ABB’s SynRM drives energy savings at GSK

An ABB Synchronous Reluctance (SynRM) motors and drives package, is driving substantial energy savings at one of the pumping stations at GSK’s Port Fairy facility.

A drop in electricity consumption has been recorded at the pump from 148 to 136 amps. Furthermore, a temperature reduction of 25 percent and a 60 percent reduction in noise have also been achieved at the motor.

The challenge

GSK’s high technology facility at Port Fairy is one of the world’s largest producers of thebaine, codeine and morphine – all of which are vital ingredients in the production of many of the world’s pain-relieving medicines. More than 90 percent of the production output at the facility is exported to overseas markets.

GSK has operated in Australia since 1886. The Australian operation consists of facilities in 4 locations, which includes its Australian headquarters and manufacturing facility in Boronia (Victoria), as well as other manufacturing facilities in Ermington (New South Wales), Latrobe (Tasmania) and Port Fairy (Victoria).

In 2011, GSK’s global head office announced that the company would embark on a global scheme to become ‘carbon neutral’ by 2050, and began upgrading its manufacturing sites to help meet this goal.

The company’s Boronia, Victoria facility was the first Australian location to reduce its carbon output, lowering emissions by 9.3 percent in 2013.

Due to its long-standing relationship with ABB, GSK then called upon ABB Australia and ABB Authorised Value Provider, Encompass Integration, to assist its Port Fairy facility to meet its carbon reduction requirements.
The solution

ABB Australia, in partnership with Encompass Integration, provided an Energy Appraisal Assessment for GSK’s Port Fairy site.

Following the consultation, it became evident to Andrew Foster, GSK Australia’s instrument and electrical supervisor, that ABB’s Synchronous Reluctance (SynRM) motor-drive package would serve the dual purpose of contributing to GSK’s energy-saving targets, while also providing the right output to meet the company’s production requirements.

The SynRM package consists of an ABB SynRM induction motor, and an ABB ACS850 variable speed drive, which includes a ‘safe torque off’ feature. In this instance, the ABB motor drives a Nash pump.

According Jason Simpson, ABB Motors national sales & marketing manager, ABB’s SynRM package provides a compelling alternative, where energy savings are of paramount importance.

“ABB’s SynRM solution provides an alternative for variable-speed applications, and is able to address a variety of torque requirements. Our motor-drive packages drive significant reductions in heat and noise, thereby driving efficiencies that result in substantial energy savings and reductions in maintenance costs for our customers,” Simpson explained.

“Two ABB drives have been installed side-by-side, one with the SynRM motor and the other with an existing standard induction motor, thereby allowing a direct comparison to be made,” Simpson said.

The results

Andrew Foster from GSK, said the Port Fairy site needs to reduce its carbon output by 5 percent per year in order to meet the requirements of GSK’s global carbon reduction scheme.

He has recorded a drop in electricity consumption at the pump from 148 to 136 amps since installing the ABB SynRM system. A temperature reduction of 25 percent and a 60 percent reduction in noise have also been achieved at the motor.

“The existing motors were controlled via soft starters, combined with a mechanical flow control arrangement utilising valves. We wanted the ability to vary the speed of the motors, so the SynRM package was chosen as it gave us speed control and the maximum possible energy savings,” Foster explained.

“The motors are connected to large vacuum pumps, known as Nash pumps, which provide vacuum pressure on a large belt that filters product. From an operations point-of-view, the ABB SynRM motors and variable speed drives have been integrated in to our system without any issues.”

For Foster, ABB and Encompass Integration not only helped GSK to go a long way towards meeting carbon reduction targets, but also provided the manufacturer with a long-term solution that could be expanded upon in the future.

“We used Encompass Integration due to their relationship with ABB, and rely on them for procurement of electrical equipment and technical support,” said Foster.

“We are really pleased with the outcome, and are looking to install more ABB SynRM motor and drive packages onsite.”

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