

# OAIMA/ODNR/MSHA/Ohio Holmes Safety Association

March 1, 2017  
SPRING THAW



Jenifer Lehman, PHR, CTM  
Martin Marietta



# GUARDING

## IN A MINING OPERATION

**Guarding Machinery  
at Metal & Nonmetal Mines**



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# GUARDING IN A MINING OPERATION



## Moving Machine Parts 30 C.F.R. 56/57.14107

- (a) Moving machine parts shall be guarded to protect persons from ***contacting gears, sprockets, chains, drive, head, tail and take-up pulleys, flywheels, couplings, shafts, fan blades*** and similar moving parts that can cause injury.
- (b) Guards shall not be required where the exposed moving parts are at least seven feet away from walking or working surfaces.

# Machinery and Components to Guard

- Crushers and screens
- Rotating equipment
- Drive & power transmission components
- Packaging and palletizing equipment
- Power tools and auxiliary equipment
- Conveying equipment
- Mobile equipment



## Preamble: 30 CFR 56/57.14107

- Guards are meant to protect persons from:
  - Inadvertent, careless or accidental contact
  - Deliberate or purposeful work related actions



# TYPES OF GUARDING

- Point of Contact Guarding
- Location Guarding
- Area Guarding



# POINT OF CONTACT GUARDING



# LOCATION GUARDING

The distance from the head drive pulley to the ground is greater than 7 feet.





# AREA GUARDING



# AREA GUARDING

- Be cautious as MSHA is focusing on Area Guarding





## Preamble: 30 CFR 56/57.14107

- Work does not have to be assigned or directed by management or a supervisor
- The Standard does not address deliberate or purposeful, NON work related actions

