

Standardized Process Management System for all Blast Furnaces at Salzgitter Flachstahl

With PSImetals, PSI provides standardized solutions for production planning and production management in the metals industry.



Salzgitter Flachstahl GmbH – a Salzgitter AG group company – produces hot-strip, strip and coated products at its integrated Salzgitter metallurgical works. The product portfolio covers a wide range of high-quality steel materials with the tightest of tolerances in terms of mechanical characteristics and dimensions.

At its Salzgitter facility, Salzgitter Flachstahl GmbH operates the three blast furnaces with an annual output of more than four million tons of pig iron.

The Task

PSI was asked to install a uniform level 2 system for all the blast furnaces. The system was introduced to replace the former, obsolete system while the refractory lining of furnaces A and B were replaced and furnace C commissioned.

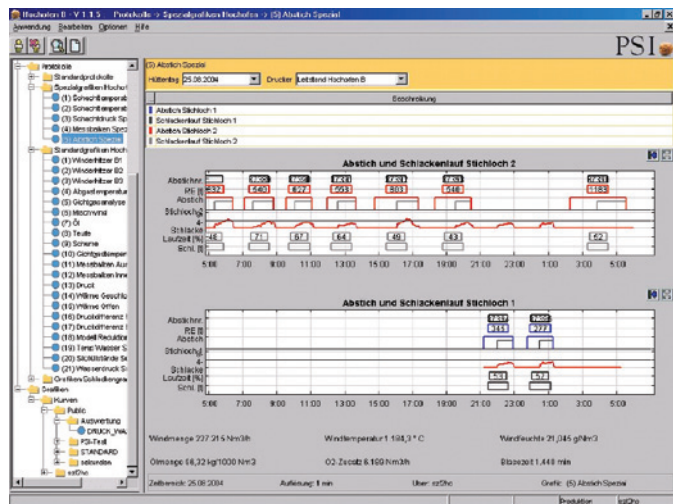
The Aims

- Process-data-driven production control supported by automated burden calculation and model algorithms for furnace control.

- Documentation of a furnace campaign (approx. 15 years) in the form of process data, e. g. for the controlled tracking of the hearth temperature.
- Assured automated production control thanks to the software's high availability level (100%): 24 hours a day, 365 days a year.
- Evaluation of the process and production on the basis of online furnace characteristics yet to be generated.
- Use of uniform plant software for technically different blast furnaces to reduce administrative requirements.

The Result

PSImetals is used to control the processes of all three blast furnaces. Pig-iron and slag analyses are imported via the integrated laboratory analysis system and are used as direct process control parameters. The integrated burden calculation automatically controls the supply of raw material to the furnace. Process control setpoints



(temperatures, reduction characteristics, fuel-consumption figures) are recalculated on an ongoing basis and serve as furnace control inputs.

In order to plan and control the power supply to the metallurgical works, the energy-management system receives up-to-date process values at one-second intervals.

Despite different underlying calculations, the integrated reporting system generates comparable reports and logs for all three furnaces and provides comprehensive process control documentation.

The Benefits

- Flexible integration of new measuring equipment via simple parameterization.
- Integration into steelworks planning.
- Integrated burden monitoring.
- Automatic entry of data-field defaults. The process data captured reduced the number of entries by manual operators, thus improving data quality.
- Evaluations and characteristics can be compiled and visualized in any customized configuration. This increases the informative value of data.
- The online report generation tool enables a quick response to problems.
- The high degree of parameterizability of PSImetals significantly reduces the amount of maintenance required in the control of blast furnaces that differ in terms of construction and signals.
- Redundant data storage and the design as a hot-standby system ensure the system's data security and system availability.

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