



LR460 Radar Level Transmitters solve coal inventory issues at power plant

Coal power is a conventional electricity source that provides a large amount of relatively cost-effective, reliable power. It has become more important as supplies of oil and natural gas are reduced and become even more expensive.

In most coal-fired power plants, coal is crushed into a fine powder and fed into a combustion unit where it is burned. Heat from the burning coal is used to generate steam to spin one or more turbines that generate electricity.

A base-load plant is an energy plant devoted to the production of some or all of a region's continuous energy demand. It produces energy at a constant rate, usually at a lower cost relative to other production facilities available to the energy system.

Situation

A power plant in the upper Midwest United States is home to a coal-fired power plant that makes electricity available for thousands of customers. It is a base-load, coal-fired, electrical power station connected to the power grid via numerous 115KV and 345Kv lines.

Challenge

The coal yard manager at the power plant was having difficulty managing his inventory in the coal

silos. Those silos are used to supply the pulverizers that crush the coal to feed the burners. The level measurement transmitters the plant was using (laser-based distance measuring instruments) were not accurate and frequently displayed erroneous reading of the levels due to the extremely dusty environment within the 120-foot-high silos.

This created problems because the customer did not have confidence in how much coal was actually in the silos. When filling, they were not sure when to stop. The inaccurate level readings were resulting in an increased frequency of overfills and under-fills, which could disrupt their operation.

Solution

The local Siemens representative recommended the Siemens SITRANS LR460 radar level transmitter for the measurements in the silos. To reassure the manager that the instrument would work well in this application, he installed his product demo on one of the silos for several months. The plant manager was convinced by the results of the demonstration and ordered six transmitters to replace the competitive units that had been previously installed.

Before the Siemens representative's recommendation, they had considered installing load cells for the measurement. This would have resulted in a significantly higher investment cost than the Siemens solution.

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The plant supervisor was so pleased with the reliability of the measurement results, he is considering additional Siemens instruments for other applications.

In addition to the level transmitters, the Siemens representative demonstrated and recommended SIMATIC PDM (process device manager) software for remote setup and commissioning of the instruments. This software is a cross-vendor tool for configuration, parameter assignment, commissioning, diagnostics, and maintenance of intelligent field devices and automation components.

Benefits

- **Cost savings**

By switching to the Siemens radar level transmitter, the customer is saving money on repeated maintenance of the older transmitter and downtime due to its erroneous readings.

- **Peace of mind**

The new Siemens radar level transmitter is reliable regardless of the dusty atmosphere in the silo, and provides a dependable signal of the actual level. No more concerns about running out of coal or overfilling the silo.

- **Siemens global network**

Sales and support are available in your neighborhood. Our extensive global coverage means you get sales and support when and where you need it.

About the SITRANS LR460 radar level transmitter

The SITRANS LR460 is a 4-wire, 24 GHz FMCW radar level transmitter with extremely high signal-to-noise ratio and advanced signal processing for continuous monitoring of solids up to 100 m (328 ft). It is ideal for measurement in extremely dusty environments.

SITRANS LR460 instrument provides excellent results. The integral Easy Aimer™ included on the SITRANS LR460 unit allows for easy positioning resulting in optimum measurement on solids. Process Intelligence onboard the SITRANS LR460 transmitter means advanced signal processing is harnessed for reliable operation on both simple and difficult solids applications.

The SITRANS LR460 instrument features a robust enclosure, flange and horn components. It is virtually unaffected by atmospheric or temperature conditions within the vessel. An optional dust cap and/or air purging are available for sticky solids applications.

Safe, on-site local programming is simple using the Intrinsically-Safe handheld programmer, or SIMATIC PDM software can be used for easy remote programming using HART or PROFIBUS PA protocols.



About SIMATIC PDM software

SIMATIC PDM software is one program that can be used to configure a number of field devices by different manufacturers using a single user interface. Process device data can be easily set, changed, checked for plausibility, managed and simulated. In addition, you can monitor selected process values, alarms and status signals of devices online.

The core functions of the software are:

- Setting and changing device parameters
- Comparison of set-point and actual parameter assignment
- Plausibility check on entries
- Simulation
- Diagnostics
- Management
- Commissioning function, e.g. measuring circuit testing of process device data
- Protocol Functions

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