



CASE STUDY

Siemens saves 500 hours with Octave Aspect Pipe Stress for aluminum installation in India



Key facts:

Company: Siemens

Website:
www.siemens.com

Industry: Petrochemical

Country: India

Octave products used:
Aspect Pipe Stress
(CAESAR II)

Siemens Group is a global developer and implementer of technology-enabled solutions that support the world's quest for developing modern infrastructure for energy, healthcare and industry. The Siemens Group in India includes 17 companies that employ over 18,000 people and operate 21 manufacturing plants and a wide network of sales and service offices with over 500 channel partners. The Siemens Oil & Gas unit at Vadodara in Gujarat, India, provides medium- and small-scale power plants with turbine, compressors and induced fan solutions. The unit has provided more than 500 turbines for global installations.

Identifying goals

Hindustan Aluminium Company Ltd. (Hindalco), the world's largest aluminum rolling company and the aluminum giant in India, awarded Siemens the Hindalco 1 x 100 MW steam turbine generator Unit #5 project. This project included engineering, supply and installation of the turbine and auxiliary facilities within the turbine generator boundary, with the only exceptions being boiler, civil and structural engineering.

Pipe sizes ranged from 15 to 650 nominal bore (NB) diameters with material ranging from A106Gr.B carbon steel to SA335 P22

alloy steel pipe. Deliverables such as documents and reports included stress isometric drawings, code compliance and stress summaries, load case reports with the restrain summary, a hanger datasheet and bills of material including plot snaps and deflection shape snaps.

Overcoming challenges

Because Siemens had successfully completed four similar scope units using Aspect Pipe Stress, Hindalco had high expectations for the completion and execution of this project. Demonstrated advantages included the effective data transfer and formatting in Aspect Pipe Stress which made it easy for communication and knowledge transfer among all parties involved, which helped eliminate conflicts and disputes.

Despite a tight schedule of 18 months, Siemens was able to match up various milestones, such as final piping layout and piping loads for civil and structural design while also addressing changes prior to finalizing the stress analyses and bills of material, all made possible by Aspect Pipe Stress. The user-defined spring datasheet capability in Aspect Pipe Stress helped minimize rework from site modifications, further expediting the project's schedule for the customer.

Key benefits:

- Streamlined communication and knowledge transfer across all parties, minimizing conflicts and disputes
- Managed tight deadlines effectively and met project schedule
- Saved nearly 500 work-hours by leveraging user-defined supports and stress isometrics
- Realized substantial cost savings of approximately 0.75 million Indian rupees
- Delivered reliable results and comprehensive modeling of site conditions, positioning the solution as a preferred choice in the power industry



Realizing results

Siemens was able to save nearly 500 work-hours by leveraging Aspect Pipe Stress features, such as user-defined supports, stress isometrics and export restrain summaries, plus sharing earlier unit models. This helped save approximately 0.75 million Indian rupees. The project was a major success, and it is now included in Siemens' project portfolio.

"Reliable results, exclusive features of support selection and the capability of modeling all site conditions with Aspect Pipe Stress were critical to this project's success," explained K.G. Brahmbhatt, head of Siemens' project engineering analysis for the facility. "These proven advantages make Aspect Pipe Stress a widely popular and preferred solution within the power industry."



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K.G. Brahmbhatt

Head of Project Engineering Analysis, Siemens

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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