



SUCCESS STORY

Hydro: Process-optimized casthouse solution inspires management and employees



After only 1 year's project duration, *PSI metals* was commissioned in the Hamburg casthouse of Hydro. The completely new Product Management System (PMS) was designed especially for simple, intuitive management in the casthouse environment, and for optimized process support. For the implementation strategy, the engineering and the implementation of the PMS, Hydro has once again chosen the solutions of its longtime partner 4Production. Thanks to the metal specialists, a high acceptance by the employees, a smooth service replacement and the highest level of efficiency have been achieved. The project received much recognition from all participants.

Since 2006 the Norwegian aluminum group Norsk Hydro has been the sole proprietor of the casthouse of the Hamburg Aluminum Works HAW. In the refinery with a capacity of 170,000 metric tons annually, rolled ingots are manufactured on the basis of aluminum pigs, aluminum scrap and liquid aluminum, which supply amongst others the rolling mill at Hamburg-Finkenwerder.

€ 12 million investment

In order to ensure competitiveness, the exclusively paper-controlled production and the computing system dating back to the 1980's had to be replaced, and integration with the SAP/R3 system of the Hydro network ensured. The original plant layout, designed for handling liquid metal, made substantial refitting and new investments necessary for the melting process. A new two-chamber furnace, an ingot saw and a homogenization furnace had to be integrated.

With their particular expertise in the aluminum industry, the 4Production team created a new concept, which has made possible smooth material control, the gradual replacement of the old system, and the reliable integration of the new investments. The implementation strategy was designed in three stages. It started with the engineering design of the casthouse solution, which includes the creation of the specifications and the adaptation of the development process. Then came the replacement of the existing computer system, with partial shifting of processes to SAP/R3, followed by level 2, the integration/connection of the production process.



Full support from the employees

Energy and environmental efficiency

The integration of the two-chamber furnace, the casting furnace, the fully automatic ingot saw and the homogenization furnace each took place gradually, with level 2 connection to the *PSI metals* system. 4Production was able to offer a solution here which is globally unique in this combination. The casthouse employees demonstrated a great deal of openness and dedication in order to be well prepared for their new system. On February 1, 2009, the time had arrived.



"Never before I had seen such enthusiastic involvement in the introduction of new processes for any project," emphasized the project manager of the Hamburg Aluminum Works, Oliver Trotter. Only six days after startup, the first ingots produced with the new system were delivered to the customers and invoiced.



Acceptance by the employees

Manufacturing and detailed planning are now supported in the casthouse by the PSI *metals* system, which has proven itself in the industry, from goods receipt to metals warehouse through to shipping, seamlessly integrated with SAP R/3, which covers the commercial development.



The highlights

- High acceptance among management and employees
- Transparent, paper-free and correctly sorted inventory and manufacturing information by means of a stacker
- Extremely precise knowledge of the furnace sump and the furnace inserts
- Tool management (e.g. Die-cast-Lifecycle-Mgt.)
- The highest levels of process safety & stability, false batch risk zero
- Efficiency increase (yield, output, inventory)
- Consistent, fast and smooth integration & migration

*4Production AG
4Production, a 100% subsidiary of PSI AG, specializes in the planning and control of metals processes. PSI AG is the most focused metals solution provider globally.*

*Its customers include:
Aleris, Aurubis, Corus, Georgsmarienhütte, Hydro, Novelis, Salzgitter, and ThyssenKrupp.*

*4Production AG
Carlo-Schmid-Str. 12
52146 Würselen
Deutschland
Tel: +49-2405 41350
Fax: +49-2405 413520
info@4production.de
www.4production.de
www.psi.com*

Excavators, wheel loaders and fork-lift trucks are now equipped with weighing systems and mobile computers, so that transports which are relevant for the inventory can be directly weighed and booked via WLAN. The material flows are displayed in previously unachievable quality. *"Now we are really modern,"* an employee in the Hamburg casthouse says of the new PMS. A further highlight is the real time connection of the actual analysis measurement during melting for the optimization of the batch composition and the subsequent alloy.

Thanks to comprehensive measures, the future output can be increased and the inventories significantly decreased.

"High efficiency and process stability make the factory competitive and more environmentally efficient," says Dr. Axel Brand, factory director at Hydro Hamburg.

"The replacement of the old system occurred without a sound and did not interfere with the ongoing production in any way," enthused the commercial factory director at Hydro Hamburg, Stephan Maleaux, about the work of the project team.

Outlook

The solutions of 4Production can do even more, so we are already thinking about the next step. The PMS delivers the current stocks, and knows the planned scrap inflow within one or two days. The proactive control of the composition optimization can use this knowledge to form follow-up charges, and thus achieve significantly lower usage of new material, and at the same time lower scrap stocks at lower costs.

