Smart Leakage Detector

Reliable, accurate and easy detection of all water leakages at the EAF

Principles.

- Water leakage detection is an important safety topic, because cooling water infiltration in the EAF can cause catastrophic explosion.
- Small water leakages at the EAF are particularly dangerous; they can neither be detected visually in an easy way nor detected by conventional systems.
- The BSE Smart Leakage Detector is able to detect small water leakages [at Badische Stahlwerke down to 1.5 m³/h, 25 l/min] on a consistent basis and without maintenance.

Concept.

- Usage of high-precision flow meters measuring the cooling water in- and outlet line of the EAF shell and/or roof.
- Online analysing algorithm permanently controlling the cooling system.
- In case of a detected leakage sending of a signal to the furnace PLC and generating an alarm to the operator.
- Different alarms for various predefined leakage size.
- Database and trending tool for delay analysis and prevention.

Advantages.

- Reliable detection of small but dangerous water leakages (below the actual measurement accuracy of the flow meters).
- Integration into HMI system enables warning to the operator or forcing the EAF to stop.
- Early warning giving the operator a scope of actions to avoid catastrophic explosion and saving delay times.
- Increased safety and reduced risk of equipment damage.
- Very high availability.
- Improved delay analysis and process understanding.

Smart Leakage Detector (red graph) indicating a small water leakage, invisible with conventional flow meter signal (blue graph).

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From Steelmaker to Steelmaker
Since 1983, the Badische Stahl-Engineering GmbH (BSE) has been acting as a service provider for increasing the efficiency and productivity in the electric steel industry worldwide.

BSE is a sister company of the Badische Stahlwerke GmbH (BSW), one of the world’s most efficient Electric Arc Furnace steel plants.

This unique partnership between BSW and BSE ensures that all products and services provided by BSE are not just based on mere theory, but on more than 4 decades of own proven operational experience.

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