

Dust-controlled coal loading from Cleveland Cascades

DCI recently reported 'Cloudy Prospects for the Coal Trade' (see p2 of the February 2016 issue), identifying greater uncertainty about the direction of the global market for coal. A slowing global economy, led by China and a move away from coal for electricity generation, particularly in Europe, were cited as reasons to justify a cautious outlook. Prices for coal, softened in 2015 reaching the lowest level since before the financial crisis of 2008. Nevertheless, despite relatively soft global demand and weak prices, some analysts feel that there is light at the end of the tunnel. The market is said to be at or near the bottom and is unlikely to go any lower. In addition, it should not be forgotten that the global trade in coal remains a vast market, estimated to be 940mt (million tonnes) in 2015, making it one of the biggest sectors in the global dry bulk industry.

Cleveland Cascades loading chutes are particularly well suited to handling coal and the sector has always been a major part of the company's business. The first coal handling chute was delivered to South Africa in 1995 and since then the population of coal handling systems has grown consistently. In 2015 it accounted for approximately 25% of sales and the systems were delivered worldwide to customers in North and South America, Asia, Australia as well as in Europe. The product types delivered last year in to the coal sector also varied widely, including cascade ship loaders, transfer chutes and free-fall vehicle loading chutes.

In addition to the key criteria of loading capacity, coal handling facilities often focus on minimizing dust pollution and preventing both material degradation and material segregation. Environmental health regulation, intended to protect the handling facility and its neighbours, is a growing concern in developing countries as well as the advanced economies. Most applications nowadays have a requirement to effectively control dust emissions during handling. In addition, coal can have a relatively wide range of particle sizes and some handling systems can damage larger pieces and reduce their size.

The Cleveland Cascade chute is specifically designed to address all these key performance criteria for coal handlers. The Cascade solution directs the material flow



Cascade chute shiploading chute.

down a series of inclined cones, which limits the flow velocity to a controlled speed. The shape of the cone holds the dry bulk in such a way that prevents particulate separation and minimizes material degradation. The significantly reduced product velocity creates a 'mass flow'. A stream of material moving as a single mass through the chute and onto a stockpile with minimized segregation. The controlled descent of the material prevents air separating the particles and largely eliminates dust generation at source.

Port Kembla, in Australia operates an 18-metre-long Cascade chute for loading vessels on their quayside. Utilizing a pivoting shuttle boom up to a discharge rate of 890 cubic meters per hour. The cones are lined with 6mm ceramic tiles to

load 1mt per annum of the very abrasive material.

In addition to loading vessels, coal handlers often load the material to stockpile and Cleveland Cascades has built numerous systems over the years for these applications, utilizing both the Cascade controlled flow and conventional free fall technology.

IEC has long experience of operating Cascade chutes in its power generation stockyard. The 17.8m-long system, includes cones lined with 6mm ceramic tiles to handle the highly abrasive material at a loading rate of up to 3,000 tonnes per hour.

A big part of the package provided by Cleveland Cascades is

ongoing product support, from the moment the product is delivered and throughout its operating life. Commissioning engineers can visit site to help install and optimize the operation of the chute according to customer needs, upon delivery. Manuals are comprehensive and detailed to give the operators the information they need to maintain the product and maximize its operational efficiency. On site technical advice, repair and maintenance is also available during the life of the product using factory trained engineers. Cleveland Cascade engineers have extensive international experience maintaining, servicing and optimizing Cleveland Cascade systems all over the world. To complete the support package, original OEM spare parts can be supplied with the original order and subsequently during the life time of the chute.



Cleveland Cascades stockpile chute.