Green credentials complete for cement works

Two final variable speed drives are being fitted in a cement works in Derbyshire to complete its energy efficiency programme. All major axes within the plant are now speed-controlled, reducing total power consumption by 15 per cent or more.

Lafarge Cement UK’s cement works in the Hope valley, the centre of the Peak District National Park, is fitting Mitsubishi 132kW drives to two fans used for cooling the clinker as it exits the kiln. Previously they were damper controlled, which is to say they ran constantly at top speed, with the air-flow controlled by partially closing the dampers or baffles. The Mitsubishi drives mean that the motors can now have their speeds turned down to provide the exact air-flow required. Energy savings are expected to be significant.

Hope Works has always favoured Mitsubishi drives and uses them on the mill, the rotary kilns, pumps, fans, conveyors, feedwater, apron feeds and all other critical axes. Some of the 140 or more drives in use today are those originally installed up to 20 years ago – a testament to their reliability and robustness. “Reliability is absolutely critical to us,” says Mark. “Stopping a cement plant to replace a part can affect our ability to supply our customers. Some of the drives are still the original Mitsubishi Z series units from the 1980s, which have an expected life of 3 years and are still serviceable today. “Maintenance intervention is limited to annual inspections, monthly filter cleaning and five-yearly replacement of cooling fans. A great advantage for us is that Mitsubishi always maintain backwards compatibility when they launch a new drive, so we can whip out an aging unit and drop in a new one with all the latest features and performance improvement with no great fuss.”

“Another big advantage of the new set up is that we can improve the accuracy of the airflow control loop,” says site engineer Mark Bramley. “The iris damper and actuator proved problematic. Now we can connect the inverters directly to a system controller to optimise the air-flow for maximising heat recovery in our clinker coolers.”

First published in August 2009 by Mitsubishi Electric, based on information provided by Lafarge Cement UK’s cement works, Hope valley.