivered a fully satisfied client.

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.