

New Control System for RMR's Product Pipeline



Batch tracking is of paramount importance for product pipelines

RMR in Köln operates a complex pipeline system which supplies the western part of Germany with petroleum products such as gas, naphtha, diesel and kerosene.

The pipeline starts at the oil port in Rotterdam, crosses the border to Germany near Venlo and flows south to the BASF plant in Ludwigshafen.

The pipeline is fed by 5 refineries and supplies more than 10 industrial customers (e.g. the Frankfurt International Airport).

The pipeline is 665 km long and has diameters of 24" (600 mm) and 20" (500 mm).

Task

PSI delivered RMR's current process control system in 1989. The positive experience in over 10 years successful operation with this system was a major factor in the customer deciding on ordering the latest version of PSIControl.

Because the pipeline transports products which are flammable and potentially environmentally hazardous, special demands were required of the new control system:

- extremely quick response times for all operating activities,
- switching operations with a single mouse click (cutting of batches),
- long-term archiving of process data,

- statistics for the maintenance and upkeep of system components,
- possibilities of analyzing past operating conditions.

Realisation

The process control system at the Godorf dispatching center was replaced by the latest PSIControl version. The hardware configuration is based on 2 HP Alpha DS20 servers that run in parallel operation.

Five multi-screen workstations and several office PCs are connected to the parallel system for controlling and monitoring the pipeline. A coupled computer with an Oracle databank was implemented to provide access to process data for users from the office network.

The control system is responsible for the following tasks:

- continuous process monitoring and controlling,
- Safety monitoring of the network (pressure difference test, automatic pump shut-off in dangerous operating conditions),
- Leak monitoring; also in transient conditions,
- Leak detection,
- special functions for controlling and following the products (pressure profile, batch tracking, ball tracking, density loupe),
- Supporting of maintenance and upkeep,
- complete archiving of relevant process events,
- reconstruction of past process situations for „Post Mortem Analysis“,
- Training of operators with a training simulator.

Scope of Services

PSI oversaw the entire project including creation of system specifications, realisation, commissioning of the system and training of the operating personnel.

The new PSIControl process control system went into operation in 2002. The monitoring functions were tested and certified by TÜV Rhineland (technical inspection authority).

The new system enabled RMR to take the previous leak detection and location system out of operation.

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