

# OCCUPATIONAL SAFETY

## ENSURE WIDEST DISSEMINATION

### SUMMARY

#### **Logistics and Handling Permanent Partial Disability**

Workers are at risk of severe injury and death during machine maintenance and servicing if proper lockout and tagout procedures are not followed. NIOSH recommends developing and implementing a hazardous energy control program including lockout and tagout procedures and worker training to prevent such incidents.

### Description of Exposure

Machine-related injuries or fatalities can occur during maintenance and servicing tasks when workers are exposed to an uncontrolled release of energy or during unexpected equipment startup. During 1982–2006, NIOSH investigated 185 fatalities related to installation, maintenance, service, or repair tasks on or near machines, equipment, processes, or systems. Investigations were carried out in 20 States as part of the Fatality Assessment and Control Evaluation (FACE) Program. Failure to completely de-energize, block, and/or dissipate the energy source was a factor in 142 (77%) of the incidents; failure to lockout and tagout energy control devices and isolation points after de-energization was a factor in 31 (17%). If machines start up during maintenance, repair, adjusting, or servicing, workers can be caught in the machinery and suffer fractures, crushing injuries, amputations, or death [NIOSH 1999, 2006].

### Application of the Lockout/Tagout Standard

Incidents related to lockout/tagout procedures were the most cited violation in manufacturing by the Occupational Safety and Health Administration (OSHA) during 2006–2007 [Jarrell and Washam 2009]. One study analyzed OSHA accident investigation reports from 1984–1997 and found that in more than half of the 348 investigated cases, lockout procedures were not even attempted” [Bulzacchelli et al. 2008]. These figures reinforce the necessity of having a written hazardous energy control program and ensuring that employees understand and follow the procedures.

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