

Refinery Integrates Mobrey Hydrastep with Differential Pressure for Ultimate Reliability

RESULTS

- Combined technology increases reliability of emergency shutdown
- Remote displays provide level monitoring at separate locations throughout the plant
- Fibre optics provide extended cable runs at reduced cost



APPLICATION

Steam drum water level measurement

CUSTOMER

A refinery in West Coast U.S.

CHALLENGE

A West Coast refinery wanted to improve their instrumentation. The plant was already using three Rosemount differential pressure (DP) transmitters on one boiler system. However, they wanted to add a further steam drum level measurement, with displays independent of the DCS. They needed three remote displays throughout their site to monitor the steam drum level from different locations. One such display needed to be in the control room, with over 3,280 feet of cable run from the steam drum. This created challenges in using conventional wiring over such a distance. They also wanted to integrate this additional instrument with the DP transmitters as part of the high level detection and boiler shutdown system.

SOLUTION

An engineer at the refinery had previous experience with using Mobrey Hydrastep at a different plant. The engineer knew that Hydrastep could be used with multiple remote displays, and would also provide a level output which could be monitored for use as a level alarm, and thus would satisfy their requirements.

The Hydrastep was installed with three remote displays located at different points throughout the plant to give a constant indication of the level within the steam drum. For the furthest remote display in the central control room, the plant chose to integrate the Hydrastep's remote display digital communications within their existing fibre optic cabling.

The refinery used three remote displays throughout the plant, all independent of their DCS.



Mobrey Hydrastep water column

REFINING

The use of fibre optic cable enabled the plant to achieve a greater cable distance with negligible signal loss. Consultants provided advice on how to configure the fibre optic transmitters and receivers to achieve reliable communications.

The customer's DCS monitored the outputs from the Hydrastep's 4-20mA and two of the DP transmitters. The DCS then used two out of three voting (2oo3) from the two different technologies to shut down the boiler in the case of a high level condition.

The plant has since ordered an additional Hydrastep system for use on a second steam drum and is considering adding further Hydrasteps to their remaining boiler drums.






Mobrey Hydrastep remote display, separate to the DCS

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