CASE STUDY: HEIDE REFINERY, GERMANY

FACTS AT A GLANCE

Company: Raffinerie Heide

Website: www.heiderefinery.com

Description: Raffinerie Heide produces classic mineral oil products such as all grades of petrol, diesel fuel and aviation fuel. Furthermore, it produces light heating oil as well as important basic substances for the chemical industry. Raffinerie Heide has a capacity of 4.5 million tons of crude into end products and into semi-finished substances for the chemical industry, among others.

Employees: 570

Industry: Petrochemical

Country: Germany

PRODUCTS USED

- SmartPlant Electrical Detailed

KEY BENEFITS

- 20 percent reduction of archives and documents
- Highly efficient support of electrical engineering workflows
- Quality increase in the documentation itself to fulfill 100% authority requirements and safety needs
- Transparency of projects design can be checked and verified any time

THE MASTER SWITCH OF RAFFINERIE HEIDE'S ELECTRICAL ENGINEERING SYSTEMS

SmartPlant Electrical Detailed® provides an efficient and integrated way to support electrical workflows, increasing safety and reliability

IDENTIFYING GOALS

Raffinerie Heide is located 60 miles north of Hamburg, Germany. It has the capacity to process nearly 4.5 million tonnes of crude per year. The refinery produces conventional petroleum products such as gasoline, diesel or aviation fuel. It also produces heating oil and important raw materials for the chemical industry.

The refinery suffered the effects of its aged installations and methods. The refinery employed a non-homogenous information handling and document archiving structure, which included eight different systems and more than three archives. In addition, non-transparent handing over of project documentation posed increasing difficulties in daily operations.

The refinery needed to modernize its document and data handling systems in order to increase efficiency and profitability and to ensure consistent change management in the daily maintenance and business operations of the plant. Accurate information needed to be made available faster. In 1996, Raffinerie Heide found a solution to its needs in SIGRAPH CAE, now called Intergraph "SmartPlant Electrical Detailed". During the last 15 years, continuous improvements in the asset infrastructure were performed and the tool was upgraded to handle new developments and the increasing capacity of the plant in an efficient manner.

OVERCOMING CHALLENGES

During the implementation of SmartPlnat Electrical Detailed, multiple information and documentation storages and archives had to be removed and transferred. The transfer of large amounts of data was very time consuming, as it was training the refinery staff on the new tool. All of this was done while the plant continued its daily operations, while trying to cause as little disruption as possible.

The refinery has now changed the workflow in electrical engineering. This was particularly important to be able to refer to consistent data for major maintenance, for day-to-day maintenance and for the entire project. The integrated and centralized way to deal with all the electrical and automation system environments, the Web-based data handling and a more efficient data management, helps Raffinerie

Heide to increase data quality and to achieve greater efficiency in decision making.

As an early adopter and a development partner, Raffinerie Heide began early on with SPEL D to improve reliability and to ease maintenance of electrical systems. Today the refinery is one of the oldest, though most modern, refineries in Europe.

REALIZING RESULTS

“The main benefit of introducing SPEL D in the refinery electrical engineering system is the central data storage, which makes all data centrally available for third party systems – as for example SAP. Due to the high consistency and quality of the data decision processes are optimized and the facility efficiency has improved drastically”, said Joachim Kaeding, who has been responsible for modernizing the electrical engineering infrastructure over the last 14 years. The refinery could reduce by 20 percent the number of documents and archives.

Coordination with contractors has also improved. The major EPC and contractor is the local company ISS. The flexibility of the system provides the possibility to support the different engineering steps, as well as the need of different projects. First the reuse of design on different levels is very effective, e. g., copying projects or documents. Furthermore, the levels of building up templates, assemblies like macros and symbols as part of standardized workflow steps makes life easier.

Other noticeable and celebrated benefits include:

• Up-to-date archive and data deliverables through the whole electrical environment with reliable information at any time

• SPEL D database that can be handed over in DVD / CD, as well as paper copies, reflecting current-state plant environment and ready to use

• Less paper and high quality based on data in SPEL D, reduce handing-over time to a minimum

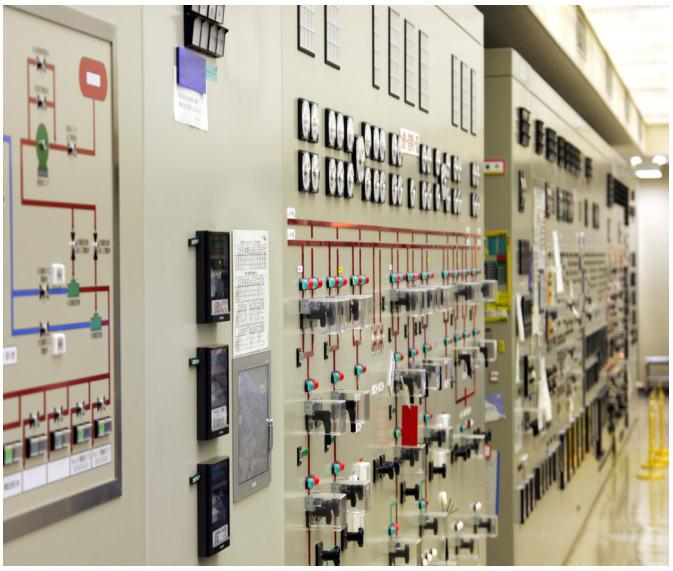
The refinery enjoys consistent change management in daily maintenance. Projects need to have reliable basis for studies and calculations during all project phases, including handing over from contractors to maintenance teams.

MOVING FORWARD

This major step to a data centric solution has made a difference in the refinery performance, providing essential improvements that would not be achieved otherwise.

The focus has now shift to maintaining and viewing the data and deliverables more efficiently, as well as providing more appropriate user interfaces to different user groups, such as maintenance, workshop, basic engineering, among others. That translates now into the refinery having the capability to get a more hands-on and user specific plant environment available.

Further customised integration is being developed, with most resources addressing increased automated information exchanged with SAP systems and others, and optimied data centric approaches expanding across a wider range of plant operation, not only in the E&I-environment.



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