



FACTS AT A GLANCE

Company: SINOPEC Ningbo Engineering Company Limited

Website: www.snec.com

Description: SNEC is an engineering company with its business scope covering areas of scientific research and development, engineering design, manufacturing, construction, and inspection and maintenance services. The main area of focus is on EPC services and project management. SNEC holds its own patents and proprietary technologies, and renders technical and management services in both domestic and international markets.

Employees: 3,200

Industry: Chemical

Country: China

PRODUCTS USED

- SmartPlant® 3D
- SmartPlant Review

KEY BENEFITS

- Automation of engineering deliverables for increased work efficiency
- Ability to identify design conflicts easily to minimize design errors and improve design quality
- Optimized engineering design processes for improved design efficiency and productivity

SMARTPLANT® 3D ENABLES SNEC TO INCREASE ENGINEERING DESIGN QUALITY AND EFFICIENCY OF CHINA'S LARGEST METHANOL PROJECT

Chinese engineering company implements next-generation Intergraph® 3D design solution to support Chongqing natural gas-to-methanol project for enhanced safety, quality, and productivity

IDENTIFYING GOALS

SINOPEC Ningbo Engineering Company Limited (SNEC) was established in 2003 with the merger of the former SINOPEC Lanzhou Design Institute and the former The Third Construction Company of SINOPEC, which was approved by SNEC's parent company, SINOPEC Group. Today, SNEC is an all-round engineering company, providing engineering, procurement, and construction (EPC) solutions, as well as project management services. It has rich project management experience, completing the engineering design and/or construction of over 1,000 plants.

SNEC is one of the EPCs involved in the Chongqing natural gas-to-methanol plant, China's largest methanol project. It is responsible for the engineering design of this large-scale and complex chemical plant, including multiple process units. SNEC required a comprehensive engineering design solution with advanced technology to tackle such a challenging project.

OVERCOMING CHALLENGES

- Improve engineering design efficiency and productivity
- Enhance quality and accuracy of engineering design
- Automate generation of large volume of project deliverables
- Accelerate project schedules and reduce operating costs

REALIZING RESULTS

SNEC selected Intergraph® SmartPlant® Enterprise solutions, including the world's most advanced 3D plant design solution, SmartPlant 3D, for this high-profile project. Intergraph's SmartPlant 3D is recognized as the leading 3D engineering design solution in the market, used by global industry leaders. It is proven technology and can handle even the most complex tasks quickly and easily. This was a critical factor for SNEC's selection of SmartPlant 3D as there are about 350,000 objects to be included in the 3D model for this major project, including 138 sets of equipment and a 40-kilometer pipeline.

SmartPlant 3D is the world's first and only next-generation 3D plant design, employing a breakthrough engineering approach that is focused on rules, relationships, and automation. It provides all the capabilities SNEC needs to design a plant, and then keep it as-built throughout its life cycle. This innovative Intergraph solution captures new and existing engineering knowledge so that it can be saved and reused in the future, which is the key to success in today's competitive global economy. SmartPlant 3D is the most advanced and productive 3D plant design solution that effectively enables optimized design for increased safety, quality, and productivity, while shortening project schedules. Companies using SmartPlant 3D, including SNEC, typically report a 30 percent improvement in overall engineering design productivity.

SmartPlant 3D has a user-friendly interface with simple operation commands, so it was easy to train SNEC's engineers to use the software, halving the usual amount of time required for such training. SmartPlant 3D's automation capabilities also help to greatly improve design efficiency by optimizing engineering design processes and shortening the design cycle. Engineers could automatically generate engineering deliverables, such as pipeline isometric maps and material tables, delivering both cost and time savings.

SmartPlant 3D features unique, rule-driven technology, enabling SNEC to deliver high-quality engineering design for this major methanol project. Using rules and relationships established in SmartPlant 3D, engineers could easily perform collision checks of components within the 3D model, such as piping, equipment, cable tray, and others, and make any modifications or improvements as required. Accuracy and design quality is greatly enhanced, which improves the safety and productivity of the plant.

MOVING FORWARD

The implementation of SmartPlant 3D for the Chongqing methanol project has been a great success for SNEC. The Chinese engineering company plans to further extend the use of SmartPlant 3D for other projects.

In addition, SNEC will expand its use of Intergraph technology and adopt other solutions from the SmartPlant Enterprise suite, including SmartPlant Foundation, SmartPlant Instrumentation, SmartPlant P&ID, and others. This is aligned with SNEC's vision to implement an integrated engineering environment for the whole plant life cycle to drive its EPC business.

ABOUT INTERGRAPH

Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph's industry-specific software to organize vast amounts of data to make processes and infrastructure better, safer, and smarter. The company's software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world.

Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation, and data management of plants, ships, and

offshore facilities. Intergraph SG&I provides geospatially powered solutions, including ERDAS technologies, to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is a wholly owned subsidiary of Intergraph Corporation for the SG&I U.S. federal business.

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