# Materials Used to Make Guards



Sheet metal



Expanded metal  
mesh

# Materials Used to Make Guards



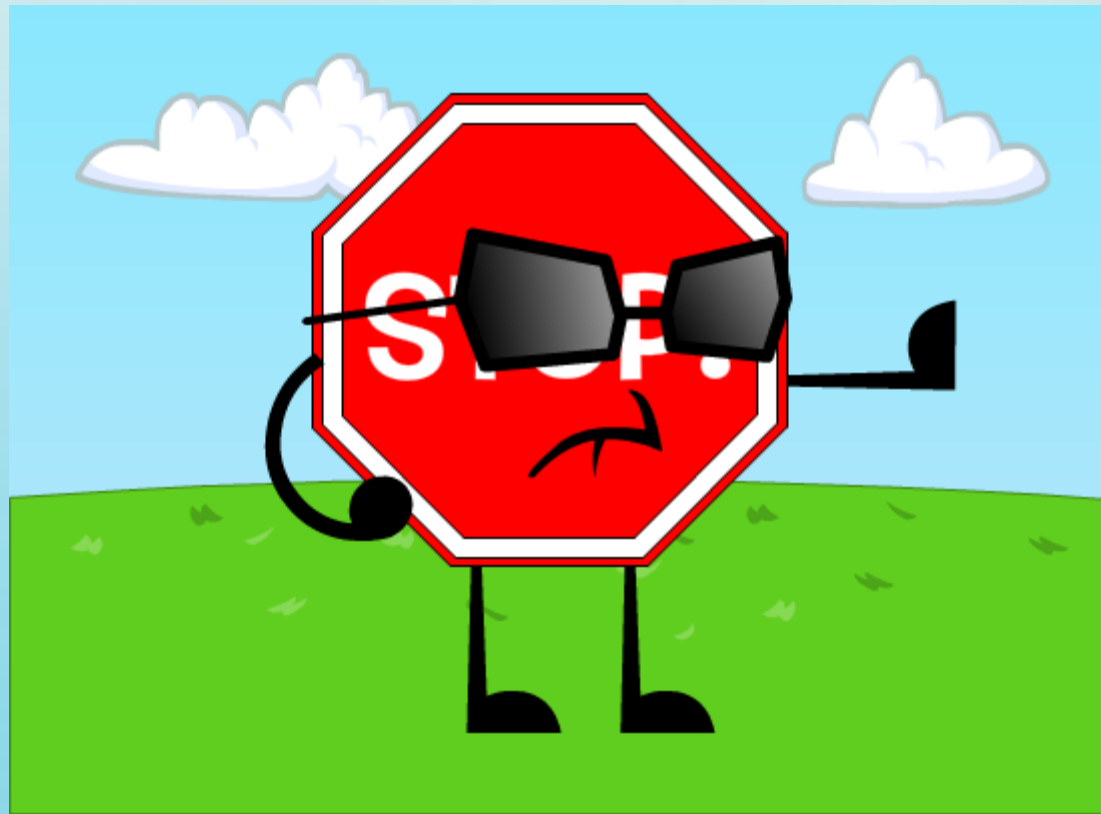
Properly Secured  
Rubber



Screen Cloth



# YOUR GUARDING EXPERIENCES



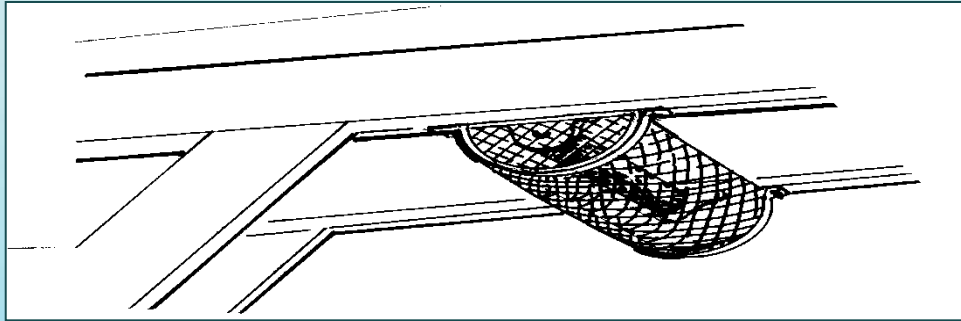


# TAIL PULLEY GUARDS



If you can get under a tail pulley, evaluate for guarding

# RETURN ROLLERS



# Construction and Maintenance of Guards

## Parts 30 C.F.R. 56/57.14112

- (a) Guards shall be constructed and maintained to:
  - (1) Withstand the vibration, shock and wear to which they will be subjected
  - (2) Not create a hazard by their use

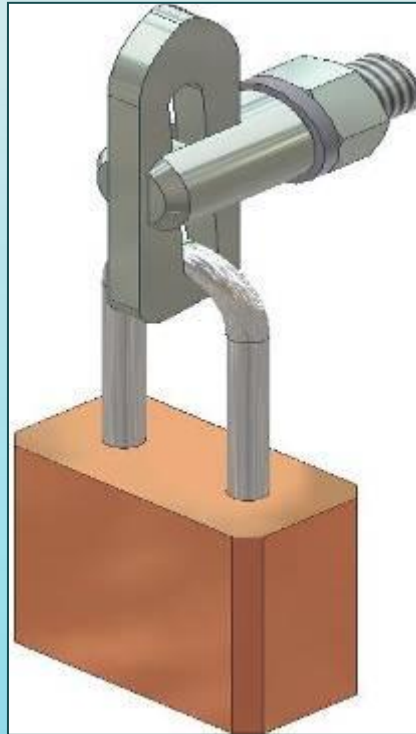
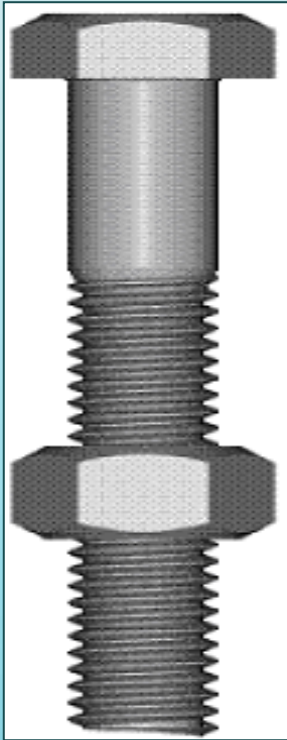
# Construction and Maintenance of Guards

## Parts 30 C.F.R. 56/57.14112

(b) Guards shall be securely in place while machinery is being operated, except when testing or making adjustments which cannot be performed without removal of the guard.



# Fasteners & Fastening Systems



# Fasteners & Fastening Systems

- Fastener locking devices are not required
- Tools are not required to remove a fastener
- What else do you use?

