CASE STUDY

Octave's design and analysis solutions aid METKA in producing accurate models

Key facts:

Company: METKA

Website: www.metka.com

Industry: Power

Country: Greece

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

Key benefits:

- Addressed issues related to the accuracy of piping models
- Leveraged design and analysis tools to overcome international limitations

Headquartered in Athens, Greece, METKA provides engineering, procurement and construction (EPC) for large-scale energy projects across Europe, the Middle East and North Africa. In the energy sector, METKA undertakes turnkey power generation projects and provides operation and maintenance services for power plants of diverse technologies. METKA operates facilities with state-of-the-art machinery and equipment for manufacturing mechanical equipment and complex steel fabrications for the energy, infrastructure and defense sectors.

Public Power Corporation (PPC) awarded METKA a construction project for a new 427-megawatt power plant from the Greek island of Evia. The project was set to create the largest natural gas-powered plant in Greece, with a generator using technology provided by France's Alstom.

Identifying goals

After engaging a firm to develop the design of steam piping and reviewing the design work, METKA uncovered modeling errors that compromised the model's accuracy and made it unusable. Upon further evaluation, it found that the errors were caused by manual entry of data into the beam-based element analysis software. This caused a complete loss of the work-hours spent on the faulty design, which also delayed the project schedule and increased costs. However, METKA had no choice but to start a new design project to undo those errors and produce the required deliverables for the project.

Overcoming challenges

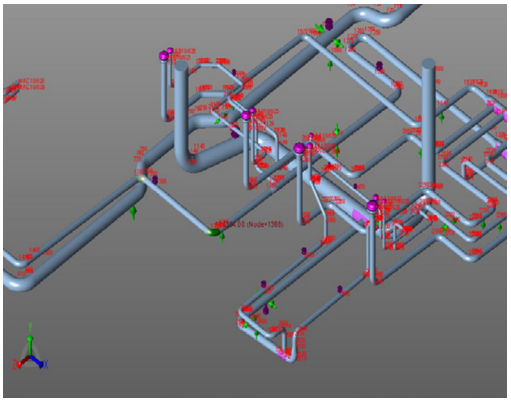
For the new project, METKA could only allocate one engineer for the redesign. Such constraints would normally cause major additional delays, but with the interface between Forte 3DWorx for the design and Aspect Pipe Stress for the engineering analysis, the single engineer had the tools to develop successful stress analysis isometric drawings and full reports in a limited time period to keep the project on schedule. With this level of collaboration, the engineer could conduct the stress analysis at each design stage to ensure an accurate model when done.

"The accurate steam piping analysis provided by the Forte 3DWorx and Aspect Pipe Stress interface allowed us to ensure an absolutely accurate model and to confidently continue this project and move on to the hot commissioning of this combined cycle power plant."

Nikos Pagkratis,
Mechanical Engineer,
METKA

Realizing results

"We performed the analysis using the interface between Forte 3DWorx and Aspect Pipe Stress interface," explained Nikos Pagkratis, mechanical engineer at METKA. The full analysis reports from Aspect Pipe Stress allowed for an accurate transfer of information between the piping and analysis models with easy export of the stress analysis reports to give the turbine and HRSG suppliers for verification. "We first built an accurate model in Forte 3DWorx according to the as-built isometric drawings and then entered the piping into Aspect Pipe Stress to perform the stress analysis," Pagkratis added. "The accurate steam piping analysis provided by the Forte 3DWorx and Aspect Pipe Stress interface allowed us to ensure an absolutely accurate model and to confidently continue this project and move on to the hot commissioning of this combined cycle power plant."



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.

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