DASSAULT SYSTEMES

3DEXPERIENCE®

ENERGY, PROCESS & UTILITIES

SAFE PLANT ENGINEERING

INDUSTRY SOLUTION EXPERIENCE

ACHIEVING SAFETY, COMPLIANCE, AND PERFORMANCE WITH "NO DEFECT" PLANT ENGINEERING

"No defect" plant engineering means that your plant design and the finished facility meet all project requirements. These large projects involve highly complex multidisciplinary engineering, procurement, and construction. They must conform to stringent regulatory, environmental, and compliance standards on both local and global levels, while meeting initial project expectations and final operational performance. Dassault Systèmes **Safe Plant Engineering Industry Solution Experience**, based on the **3D**EXPERIENCE® platform, enables organizations to create better project control, minimize risks, and reduce development costs through optimal execution of project development processes.

Moving towards "no defect" plant engineering

Engineering, procurement, and construction companies and owner-operator engineering departments must work to achieve expected levels of operating performance for complex facilities while meeting high safety and environmental standards. Any break in collaboration between all the engineering disciplines during construction often leads to inconsistencies and costly project delays. Dassault Systèmes **Safe Plant Engineering** helps achieve performance, reliability, and safety while reducing development delays and costs.

Managing conformity to meet initial expectations

"No defect" plant engineering means that the design fulfills all project requirements. Unfortunately, information is not always properly captured during all plant lifecycle stages, leading to lack of traceability, loss of data integrity, and difficulty in utilizing knowledge. **Safe Plant Engineering** can help manage multidisciplinary engineering data in an integrated way, from requirement definition to physical design through functional and logical process definition. Cross-linking these different engineering elements enables better impact analysis during modification and increased overall quality.

Virtual testing of plant safety and performance

In addition to meeting initial requirements, the plant must operate reliably and safely. **Safe Plant Engineering** advanced simulations enable companies to accurately model complex real-world behaviors, such as strength and deformation in large structures, pipes, and equipment; and the impact of thermal loads, vibrations, fractures, and failures. Complex scenarios can be tested virtually with systems modeling and simulation tools.

Ensuring physical consistency between all engineering disciplines

"No defect" means perfect fitting of physical designs to efficiently install, erect, and construct the actual plant with all its components, systems, and structures. Civil engineering, steel structures, piping, and cabling are often designed using multiple 3D design tools. **Safe Plant Engineering** offers integration capabilities that enable you to gather designs from different sources and build a comprehensive virtual plant model. With this synthesis platform, you can perform 3D design validation—including clash analysis and safety distance—eliminating numerous potential sources of costly errors.

Ensuring engineering data integrity among allproject stakeholders

Safe Plant Engineering, based on the **3D**EXPERIENCE platform, provides a structured data environment with lifecycle-controlled repositories, as well as a social collaboration platform for exchanging information. Configuration management capabilities provide full control over data, ensuring easy retrieval of the right version of a document and preserving information integrity. This is especially important in a multi-contract context where all physical interfaces have to be carefully managed.

INDUSTRY PROCESS EXPERIENCES

The following processes are part of the Dassault Systèmes **Safe Plant Engineering** Industry Solution Experience:

- Requirements-driven Project Management & Monitoring
- Plant Systems 3D Design & Civil Engineering
- Multidisciplinary Design Data Integration & Visualization
- Plant Systems Engineering
- Multiphysics Simulation & Test Lifecycle Management
- Plant Lifecycle & Configuration Management

Our **3D**EXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3D**EXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 190,000 customers of all sizes in all industries in more than 140 countries. For more information, visit **www.3ds.com**.

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