# Fasteners & Fastening Systems



# “THE GUARDING GAME”






## “THE GUARDING GAME”

- Rules of the game
  - Two teams
  - Players approach the screen
  - Picture flashes on the screen
  - Player who hits the buzzer 1<sup>st</sup>
    - What are you looking at
    - Is it properly guarded
    - If not why
- Answers CORRECT – points are awarded
- Answers INCORRECT – points awarded to other Team





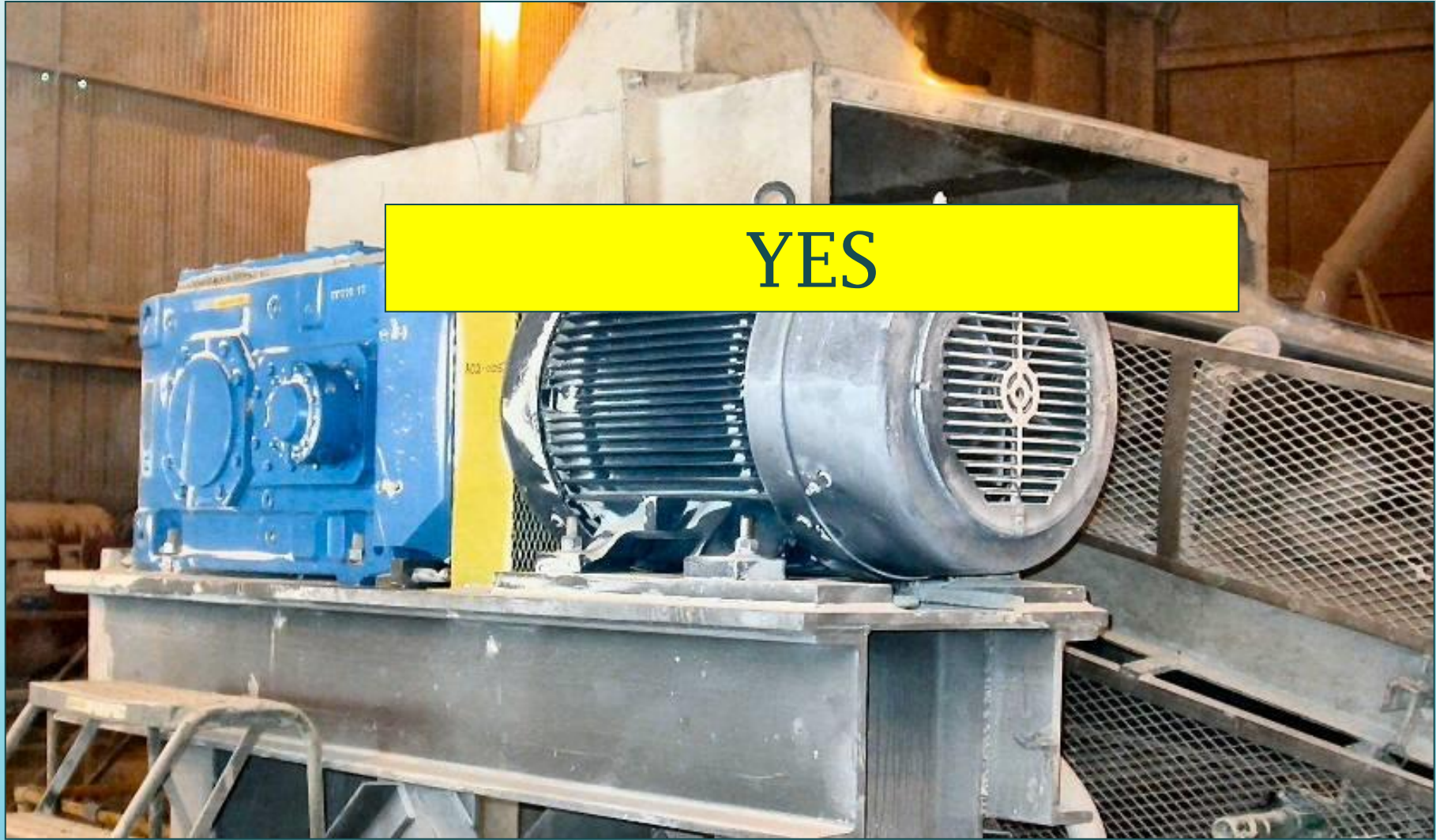
NO - Head section -  
Guard belt and all  
moving parts

YES





YES







A photograph showing a close-up of a mechanical shaft extension protruding through a metal safety grate. The grate is made of a diamond-shaped mesh. The shaft is a light-colored, cylindrical metal piece. The background is a dark, textured surface, possibly a concrete wall or floor. A yellow text box is overlaid on the image, containing the text "NO - Shaft extension needs guarded".

