Coal Pulverizer Protection
CAFS Extinguishing System

Initial Situation

After being pulverized, the ground coal falls into the hot gas flow chamber. There it is dried by means of hot air and consequently blown into the combustion chamber where it is completely burned. In case of a standstill of the plant the flap gate (where the hot air enters) closes and the pulverized coal stays in the hot gas flow chamber. Depending on the size of the pulverizer up to a few tons of dust can settle there. Due to the high temperatures in the chamber and the possible failure of inert gas systems in case of a black-out the coal can ignite on its hot surface. If oxygen is introduced into the system it could also lead to a powder explosion within the pulverizer.

Solution

In order to suppress self-ignition or a powder explosion CAFS (compressed air foam) is fed into the hot gas flow chamber via open ended pipes that are installed around the hot gas flow chamber. CAFS foam mixes with and covers the coal and thereby prevents a reaction with oxygen that could lead to an explosion. Furthermore it decreases the temperature of the coal and the walls of the chamber providing for an increased security against back-burning (none of which can be achieved with an inert gas system).

The system functions completely autonomously — no external energy is needed. Hence the POLY CAFS extinguishing system operates reliably also during a black-out so that the people responsible for the plant can focus their attention on putting the plant back into operation without having to worry about a possible explosion in the coal pulverizers.

Benefits

- Sustainable extinguishing performance thanks to CAFS
- Autonomous operation - system works also during a complete black-out
- Easy installation and retrofitting
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CAFS - Compressed Air Foam System

- Expansion is actively controlled in the CAFS mixing chamber - protected from environmental effects
- Distributed over the entire source of the fire
- Uniformly high foam quality
- Sticks to hot surfaces
- Flames are extinguished more quickly because of oxygen deprivation
- Increased protection against back burning
- Low application rates
- Minimization of water damage
- High throw ranges

Autonomous POLY Extinguishing System

- Tank filled extinguishing agent premix
- Functions completely autonomously
- No motor, no pump, no electricity
- Powered through compressed air
- Activation manually or automatically through a control system
- Extinguishing agent release within seconds
- Frost resistance up to -30°C (-22°F)