

Case 46. 26-year-old male dry chemical process equipment operator died when he became entangled in an unguarded rotating shaft and was crushed.

On Wednesday, December 10, 2003, a 26-year-old male dry chemical process equipment operator died when he became entangled in an unguarded rotating shaft and was crushed. He was responsible for a process involving calcined alumina filler used for abrasives. The material, with the general consistency of flour, tended to bridge or clog in the dust collection hoppers. The bridging prevented it from flowing into the dust collection bags beneath the hoppers. When this happened, the victim would enter the dust collection tower and rap on the hoppers with a rubber mallet to free the material, allowing it to fall into the dust collection bags at the bottom of the hoppers.

A revolving steel shaft, 1-1/2 to 2 inches in diameter and approximately 12 feet long, was positioned across the base of the three hoppers driving valves to fill each bagging station. There were protrusions on the shaft near each of the valves, although the protrusions did not seem to be involved in the entanglement. The rotation of the shaft opened the valves and allowed the dust to fall into the bags. The exact reason for the entanglement is unknown, though the deceased man's clothing appeared to be closest to the shaft in most areas.

MIOSHA issued the following three Serious violations to the employer.
(Not all citations are directly associated with the fatality.)

Serious:

1. GUARDS FOR POWER TRANSMISSION, PART 7, RULE 727(1)
Provide guard for belt and pulley 7 feet or less above floor or platform.
(No guard, drive belt and pulley for auger – Dust Collection Tower)
2. GUARDS FOR POWER TRANSMISSION, PART 7, RULE 731(1)
Provide guard for sprockets and chain drives.
(Excessive guard opening, drive chain and sprocket – Dust Collection Tower)
3. GUARDS FOR POWER TRANSMISSION, PART 7, RULE 722(1)
Provide guard for shafting 7 feet or less above floor or platform.
(No guard, revolving shaft, dust collector valve shaft – Dust Collection Tower)