FMBusinessDaily

Weighbridges under water: How Dubai‘s waste incineration plant withstands even extremes

4 months ago

During one of the heaviest rainfalls in the history of the United Arab Emirates, the weighing system of Dubai‘s largest waste incineration plant was under water for 48 hours. But after the flooding, it resumed operations without any damage. Find out how advanced weighing technology makes this plant a pioneer in terms of efficiency and resilience in this Best Practice from Minebea Intec, a leading manufacturer of industrial weighing and inspection technologies.

With state-of-the-art technology and a clear focus on efficiency and sustainability, the waste incineration plant in Dubai is helping the region to reduce landfill waste and promote renewable energy. A key element of the operation is a fully automated weighing system that makes the waste acceptance process efficient. Truck scales play a crucial role in this by accurately recording the weight of lorries entering and leaving the site. The difference determined enables exact billing of the delivered quantities, optimises process control and ensures legally compliant plant operation. User-friendly driver handling without time-consuming data entry and the system‘s fast weight value determination also increase efficiency and prevent traffic jams forming up to the truck scales.

Custom Truck Weighing System

A customised weighing system was developed for this project, consisting of five weighbridges measuring 18 m x 3 m, each with a capacity of 80 tonnes. Each weighbridge is equipped with eight highly accurate PR 6221 class C3 load cells (30 tonnes). The entire weighing process – from recording the gross weight to determining the tare weight – is controlled by the powerful Maxxis 5 weighing controller from Minebea Intec. The truck scales software integrated in the controller enables precise documentation and seamless

data processing. The documentation includes printouts ranging from simple weighing tickets to comprehensive statistical reports on network office printers.

Smart data management and precise process control

Efficient data acquisition and precise control with the Maxxis 5 Weight controller. The system includes a comprehensive database that stores information on vehicles, products, customers and hauliers, thus simplifying processing considerably. In the weighing process, the first weighing is carried out to record the gross weight of a loaded lorry. After unloading, the empty weight of the lorry (tare weight) is determined in the second weighing. The difference between these values gives the net weight of the transported load. For additional safety and traceability, it is possible to save the gross values in the Alibi memory. The Maxxis 5
thus combines precision, efficiency and intelligent data processing and sets standards in industrial weighing process control.

Reliable performance even after 48 hours under water

Challenging weather conditions: Putting the weighing system to the test. In April 2024, the United Arab Emirates was hit by extreme weather conditions, including an historic rainfall in Dubai. In a single day, 144 mm of rain fell – an amount equivalent to the average rainfall of 1.5 years. Such exceptional weather conditions caused significant problems for many pit scales. However, the specially developed weighing system demonstrated outstanding resilience: despite a 48-hour flood, during which the weighbridges were completely submerged, the system was able to resume operation seamlessly and without damage after the water had been pumped out and the power supply restored.

Deepu Raj, Service Manager, Industrial Retail Systems, commented: “We were impressed that the Minebea Intec weighbridge system was able to resume operation without error after being submerged for 48 hours – a true sign of outstanding reliability.”