NO - Shaft extension  
needs guarded





A photograph of a large industrial machine, possibly a conveyor system or a large pump, featuring a drive belt and pulleys. The machine is dark-colored and appears to be in a dimly lit environment. A yellow rectangular text box is superimposed over the center of the image, containing the text "NO -Drive belt - Moving parts need a guard".

NO -Drive belt -  
Moving parts need a  
guard



NO - Tail pulley -  
Guard needs repair



YES











NO – Sprocket – Add  
guard

A photograph showing a close-up of a concrete structure, possibly a dam or bridge, with a metal mesh guard. The mesh is made of diamond-shaped openings and is attached to the concrete with wires. The concrete appears weathered and has some debris on it. A yellow text box is overlaid on the center of the image.

NO - Tail Section -  
Rehang and secure  
guard



YES





NO – Return roller  
guard needs  
repaired/replaced



NO - Tail section -  
Rubber needs to be  
secured at corners






YES



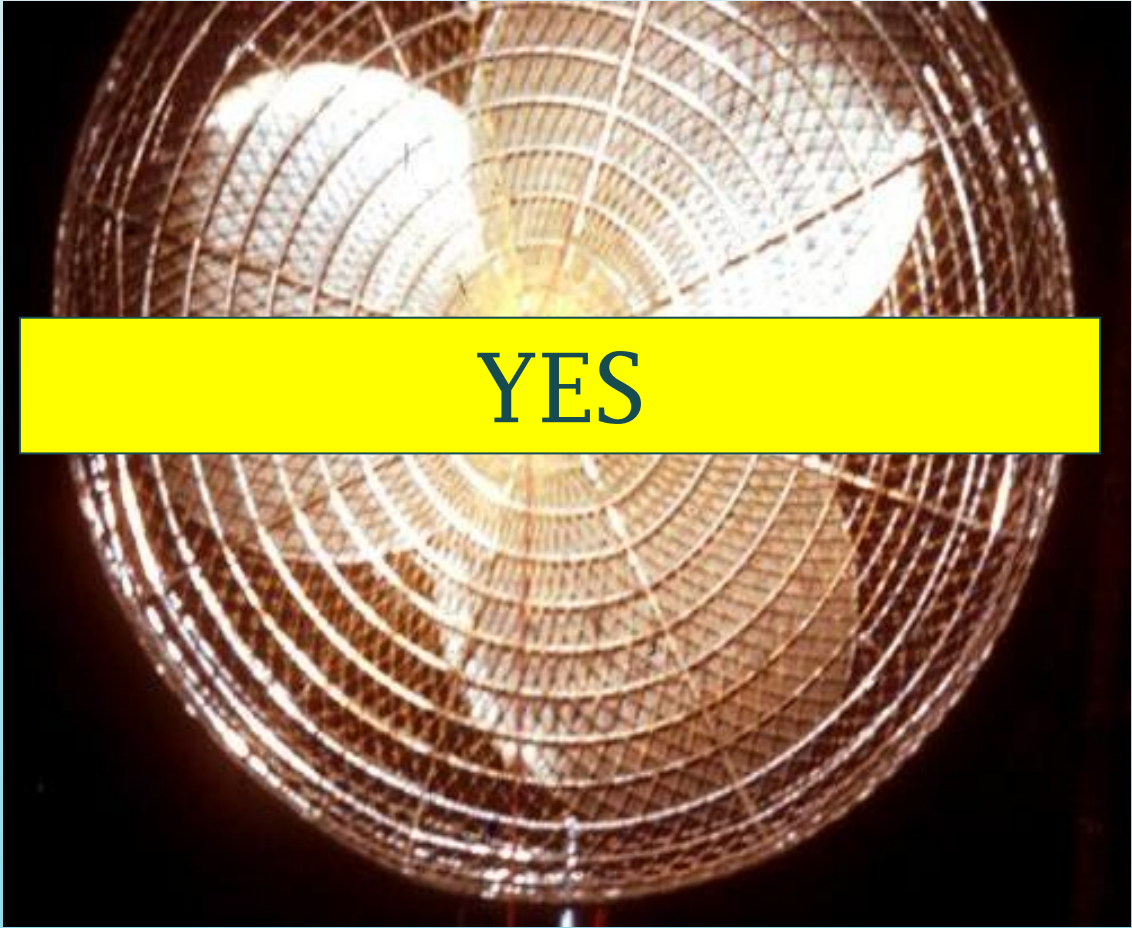


A photograph of a large industrial machine, likely a conveyor system, featuring a large drive pulley and a belt. The machine is dark-colored and appears to be made of metal. A yellow text box is overlaid on the image, containing the text "NO - Drive Belt - Guard needs to be added".

