Dear Reader,

At the Portsmouth, VA Naval Shipyard, steam used for operations is supplied by a municipal trash incinerator and boiler system; where the trash reaches the facility via a long incline belt conveyor that spans a highway. When the shipyard wanted to increase production, there were several challenges, including space constraints on the conveyor, difficulty in shutting down normal operations, etc.

To find out how SEW-EURODRIVE helped upgrade the system and increase production, working within these constraints, do read the full article below.

We hope you enjoy it!

madhura
Brand & Communication Team, SEW-EURODRIVE
February, 2020

# Drive technology TODAY

## Direct Drive Approach Proves More Efficient

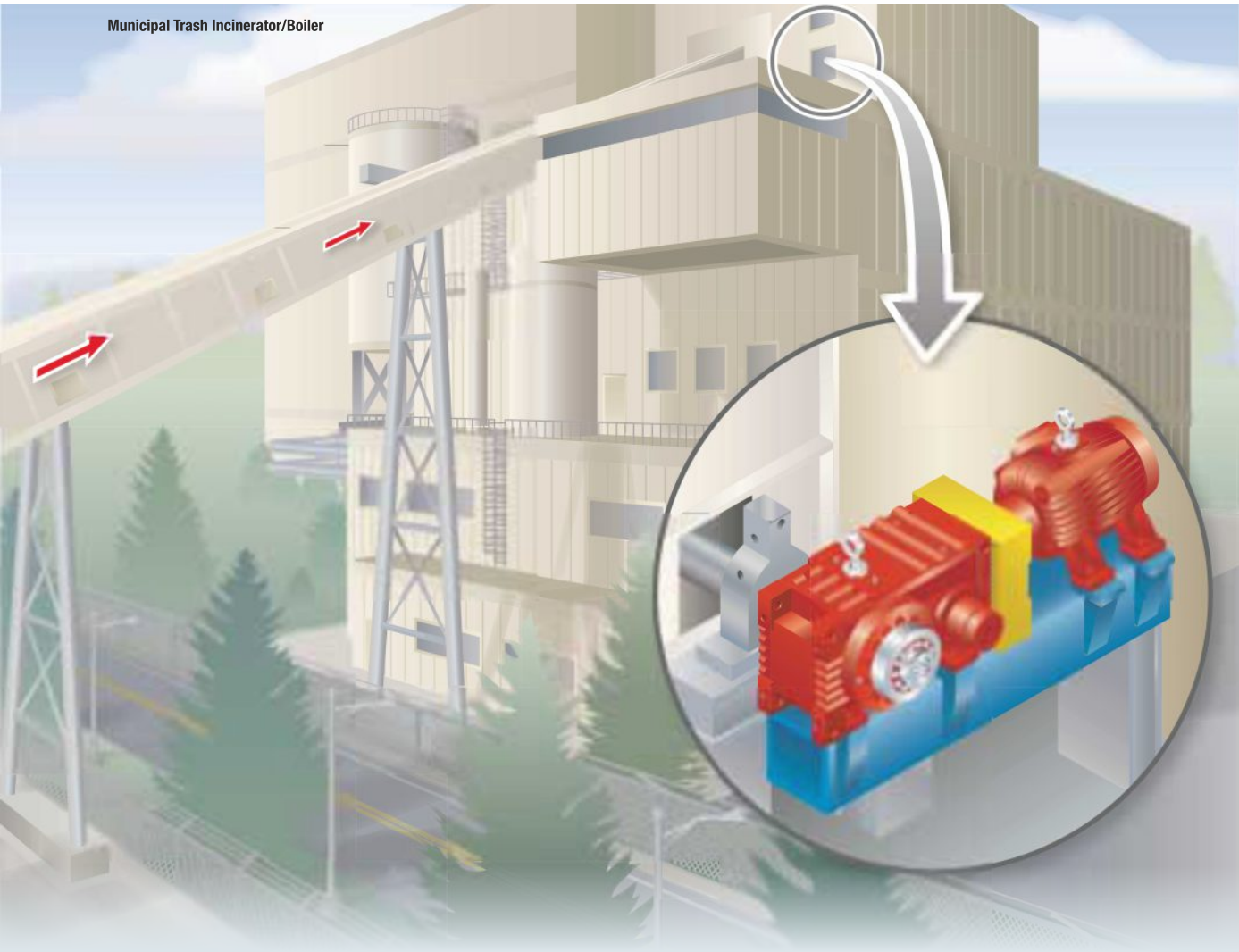
**Municipal Trash Incinerator Saves on Installation and Ownership Costs**

### Challenge

At the Portsmouth, VA. Naval shipyard, steam used for operations is supplied by a municipal trash incinerator and boiler system. From the dumping point, trash is fed onto a long incline belt conveyor that spans across a highway to the incinerator/boiler facility.

Motion Industries, a sub-contractor for the site, received a request for increased steam production to the shipyard. This meant trash tonnage flow to the facility must be increased. Due to space restrictions, the conveyor could not be increased in size, which left increasing conveyor speed as the only practical solution.

