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Machine Guarding for Blank Spinning on Semiautomatic Machines Proven Unfeasible

Loren Cook Co., Springfield, MO, is a manufacturer of commercial and industrial fans using primarily semi-automatic metal spinning machines in its production process. The same type of machines are used throughout the spinning industry.

Loren Cook Co. has an excellent safety program and spotless safety record on its spinning machines. Its safety director works together with its manufacturing engineers to evaluate safeguarding needed, if any, on all production machines purchased, before they are installed in the plant.

Up to the time of this 2004 inspection, OSHA had recognized that the spinning blanks of manual spinning machines could not be feasibly or safely guarded because of the required operator access to form and lubricate the spinning blanks. OSHA, in 1997, admitted after exhaustive safety machine guarding and lubrication alternatives study by C.A. Dahlin Co. that it recognized that neither doors in front of the blanks (offered as an optional component by spinning-machine manufacturers) nor changes in lubrication methods were feasible.

Lubrication, to be effective to protect spinning blanks made into spun parts, must be manually applied mutton. The industry-practice mutton-application method is with a stick or rolled canvas device haled by the operator directly to the spinning blank. Any other type of liquid such as oil or sprayed-on lubricant fails to fully protect the blank.

OSHA went to incredible lengths to try to beat this spinner, if not the entire semiautomatic-spinning-machine industry, and pin a general machine-

guarding standard violation and \$17,000 proposed fine on the employer to boot. The agency brought in one of its senior trial lawyers to take over the case in the middle of trial. It hired a New York consultant who opined that the company's extensive engineering studies of nearly every machine-guarding device imaginable were inadequate somehow because they were not a "risk assessment" analysis (which is not required under OSHA's general machine-guarding standard, 1910.212).

Risk assessment is an ANSI described process of listing all of the hazards of a machine, assessing probabilities of exposure, if any, to those hazards, prioritizing guarding methods for each hazard, and then accepting the risk(s) without any guarding needed for "minimal" or acceptable-risk hazards. The approach of leaving unguarded subjectively evaluated minimal or acceptable risks would clearly seem to violate OSHA's concept of guarding all hazards, if feasible, under OSHA guarding standards. In fact, no OSHA machine-guard standard even mentions conducting a risk assessment for compliance. Yet, by the middle of this 13-day trial, OSHA seemed to be pressing risk assessment as the only compliance method for studying machine safety guards.

Then there was the OSHA consultant's sweeping proposals for guarding:

- He wanted the machine operators removed completely from the machine first by elevating them 6 ft. in the air on a mobile bridge straddling over the spinning blank. When the ridiculousness of that became apparent, he switched his theories to removing the controls and operators to a position

behind the machine—to visualize and hear the critical forming process through a television screen. He wanted mutton eliminated in favor of a hand-held hose spraying oil (all over the place) shoved through an opening in doors in front of the spinning blank. He claimed a company in North Carolina has its operators reach their hands into this gap directly by the edge of spinning blanks.

When all of these suggestions failed to sound reasonable, OSHA changed its tactics mid-trial and sought only the manufacturer's option doors, which are interlocked to the electrical controls and have to be bypassed to remain open during all lubrication and machine programming and setup activities. OSHA also sought a total change in the lubrication from mutton to oil.

Fortunately, Loren Cook engineers exhaustively analyzed every type of reasonable alternative safeguarding method and device and found none of them could be safely used on this type of machine point-of-operation:

- Doors or barrier guards could not be used for many of the required hands-on programming, monitoring or lubricating tasks of the semiautomatics; industry practice is to not use doors or interlocked barriers, and to electronically bypass any that came on the machine;

- Rubber pressure mats, interlocked to the machine controls would force the operator nearly 30 ft. away from the machines;

- Light curtains would prevent required machine operator duties;

- Extended lubrication sticks would have to be 20 to 30 ft. long and even 8-ft. sticks could cause ergonomic stress injuries and fail to properly lubricate the blanks;

- Cages, fences and other operator removal methods would similarly eliminate required lubrication, operator, programmer and setup duties;

- Pullbacks would not work;

- Interlocks and bypass switches would require not only all new electrical hardware and controls, but be eco-

nomically infeasible; and

- Removing either the programmer or the operator duties away from the operator's designed work platform would be unsafe and eliminate the production use of the semiautomatics.

OSHA Administrative Law Judge Ken S. Welsch relied on Loren Cook's in-house, state-of-the-art CAD software modeling and engineering methods and feasibility studies, and by implication, rejected OSHA's demand for risk assessment. Judge Welsch found all guarding-method alternatives infeasible for application to the spinning blank. The remaining spinning machine components were viewed to be nonhazardous or guarded. As to doors and lubrication method changes sought by OSHA, the trial judge rejected them as technically unfeasible and unworkable because:

- The door must be closed in order for the spinning machine to be activated. With the door closed, operators could not load or unload the blanks, lubricate the blanks, or set up the machine. Long-time PMA Spinning Division member Win Walter, who has worked in the industry for more than 40 years, testified that semiautomatic spinning machines would be inoperable with the door closed.

- Mutton is the ideal lubricant for aluminum products, and it has been the lubricant used in the "craft of metal spinning" since the time of ancient Egypt. Mutton present no environmental hazards, either in its use or in its disposal. Mutton has worked the best at Loren Cook's facility to prevent dry spots, which result in damage to the blanks.

In addition, Judge Welsch found that retrofitting Loren Cook's semiautomatics with doors or barrier guards to be economically unfeasible and dismissed the entire guarding citation and proposed penalty. OSHA did not appeal, so Judge Welsch's citation dismissal ruling is a final order.

If you would like a copy of the decision, contact Elkhe Law office. **MF**