

Case 209. 29-year-old farm hand died when his shirt became entangled in an unguarded power take off (PTO) shaft while making feed for a dairy operation.

A 29-year-old male farm hand died when his shirt became entangled in an unguarded power take off (PTO) shaft while making feed for a dairy operation. The mixer/feeder involved was a Kuhn Knight 4090 mixer mounted on a trailer and hooked to a John Deere tractor. The mixer was approximately 24 feet overall length by approximately 8 ½ feet wide and 10 ¾ feet high. A front-end loader was used to place the feed components into the open top of the mixer. The mixer had four augers to mix the components. A PTO shaft connected the tractor and mixer and provided power to the mixer. The mixer had a 14-inch long shaft located approximately 40 inches above the ground. The shaft had a tube-floating guard over it which extended out of the underside at the mixer's front center. The 14-inch long shaft connected to a 4-inch wide universal joint and then through a fixed bearing located on top of a piece of channel iron measuring 4 inches wide by 14 inches high that was mounted to the top of the mixer tongue. The universal joint had a bolt extending through the joint holding it to the shaft. There was a 4-foot-long square shaft that connected to the front of the mixer universal and the universal and connector at the tractor. Guards were not replaced after repair activities several months earlier; no guards were present for either of the universal joints or the PTO shaft. The 4-foot-long shaft between the two sets of universals had a label on the shaft from the manufacturer stating "Guard Missing-Do Not Operate."

A digital scale box was mounted to a pivoting horizontal arm. The arm was mounted to the front of the feeder/mixer box. The scale box was approximately 7 feet above the ground and approximately 2 to 3 feet from the PTO shaft. The operator was required to load the mixer with the tractor running to power the PTO. The work practice as described to the MIOSHA compliance officer was as follows: To load the mixer, the operator pulled into the area, stopped the tractor and dismounted from the tractor cab with the power take off and mixer in operation. The operator walked to the scale box and pivoted it toward the side of the mixer so he/she could read the scale when loading feed into the mixer with the front-end loader. When the mixer was loaded, the operator pivoted the scale back toward the tractor so it could be seen while the tractor was feeding cattle out of the feeder/mixer.

Coworkers indicated to the MIOSHA compliance officer that hay would fall from the mixer onto the PTO shaft during loading. To prevent the hay from becoming wrapped around the shaft, they would use their hands to brush it away. Due to his height, the decedent might have had difficulty reaching the pivot arm on the mixer/feeder. To reach the arm, he may have stood on the mixer tongue and/or the rear wheel of the tractor. The event was un-witnessed. At some point during the decedent's work operation, his shirt became entangled on the bolt extending through the universal at the mixer/feeder. A coworker found him, turned the tractor off, and ran for help. His coworkers called for emergency response. When emergency response arrived, the decedent was declared dead at the scene.

MIOSHA General Industry Safety and Health Division issued the following Serious citations:

SERIOUS: FARM FIELD EQUIPMENT, RULE 1928.57(a)(6)(i)(ii)(iii)(iv)(v)

Instruct every employee at the time of initial assignment and at least annually thereafter in the safe operation and servicing of all equipment with which the employee will be involved to include at least the safe operating practices listed.

No initial or annual instruction of requirements of keeping guards in place during operation, Kuhn Knight Botec Mixer/Feeder Model 4090

SERIOUS: FARM FIELD EQUIPMENT, RULE 1928.57(b)(1)(iii)

Install guards to protect against employee contact on positively driven rotating members of power take-off driven equipment.

- (a) No power take-off shaft guarding. Two Kuhn Knight Botec Mixer/Feeders, Model 4090.