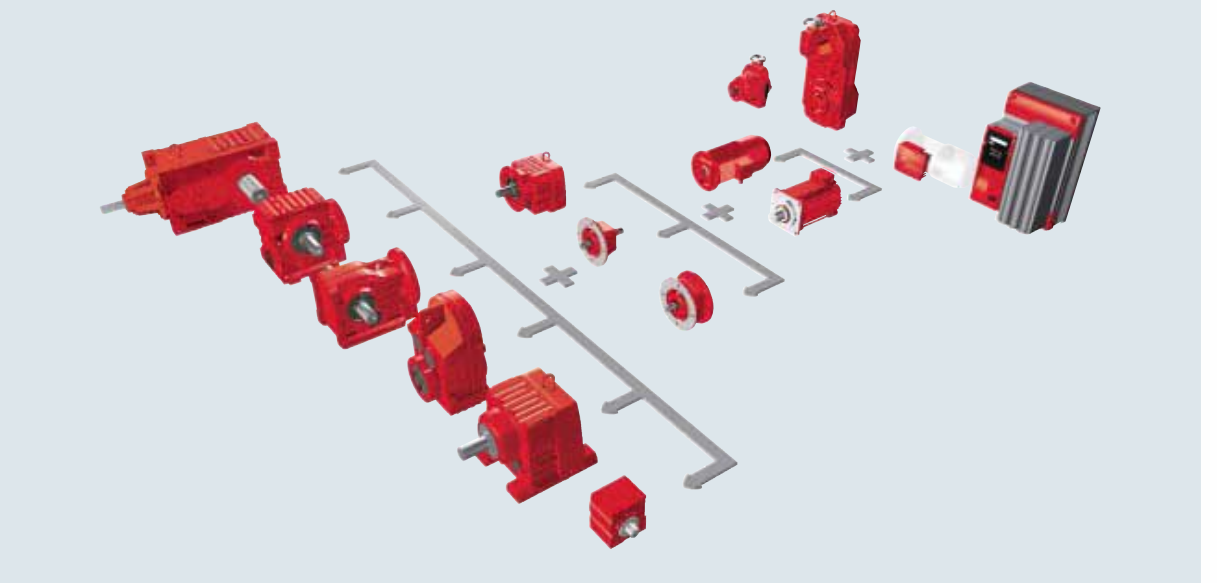
The conveyor's existing drive was an inline arrangement that included a 60 HP motor, a gear reducer, and a roller chain connection to the conveyor head pulley. Upgrading the inline arrangement to achieve the necessary speed increase would involve larger drive



Municipal Trash Incinerator/Boiler



SEW EURODRIVE



components including; a 120 HP motor, larger reducer and chain guards, larger base platform and associated supporting structure, and the fabrication and installation time for the retrofit.

## Solution

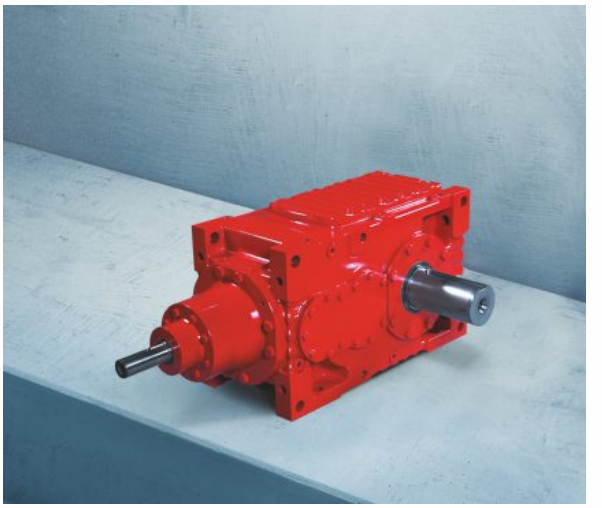
Motion Industries consulted with SEW-Eurodrive's Chris Wood, who recommended a right angle, hollow shaft, compact gear reducer mounted directly to the conveyor head pulley shaft. Wood said, " We remanufactured the conveyor head pulley as opposed to the upper inline drive structure. We were able to mount the motor, high-speed coupling, and gear reducer on a swing base and then slide the whole assembly onto the head pulley shaft. By shaft mounting the reducer onto the head pulley, a torque arm bracket was the only part that had to be fabricated."

## Results

Rather than suggesting upsizing the existing inline drive arrangement, SEW's direct drive approach proved more efficient and saved installation time, which was a big factor in the project.

Steve Rawlings from Motion Industries says, "A shaft-mounted drive was a good solution. The SEW unit was quick and easy to install onto the conveyor head pulley shaft. SEW had a quick ship, easier installation, and was able to deliver a week and a half to two weeks quicker than other companies who submitted bids."

Chris Wood says, "The new drive was installed during a scheduled plant maintenance shutdown and didn't interfere with normal operations. By direct driving the conveyor, efficiency was boosted by 15% to 20% which meant a 100 HP motor was sufficient to do the job. A more efficient drive arrangement allowed us to use the smaller motor. Maintenance issues and costs associated with the chain drive were also eliminated. This is the type of project we like. Everyone came out a winner!"



**SEW-Eurodrive offers the MC Compact series in eight models that can be mounted in virtually any position for challenging applications such as heavy conveyor systems, large mixers and travel drives for cranes.**



SEW EURODRIVE