
WARRINGTON, UK, NOVEMBER 20, 2003

ABB drive cuts water pumping bill for semiconductor plant

An ABB drive is helping a semiconductor company save energy whilst providing increased capacity on its water ring main pumping system.

The installation of the drive has reduced the duty for the pump to 60 percent during normal conditions and gives the system increased capacity to deal with the higher demand for water of new machinery. There was also a significant energy saving, which will give a payback time of around 16 months.

SEH Europe Ltd., a major manufacturer of semiconductor wafers, was experiencing problems with the pressure in its water ring main, which supplies the whole plant with its water needs. The ring main is approximately 200 m long with tap points along its length for supplying production machinery with water. To maintain pressure when water was being tapped off, the system employed a relief valve to ensure adequate supply at a pressure that was not too great for the pipe work.

Problems occurred when a new machine was installed. Its water demand was so high that it caused a severe pressure drop in the system. The existing pump had the capacity but increasing the system pressure caused extreme turbulence in the delivery lines to machines, so-called water hammer, which was damaging the pipe work.

SEH called in Proshield, a company specialising in water control solutions. They recommended a variable speed drive and contacted ABB Drives Alliance Partner EDC (Scotland) Ltd.

Proshield's Business Development Director, Bob Jarvie, says: "We chose an AC drive from ABB because it is easy to program and has a control algorithm ideally suited to this application."

Proshield installed the drive along with a pressure sensor. Using the control algorithms in the drive, a control system was set up which matches supply to demand according to the signals received from the pressure sensor. The pump control system now took the place of the pressure relief valve in maintaining system pressure under various demand conditions.

The pressure relief valve was set higher to allow a small amount of flow under no demand conditions to ensure that the pump did not overheat. This also protected the system against high-pressure surges.

"We like the ABB drives because we know ABB complies with the latest regulations on EMC" Jarvie concludes.

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in power grids, electrification products, industrial automation and robotics and motion, serving customers in utilities, industry and transport & infrastructure globally. Continuing a history of innovation spanning more than 130 years, ABB today is writing the future of industrial digitalization with two clear value propositions: bringing electricity from any power plant to any plug and automating industries from natural resources to finished products. As title partner in ABB Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 147,000 employees. www.abb.com



Caption: A variable speed drive from ABB has helped a semiconductor manufacturer to save energy as well as increase capacity on its water ring main pumping system.

—
For more information please contact:

Layla Hewitt
Marketing Communications
Phone: 01925 741517
Email: layla.hewitt@gb.abb.com

ABB Ltd.
Daresbury Park
Daresbury
Warrington WA4 4BT

Emma Jenkinson
Armitage Communications
Phone 020 8667 2218
Email: emma.jenkinson@armitage-comms.co.uk