



CASE STUDY

Octave's design and analysis solutions elevate Huahuang Boiler Company to the top tier

Key facts:

Company: Wuxi Huaguang Environment & Energy Group Co., Ltd.

Website: www.wxboiler.com

Industry: Petrochemical

Location: China

Octave products used: Forte 3DWorx (CADWorx), Aspect Pipe Stress (CAESAR II)

Identifying goals

Wuxi Huaguang Environment & Energy Group Co., Ltd. (WHEE), a manufacturer of stand and industrial boilers, boiler machinery and pressure containers, was chosen by the Putian Liquidized Natural Gas (PLNG) Power Plant in the Fujian Province to complete its Heat Recovery Steam Generator (HRSG) boiler project.

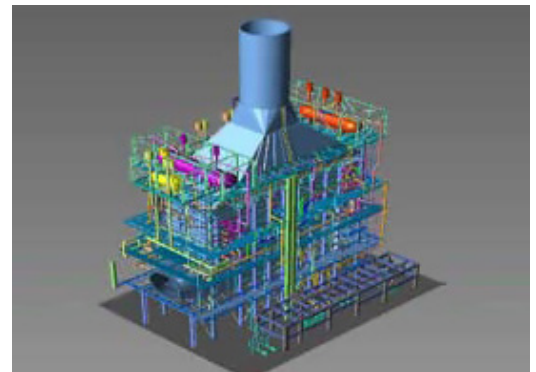
Established in 1958 as Wuxu Boiler Works in Wuxi City in southern China, an area known today as "Little Shanghai," WHEE has grown from an unknown middle-sized company to a nationally recognized company in the manufacturing industry, enjoying an excellent provincial and national reputation in the market. In addition to boilers and related products, WHEE also engineers and designs process systems.

Identifying goals

The PLNG Power Plant, intended to be a major provider of clean electricity to support the economic development of Fujian province, is fueled by re-gasified LNG from Indonesia, imported through the Fujian LNG Receiving Terminal. The HRSG boiler project would be an integral part of the PLNG plant's ability to provide the region with this needed energy.

Overcoming challenges

WHEE had used 2D designs for most of its projects for more than 50 years. After a company-wide decision to move to 3D plant design and having seriously considered all available products on the market, WHEE chose Forte 3DWorx with pipe stress analysis via Aspect Pipe Stress for the design of the HRSG boiler project at the PLNG plant.



When the company started using Forte 3DWorx for 3D plant design, it could see that the design quality and visualization had improved significantly. "We were able to build accurate designs and assemble and model all equipment details including support equipment, steelworks, accessory device and piping," said Gu Quanbin, project engineer at WHEE.

Key benefits:

- Boosted design quality through transitioning from 2D to 3D modeling.
- Reduced fabrication time and cost via automatic generation of isometric drawings.
- Improved analysis efficiency and accuracy by over 50% through enhanced data management.
- Achieved substantial cost savings with a design suite investment only 20% of alternative solutions.

“By leveraging Octave’s design and analysis solutions, we were able to improve efficiency and accuracy by 50 percent.”

Gu Quanbin
Project Engineering,
WHEE



Realizing results

By using Forte 3DWorx in developing a 3D model, WHEE was able to use Isogen to automatically produce isometric drawings and bills of materials for fabrication. This significantly reduced fabrication and erection times as well as material costs, taking WHEE just three days to train its people, two days to prepare data and specification files and a short two months to complete the entire project.

Moving forward

Bidirectional links between Forte 3DWorx and Aspect Pipe Stress for pipe stress analysis allowed for better collaboration. Stress analysis engineers could output Forte 3DWorx pipe models to Aspect Pipe Stress, perform necessary modifications and import these modifications back into the Forte 3DWorx model. The data consistency was maintained through the

whole process. “We enhanced stress analysis efficiency and accuracy by more than 50%,” explained Quanbin. “And, if we compare our investment in the Forte 3DWorx design suite with other industrial software, we found that the cost was only 20% of other applications, so our investment in Forte 3DWorx gave us substantial rewards and no risk whatsoever,” he said.

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.

©2026 Intergraph Corporation and/or its affiliates. All rights reserved.