

Encyclis ERF quadruples conveyor runtime by installing STARCLEAN®

The challenge

Energy from Waste (EfW) facilities are on the rise in UK. For 40+ years, Encyclis (formerly Covanta) have been a leader in safe recovery of energy and other resources from waste. The Energy Recovery Facility (ERF) at Newhurst opened in June 2023 and enables up to 455,000 tonnes of residual waste per year to be diverted from landfill. As this facility operates 24/7, its crucial to keep downtime and unplanned maintenance to a minimum.

As part of this ERF's process, the incinerator bottom ash (IBA) by-product is collected for further processing. It is conveyed on two alternating streams of belt conveyors to a storage bunker - ready to be transformed into aggregate for construction. When one stream is in use, the other is available for maintenance and housekeeping by the on-site contracted company.

IBA can be extremely difficult to handle due to its complex composition of materials such as; glass, metal and unburned residual waste. The troublesome material, coupled with ineffective belt scrapers on the conveyors, resulted in significant carryback problems - particularly on and around the head drum. This limited how long a conveyor stream could operate before intervention was required and, resulted in the streams being switched prematurely every 3-4 days to allow for maintenance.

Across both streams, it would then take the contractors 4 full days following every change to remove the IBA carryback from around the head drum, under the belts and the adjacent walkways.

In an effort to reduce the amount of reactive maintenance on the conveyors and make the handling of IBA more efficient, the Maintenance Manager contacted ProSpare for a solution.

3-4 days vs 2 weeks

runtime improvement of conveyor streams

IBA clean-up halved

on and around conveyors



2 belt conveyor streams handling incinerator bottom ash (IBA)

ProSpare

Make it better.

The solution and improvement

To combat the high levels of carryback and the effects of the abrasive IBA, two STARCLEAN® belt cleaners were trialled on a belt. A primary cleaner was specified with 286nl blades. In addition to tungsten carbide tips, the blades have a protective apron over the mounting feet to prevent premature wear. For the secondary cleaner, heavy duty 09hm tungsten carbide blades were selected and fitted to a reinforced blade base to tackle the remaining fines.

Following positive results from the trial, the Maintenance Manager decided to install STARCLEAN® belt cleaners on all 4 of the belts.

Previously, each stream would run for 3-4 days before being switched prematurely due to significant carryback problems. With STARCLEAN®, each stream now runs for 2 full weeks. The on site team only switch streams, by choice, for regular housekeeping and as part of planned preventative maintenance.

Similarly, before STARCLEAN®, the time spent cleaning and maintaining both streams of conveyors was 4 days with the head drum, underbelly and walkways requiring the attention of the on-site contracted company. With STARCLEAN®, cleaning time has been reduced to just 2 days across both streams - a 50% decrease in time. Additionally, the amount of carryback needing to be cleared has been more than halved.

Moreover, every 6 weeks a ProSpare engineer visits site to maintain the STARCLEAN® belt cleaners and clean around the head drum. This keeps the equipment in top working order and allows the contracted company to work on other projects.

The Maintenance Manager told our team:

“We’ve seen great improvement since installing STARCLEAN®. We can now plan preventative maintenance rather than working reactively. The service scheme is also a great help, it gives us extra peace of mind on the overall health of our equipment and frees up the contractors to focus on other areas of the plant now.



Example of incinerator bottom ash build-up under belt head drum



STARCLEAN® belt cleaners installed on one of the belts on site

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