



ORLEN Projekt Steps up Productivity

Upgrading from PDS® to SmartPlant 3D and new solutions yields productivity gains for Poland-based engineering firm

■ By **Wieslaw Gontarek**

ORLEN Projekt SA is one of the largest and most experienced design companies in Poland. The nearly 40-year-old company specializes in plant design for the refinery, petrochemical and chemical industries and has successfully used Intergraph engineering software for a decade.

The company constantly seeks ways to stay competitive and improve productivity to meet customers' evolving needs. Among the new business and engineering challenges that prompted us to look for new solutions are:

- Growing complexity of large-scale EPC projects
- Tighter deadlines to complete projects
- Difficulty in recruiting new engineering personnel
- Continuing client demands for high quality.

Based on our past success using Intergraph solutions such as PDS®, we decided to extend our relationship with the company. Intergraph offers a comprehensive solutions suite, SmartPlant Enterprise, covering the entire EPC process.

"Our experience with Intergraph gave us the confidence to implement the system while working on a live project," said Włodzimierz Garwacki, technical director at ORLEN Projekt.

According to recent Process Engineering Tools research by ARC Advisory Group, Intergraph ranks first for the chemical and refining industries and also leads in engineering design for the chemical and refining industries.

Saving time and money

SmartPlant Enterprise delivers significant time and cost savings for large EPC projects with reduced timeframes. In addition, new engineering staff members and existing engineers and operators can easily learn how to use the SmartPlant Enterprise solutions suite.

For our pilot EPC project, the Claus sulfur recovery unit, we used a variety of Intergraph SmartPlant Enterprise solutions:

- SmartPlant Instrumentation – Automation
- SmartPlant P&ID – Technology and process
- SmartPlant 3D – Construction, mechanical (pipelines, equipment)
- SmartPlant Electrical
- SmartPlant Reference Data

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Włodzimierz Garwacki
Technical Director, ORLEN Projekt

- SmartPlant Foundation – enterprise engineering data management.

Going live

Intergraph implemented the SmartPlant Enterprise solution with support from ORLEN Projekt's IT department. After less than three months of training, our engineers learned how to use SmartPlant 3D, the next-generation, data-centric successor to PDS, and SmartPlant Electrical. We then implemented the solutions on an active project.

“Each group entered the design process immediately after training, giving operators the opportunity to put what they had learned into practice,” said Lukasz Cieplucha, application engineer in the IT department at ORLEN Projekt. “We expect to be ready for complete production within six months. In addition, we are using Intergraph's support services to design and match the project environment.”

To meet ORLEN Projekt requirements, SmartPlant Enterprise tool customization included creating:

- 14 material classes together with “special” elements for piping
- Report templates
- Technical isometric drawings
- Orthographic boards.

Immediately after configuring the environment, a new EPC project was started for the Claus sulfur recovery unit. The project is 40 percent complete. The company is using the following applications:

- SmartPlant P&ID – 15 executed schemes
- SmartPlant Instrumentation – 900 instruments, 256 loops
- SmartPlant 3D – 65,000 objects, including approximately 150 pipelines.

Accessible data

In the project's current stage, SmartPlant Enterprise environment data are processed by ORLEN Projekt branch offices. The owner can access data as part of the project review. In the future, we plan to use the data during the procurement process and for construction. We can also offer high-quality data for owner operators. We plan to integrate SmartPlant Enterprise with our third-party systems as well.

There are five SmartPlant P&ID users, four SmartPlant Instrumentation users, 10 SmartPlant 3D users and three administrators.

Information system implementation can challenge any company, but it can also deliver real benefits during project execution. From our experience, we would recommend a similar configuration, which we believe is the key to company success.

Faster design

The SmartPlant Enterprise implementation helped us complete the project and meet the schedule requirements of our client.

“After just a few months working with the project, we realized the system helps us speed the design process by approximately 30 percent using new 2D and 3D design tools,” said Garwacki. “We can also improve productivity by 20 percent utilizing the tools to integrate design tasks and control the documentation of design data exchange.”

Implementing a single integrated environment across all disciplines increases project quality. It also makes it easier to manage necessary changes during the later phases of a facility's life cycle.

About ORLEN Projekt SA

ORLEN Projekt SA specializes in technical projects for technologically advanced producers and infrastructure and in technical consulting for refinery, petrochemical and chemical industries. The company offers support at any stage of an investment, from concept and design through delivery chain, execution and startup.

ORLEN Projekt traces its roots back nearly 40 years. Mazowieckie Zakłady Rafinerijno-Petrochemiczne (now PKN Orlen) founded Zakładowe Biuro Projektów ZBP (Factory Project Office) in 1972. The company was renamed ORLEN Projekt in 2001. PKN Orlen holds a 51 percent stake in ORLEN Projekt, with the remaining 49 percent owned by employees or individual shareholders.

Over the years, ORLEN Projekt has executed a large number of projects for many customers in Poland and around the world. In 2007, the company executed 157 design projects (three of which were EPC projects) for 30 customers.

ORLEN Projekt employs 180 people, with 75 percent focused on design activities. The company strives to provide excellence in design and meet various global standards and governmental requirements, including ISO 9001:2000 standards. ORLEN Projekt can handle the most complicated projects, and partners with its customers for success.

Wiesław Gontarek is the CEO of ORLEN Projekt SA and is based in Plock, Poland.

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