NO - Drive Belt -  
Guard needs to be  
added



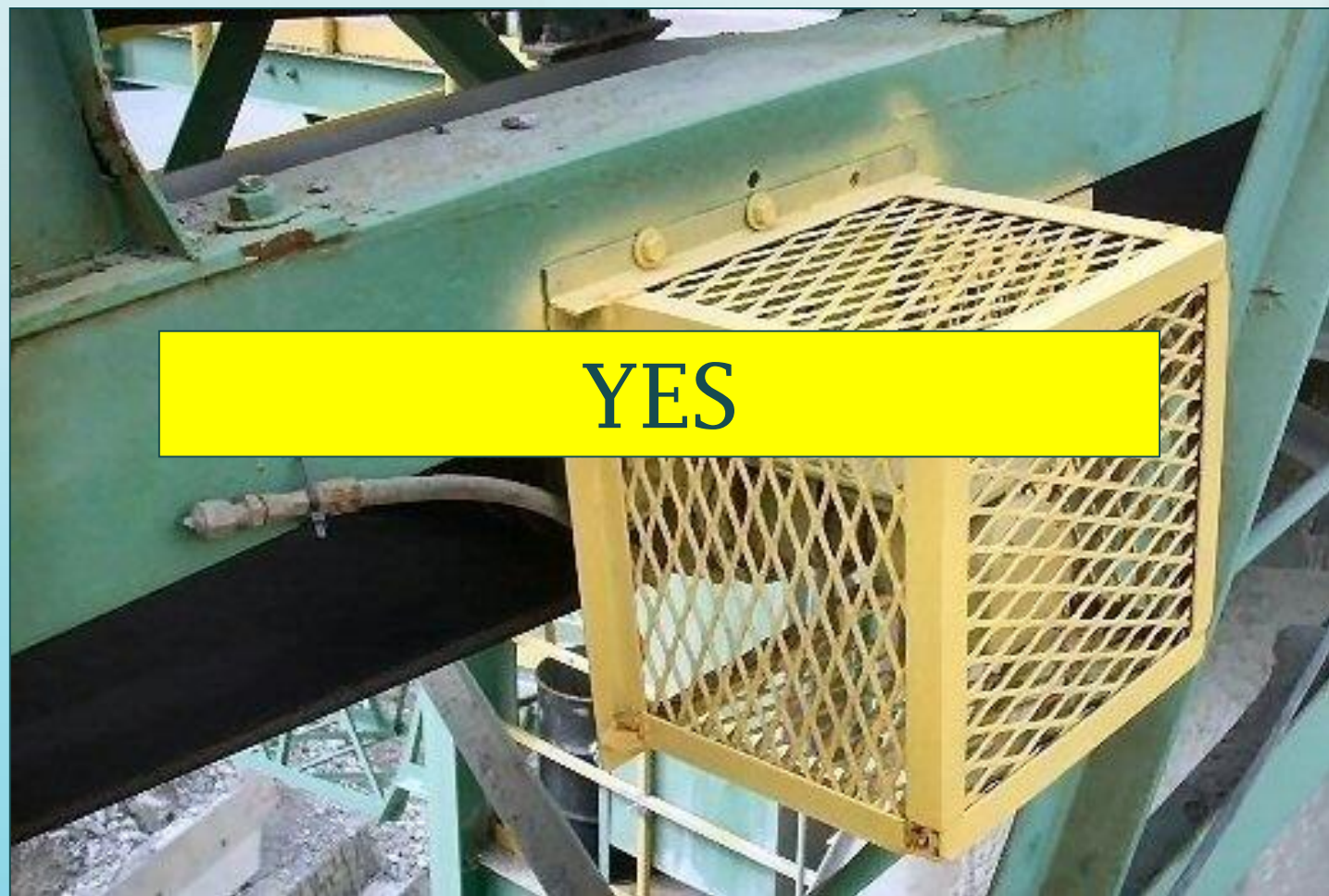
NO - Take up Pulley  
- Needs barrier  
around the area  
below



YES









NO -Tail section  
within 7 feet -  
Needs guard





NO -Fan, if within 7  
feet - Needs guard



THANK YOU  
&  
BE SAFE



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