

# Modernization for a stronger competitive advantage

## Large coal-fired power plant minimizes its inventory

### Benefits at a glance

- Costs saving: stock reduction of 68% (from 214 pcs. to 69 pcs.)
- Automation due to modernization of measurement technology
- Simplification of the maintenance
- Simplification of the logistic
- Plant uptime: the operator is getting faster service from the plant maintenance team



Liquiphant (compact vibration point level switch) used for leakage detection and to protect the hydrogen-cooled generator.

**One of the largest coal-fired power plant in Germany contacted Endress+Hauser to support first in the optimization of its inventory (2006-2008), and in a second phase, in the modernization of the plant (2008-2012).**

**Your challenge** The customer had a very large amount of transmitters and electrical devices and wanted to reduce it to a minimum. Devices were coming from different suppliers leading to a large stock of very different instruments types. Optimizing the inventory became the priority for the plant, as well as the need to modernize the control technology dating from the seventies. The customer was facing a massive challenge and needed a reliable partner that was here for the long haul and could support during the different phases of the project that lasted for six years.

**Our solution** Endress+Hauser proposed for the first phase of the project, a list of actions to reduce the types of devices:

- Putting all catalogues from different p/dp-suppliers together, sometimes for transmitters, that are over 30 years old
- Working the information from the catalogue into customers data list
- Listing the alternative Endress+Hauser transmitters
- Priorize the sequence of the scenarios for reducing the types of transmitters
- Using the scenarios with the technical features of Cerabar S / Deltabar S

The evaluation made after running the five different scenarios gave positive figures. A stock reduction of 68% was achieved. The operators were able to solve more problems with a more reduced number of transmitters.

**Results - evaluation after using the scenarios for optimizing the inventory of pressure and differential pressure transmitters used within the coal-fired power plant**

Status	Pressure	Diff.-Pressure	Total
No scenario	108	106	214
Scenario 1	66	77	143
Scenario 2	61	65	126
Scenario 3	46	54	100
Scenario 4	40	45	85
Scenario 5	36	33	69

**Reduction of 68% from 214 pcs. to 69 pcs.**

**Scenario types detail**

**Scenario 1**

- Hazardous area approval: ATEX/FM/CSA/NEPSI/IECEX
- Aluminum-Housing
- Using software for measuring range
- Output 4...20 mA HART
- Gaskets Viton/Buna
- DP with standardized oval flange connection IEC 61518

**Scenario 2**

- All transmitters with the modular display

**Scenario 3**

- All transmitters with HAN7D electrical plug

**Scenario 4**

- Using turn down (app. 10:1)

- No difference between metal or ceramic sensor

**Scenario 5**

- DP: 316L stainless steel instead of steel flanges
- Pressure transmitter with metal diaphragm seal with AlloyC276 membrane material

**Modernization** The second phase of the project covered the modernization of the DCS/PLC system as well as the instrumentation. The customer was receiving a large amount of binary signals due to systems dating from the seventies and old transmitters. By modernizing the equipment, signals became analog instead of binary. As a

direct result, the DCS/ PLC gave more information and in a continuous way to the operator which opened more possibilities for plant and process optimization. Solving emergencies as an example led to plant uptime as the operator was getting faster service from the plant maintenance team.

The whole modernization brought to the power plant a competitive advantage. It helped the plant run its operations in a more efficient and less time consuming way.