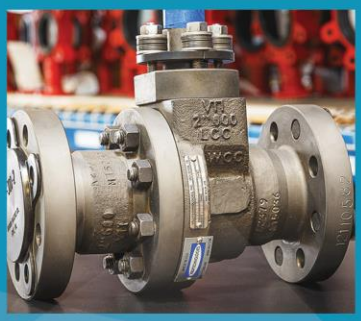
El Teniente Lime Plant Case Study









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The Client

The El Teniente lime plant, located at Codelco's second largest copper mine in Rancagua, Chile.

The Challenge

The El Teniente lime plant presents harsh conditions for isolation valves to operate under. Not only does lime solidify internally it also cakes on every external surface available causing moving parts to seize. The challenge was to provide a valve that could isolate without requiring constant replacement or repairs.

The Problem

Plant supervisor Rene Harrison had seen many knife gate valves used in his twenty years at El Teniente. Clarkson KGD, Valvulas Chile, Remak, Recval, IIT Fabri, Orbinox and Newcon are just a few that were used. These valves worked for about six to eight months before requiring maintenance and repairs. These repairs usually added an additional two to three months to the life of the valve but not before causing loss in production and downtime.

The Clarkson KGD valve used at the El Teniente plant.

The Journey

In 2004 CG Industrial Specialties Ltd. (CGIS) visited the plant and discussed the Guided Shear Gate valve. Although the idea was well received the Rene team was skeptical of its benefits. Rene however took a chance and agreed to try one 10" Guided Shear Gate in the most difficult positions with options selected by CGIS to withstand the harsh conditions.

The Discovery

The valve was installed and quickly showed its superiority. Rene began a campaign of replacing the troublesome knife gates they had been using with the Guided Shear Gate valves. By 2007 Guided Shear Gates occupied nineteen (19) of the key isolation points within the plant.

CGIS President Ross Waters shows how to examine the bonnet and adjust the packing.

The Results

On June 17, 2010 CGIS and its new Chilean distributor Flow Valve Sistemas e Ingenieria visited the El Teniente plant and Rene Harrison. The original Guided Shear Gate installed in 2004 was still working perfectly with no maintenance required for over six years. The remaining eighteen (18) Guided Shear Gates, installed between 2004 and 2007 were functioning normally and had required only minor tightening; no parts or system downtime was required. All valves continued to provide Zero Leakage isolation despite the internal and external cementation and scale precipitation.

Summary

Guided Shear Gates have proved that they can withstand the most severe application as well as internal and external conditions. They have provided Rene Harrison with long term low cost of ownership and the highest isolation performance.

A Note About the Author

As the President of CGIS, Ross Waters has dedicated 35 years of his life to serving and improving the valve industry. Ross started CGIS, a valve distribution company, in 1980 in a small office in Vancouver, Canada. Thirtyfive years later, the business has grown internationally and now serves clients and industries worldwide. Ross is the driving force behind increasing awareness of Severe Service Valves and is part of a MSS task force writing its definition. He has attended numerous conferences around the world presenting his paper, “Defining Severe Service Valves” and is well onto establishing himself as the leading expert in Severe Service. Ross is also an avid member of ASTM International G04 and has served as an expert witness.