Gaby Copper Mining finds success with new level measurement technology

Gaby Copper Mining’s Gabriela Mistral property is located in the Antofagasta region of northern Chile, at an altitude of 2,660 m (8,727 ft) above sea level. The reserve contains an estimated 562 Mt (620 million st) of oxide ore with an average grade of 0.41 percent total copper. The mine went into production in 2008.

Gaby Copper faced the problem of having no reliable way to measure the solids level. This is a challenge that exists throughout the mining industry, where dust in the air and accumulation of solids on a sensor make accurate measurements difficult in areas such as transfer chutes, the rock box underneath crushers, silos and anywhere else that information is needed on the level of solids.

The next-generation technology in the Sitrans LR560 radar from Siemens addresses this challenge. With a frequency of 78 GHz – higher than previous generations of radar – it provides a more robust signal for measuring in areas where there are high levels of dust accumulation. The Sitrans LR560 provides a signal beam angle of four degrees, significantly narrower than any other product on the market can offer.

Siemens, together with Bermat – the local channel partner for instrumentation – presented the new Sitrans LR560 radar to Gaby Mining Co., which tested the use of this equipment in its mining operations. For the first test, the decision was made to mount the radar level transmitter in the material transfer chutes. This is part of the mining process where material from the crusher drops from the milling area and is then transported by conveyors to the storage area. Gaby had previously installed an ultrasonic level transmitter, but it often encountered problems caused by the dusty process conditions. During periods when the material level on the conveyor belt was low, the sensor became unreliable and reported false errors. This stopped production, resulting in loss of time and increased cost.

After installing the Sitrans LR560, Gaby Copper Mining was able to obtain much better control of its process, preventing the false error reports that led to the material jamming in the discharge chute and production interruption. Gaby Copper Mining was also able to accurately and reliably monitor the charge level of the belt, which helped greatly in ensuring consistent production and provided the plant operators with confidence in the sensing technology.

Based on the results from the trials of the Sitrans LR560, Gaby Copper Mining is planning to explore its use in other applications where they have had difficulty with level measurement in the past. In addition, Siemens Chile now plans to offer the next-generation technology of the Sitrans LR560 to other mining companies in Chile.