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ABB drives save £30,000 a year for Northern Foods

Food manufacturer Northern Foods is saving over £30,000 a year in electricity costs thanks to the installation of three ABB variable speed drives at its Riverside Bakery in Nottingham.

The plant, which produces chilled pre-prepared foods for customers such as Marks & Spencer and Sainsbury, uses large refrigeration units to store both the ingredients and the finished products. The refrigeration units are fed by cooling water pumped by three 75 kW motors.

Soft-start control panels have been used to control the motors since the plant was built 22 years ago, but as part of a wide-ranging energy saving plan, Northern Foods was keen to find a way to improve the energy efficiency of the pumping system.

Says Northern Foods' engineering manager Vernon Humphries: "We looked at various options from several companies. Inverter Drive Systems here in Nottingham was the only company that could offer a satisfactory turnkey solution. I don't have the engineering staff to tackle this project and Inverter Drive Systems could handle the whole thing, from investigating and justifying the project, to supplying, installing and commissioning."

Inverter Drive Systems, an ABB Drives Alliance partner, conducted a preliminary energy survey of the motors. Once the project had been agreed with Northern Foods, Inverter Drive Systems removed the existing soft-start control panels and supplied three 55kW ABB industrial drives in control panels.

Also supplied by Inverter Drive Systems was a 4-20mA analogue temperature sensor connected to the inverters integral PID controller, which uses the return temperature of the chilled water as its feedback signal. When the plant is working hard, the requirement for chilled water increases and the pumps run faster. When the plant is idling at weekends and holidays, the pumps run at a minimum speed, as the return temperature of the chilled water is already cool.

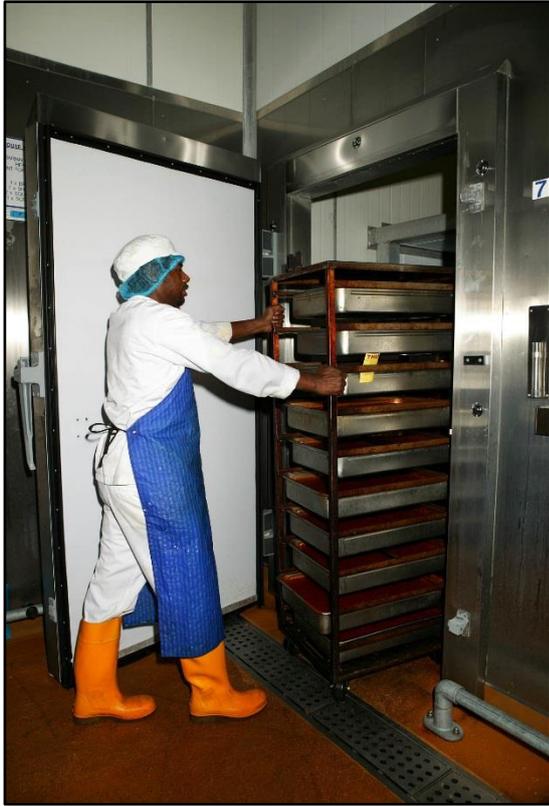
Installing the drives turned out to be a challenge. All the services for the plant, including the chillers, are installed in the roof space, which meant lifting them 6 meters through a hatch in the roof from the production floor. To save space, the inverters are side mounted inside the control panels. The inverters were installed individually which meant no lost production time as two out of three ran at any one time.

Inverter Drive Systems also performed post-installation energy monitoring. Average power reduction was found to be of 65.2% per pump, giving estimated energy cost savings per year of £30,000 with a payback time of 10 months. As well as the energy saving benefits, the system also provides accurate control of the chilled water temperature to the plant.

Says Humphries: "We are very pleased with the ABB drives and they have performed above expectations since installation."

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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: Food manufacturer Northern Foods is saving over £30,000 a year in electricity costs thanks to the installation of three ABB variable speed drives at its Riverside bakery in Nottingham.

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