



FACTS AT A GLANCE

Company: IMR Hamburg GmbH

Website: www.imr-hamburg.com

Description: IMR Hamburg specializes in the supply of pipelines for power stations and industrial facilities in Germany and Europe. It provides construction and maintenance of industrial piping, equipment erection, and materials logistics solutions for power plants and process industries. IMR Hamburg is particularly well-known in the high-pressure area, processing all kinds of materials from high-alloyed metals to plastics, and produces pipelines in a broad range of sizes and specifications.

Industry: Power

Country: Germany

PRODUCTS USED

- SmartPlant® Spoolgen® Plus

KEY BENEFITS

- Elimination of inefficient manual work practices
- Accelerated execution of piping projects for reduced costs
- Efficient revision handling
- On-demand progress reporting
- Complete material and weld traceability
- Compliance with project engineering and quality assurance standards (European PED 97/23/EC)
- Automated production of as-built piping isometrics, welding, and final quality assurance documentation

IMR HAMBURG USES SMARTPLANT® SPOOLGEN® PLUS TO BOOST PRODUCTIVITY FOR POWER PROJECTS

Intergraph® piping technology delivers cost savings and high-quality documentation handover to power plant construction projects

IDENTIFYING GOALS

IMR Hamburg GmbH (IMR Hamburg) specializes in the construction of high-specification, high-pressure pipelines for power stations and industrial facilities across Germany and Europe. Its unwavering commitment to quality and customer service has helped the company to win several major power piping contracts, involving the fabrication and erection of thousands of pipelines at various sites across Europe.

With more complex project scopes to satisfy, increasing numbers of pipe spools to manufacture and erect, and significantly more welds to test and certify, it was becoming increasingly challenging to deliver such large-scale projects on schedule and within budget. As such, IMR Hamburg decided to re-evaluate its existing business processes and improve its working methods.

IMR Hamburg had previously been operating an entirely paper-based work process on site. For example, to manage materials, track welds, and report progress, various spreadsheets were used. To produce final as-built handover documentation, design isometrics received from the engineering contractor that were subsequently marked up in the field were re-drafted in 2D CAD, with each sheet taking up to four hours to complete.

Such traditional methods were not only manually intensive, but also extremely time-consuming, expensive, and error-prone. IMR Hamburg determined that it needed to leverage intelligent technology to improve its efficiency and productivity.

OVERCOMING CHALLENGES

- Reduce dependency on paper as the primary communication medium
- Eliminate time-consuming and expensive manual CAD drafting
- Enhance management of design revisions for improved quality and accuracy
- Improve productivity for enhanced competitiveness

REALIZING RESULTS

IMR Hamburg sought a software solution that was capable of receiving electronic piping design data output by its clients' design systems, as well as allow it to work

efficiently with design isometrics. After an extensive evaluation of the available solutions, IMR Hamburg decided to implement Intergraph® SmartPlant® Spoolgen® Plus (SmartPlant Isometrics, Spoolgen-Piping, and Spoolgen-Welding), which is powered by ISOGEN®.

SmartPlant Spoolgen Plus receives electronic piping data in IDF or PCF format from upstream design systems, such as Intergraph's SmartPlant 3D and PDS® (used by IMR Hamburg's clients), as well as all major third-party 3D design systems that use ISOGEN. Isometrics for construction (IFC) are automatically produced by these 3D design systems using ISOGEN, making SmartPlant Spoolgen Plus the perfect fit.

"Using SmartPlant Spoolgen Plus, we are able to work with our client design information and manage all piping data centrally in a database," said Andre Koehsel, head of quality assurance (QA) and welding technology at IMR Hamburg. "With the user-friendly tools provided in SmartPlant Spoolgen Plus, we are able to create documentation that is more accurate and of better quality. This is all done much faster and more easily than we could before."

The implementation of SmartPlant Spoolgen Plus has delivered great benefits to IMR Hamburg. For each pipeline that the company erects, it is obligated, under contract, to hand over to its client a complete as-built record, including as-built isometrics, welding documentation with non-destructive testing results, radiography films, and final QA certification. The creation of these documents, in accordance with the Pressure and Equipment Directive (PED), used to be a very time-consuming process, particularly for some projects that could have more than 2,000 pipelines. SmartPlant Spoolgen Plus has significantly enhanced this process and increased IMR Hamburg's productivity, helping the whole on-site team (about 50-60 personnel) work more efficiently and cohesively.

Koehsel said, "In the past, for each pipeline we installed, it could take up to one hour to create final certification. It now takes us just a couple of minutes, which is a very impressive man-hour saving for a 2,000-line project!"

Production of as-built isometrics is also very easy now. The IDF received from the client is imported to create an editable sketch, which is then altered in line with the marked-up isometric received from the field. Finally, the as-built isometric is automatically generated via ISOGEN. Compared to traditional 2D CAD drafting, IMR Hamburg is now saving about two to three hours per isometric.

Managing design revisions is also no longer difficult and problematic. With SmartPlant Spoolgen Plus, changes made to the physical pipe design or to the underlying process data received via the line list are detected automatically and can be visualized graphically, helping IMR Hamburg to manage change systematically. This has eliminated manual checking and helped to reduce wastage. It has also minimized disruption to production and the project schedule.

Koehsel said, "When IMR Hamburg hands over the final as-built record to our clients, we have complete trust in the accuracy of the documentation we provide because it was created based on the last revision of the piping data stored in the database."

MOVING FORWARD

SmartPlant Spoolgen Plus has significantly improved IMR Hamburg's operating efficiency, profitability, and competitiveness.

"SmartPlant Spoolgen Plus has delivered an average saving of 10 hours processing time per pipeline," said Koehsel. "IMR Hamburg intends to use SmartPlant Spoolgen Plus as our standard methodology on all piping construction projects we execute in the future."

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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