Sugar Refining Plant Achieves Improved Safety and Reliability with Mobrey Hydrastep

RESULTS
• Improved reliability and safety with quadruple redundancy
• Clear instantaneous display of level in the steam drum
• Improved installation ensuring minimal maintenance requirements

APPLICATION
Steam drum level measurement

CUSTOMER
Major sugar refinery, UK

CHALLENGE
Sugar refining processes need both high temperatures and electrical power. As with many industries requiring heat and power, it is common practice to generate both locally within the plant. These plants will have a large boiler generating high temperature and pressure steam which then drives a turbine to create electricity. The exhaust steam is distributed around the plant to provide heat for the sugar refining processes. Sugar refineries are typical cogeneration plants (Combined Heat and Power).

A sugar refining plant in the UK has two large water tube boilers, each with a steam drum. The plant had been using an old system for steam drum level measurement for many years and were aware that the device was no longer supported by the supplier. The plant needed to ensure it could continue to operate safely into the foreseeable future. Instrumentation that could not be maintained presented a considerable risk to operations.

SOLUTION
A sister plant had been using a Mobrey Hydrastep and were very satisfied with its operation. The refinery therefore chose to replace their existing system with the Hydrastep 2468. This gave them the peace of mind of having the latest safety instrumentation, which could be supported by the factory.

Each drum had a Hydrastep system installed on each end - two Hydrastep systems per drum. For the main drum, the plant removed the previous systems and replaced both with the current Hydrastep 2468. For each Hydrastep system, they chose to install the dual redundant controller, therefore giving them quadruple redundancy. They also replaced the water columns to correct previous installation issues, and to be sure of correct installation.

“The system provided the peace of mind of having the latest safety instrumentation which is supported by the factory.”

A typical Mobrey Hydrastep Installation
The remote displays in the control room were also replaced to ensure compatibility. The plant uses the Hydrastep systems for indication and for level alarm trips. The remote level indicators are mounted within the panels in the control room to give a clear instantaneous display of the level within the drum. The relay outputs were configured to give alarms and trip the boiler in the event of a very high or very low water level. On the same drum differential pressure transmitters were used for level control.