Using Case Studies to Train Workers
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"We can tell people abstract rules of thumb which we have derived from prior experiences, but it is very difficult for other people to learn from these. We have difficulty remembering such abstractions, but we can more easily remember a good story. Stories give life to past experience... We are more persuasive when we tell stories. For example we can simply state our beliefs, or we can tell stories that illustrate them.” (Roger Schank, 1990. Tell me a story: A new look at real and artificial theory. New York: Charles Scribner’s Sons, p. 10).

The attached stories illustrate how case studies can be used effectively in safety training. Stories give context and help workers apply knowledge to realistic situations. Instead of lecturing to workers about abstract safety rules, use stories of injuries to engage learners in meaningful discussions about safety on the job. There are many ways injury stories can increase the effectiveness of training. For instance, you can:

1. Share an introductory story to focus attention and get participants engaged in the training process.
2. Ask trainees to share their own stories to increase the training’s personal relevance.
3. Assign learners to solve problems based on injury scenarios that are relevant to their jobs.

Some stories are more effective than others:

1. A good story is one that clearly illustrates how a preventable injury can occur. A good story will also demonstrate a clear cause/effect relationship between an injury and an unsafe behavior that will be under the trainee’s control.
2. The setting of the story should be similar to the work environment of your trainees. In other words, don’t use stories about large manufacturing equipment to train workers who operate small office machines.
3. The story should be free from distracting side issues. For instance, experienced trainees may dismiss a story about a young, inexperienced worker by attributing the accident to immaturity, rather than unsafe behavior.
4. The theme of the story should not be inflammatory; otherwise, unproductive blaming may ensue. For instance, if you are training line workers, don’t use a story about a supervisor whose actions led to a line worker’s death.
5. Good stories have suspense. Try telling the first half of the story, and then ask participants to predict what’s going to happen next. Let participants discuss what the story’s character should do to avoid injury before telling them what actually happened.

Sources of injury stories for training:

1. National Institute for Occupational Safety and Health (NIOSH) Fatality Assessment and Control Evaluation (FACE) reports: http://www.cdc.gov/niosh/face/
2. Occupational Safety and Health Administration (OSHA) accident investigations: https://www.osha.gov/pls/ims.AccidentSearch.html

Standard Lockout/Tagout Procedures for Equipment Maintenance and Installation

1. Notify other workers the equipment is being shut down and locked/tagged out. Also inform workers that no one should remove the lock/tag or try to start the equipment.

2. Make sure you know the hazards of the equipment and its power source. Consult the repair manual, ask your supervisor, or contact the manufacturer if necessary. Hazardous power and energy include electricity; hydraulic/pneumatic pressure; pressurized liquids/gases; toxic/flammable/corrosive/asphyxiating materials; steam; extreme heat/cold; mechanized machine parts; falling weights; elastic parts under tension; radiation; etc.

3. Shut down the equipment (push the stop button, flip the switch, close the valve, etc.).

4. Shut off the power at its source (circuit breaker, manual disconnect switch, valve, etc.) and apply the lock/tag.

5. Relieve or restrain any stored power (discharge capacitors, block suspended parts, let hot parts cool, restrain flywheels, relieve air or hydraulic pressure, release or block springs, etc.).

6. If tags are being used instead of locks, take an additional safety measure (block a controlling switch, close an additional valve, etc.).

7. Make sure everyone is out of the way. Then try to start the equipment (e.g., push the "on" button) to see if all power is locked out.

8. Test electrical circuits and electrical parts of the equipment to make sure the power is off.

9. Return all operating controls to "neutral" or "off."

10. Repair the equipment.

11. Once equipment is repaired, make sure tools have been removed and equipment has been properly put back together.

12. Make sure everyone is out of the way.

13. Verify equipment controls are in the neutral or "off" position.

14. Remove locks/tags and restore power to equipment.

15. Notify other workers the repair is finished and equipment is ready for use.
4. How does this situation relate to maintenance tasks at your workplace?

Statement:

Situation: Decide which of your five choices with a "Because"

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Refer to the lockout/tagout procedures on p. 2 of this handout list.

2. What do you think will happen to the worker? List possible outcomes.

1. Which forms of hazardous energy may be present in this situation?

Discuss the following:

the fixture is a plug that is removed from the wall, and the holder is designed to prevent the light bulb from falling. The worker must be able to change the light bulb while maintaining the holder in place.

A maintenance worker was changing a broken metal halide bulb in a


Washington Case Report: 04WA080

NOSH Fatalities Assessment and Control Evaluation (FACE) Program
Lockout/Tagout Case 2

4. How does this situation relate to maintenance tasks at your workplace? What types of electrical work are performed?

PRECAUTIONS in this situation: Define each of your five choices with a "because" statement. Refer to the lockout/tagout procedures on p. 2 of this manual. List what you believe are the FIVE MOST IMPORTANT steps.

2. What do you think will happen to the workers? List possible outcomes in order, from most- to least-likely.

1. What forms of hazardous energy may be present in this situation?

Discuss the following:

- Are current precautions adequate? Are any changes needed?

California Case Report: OCA007
NIOSH Fatal Injury Assessment and Control Evaluation (FACE) Program
4. How does this situation relate to the situation described in the example? Why might this be useful in understanding the situation?

3. What forms of hazardous energy may be present? List all.

2. When do you think will happen to the welder? List all.

1. What forms of hazardous energy may be present? List all.

Discuss the following:

The jammed metal was cut with a torch as he had often done before. The jammed metal was cut across the top of the door and out. He then climbed a ladder to the top of the discharge switch. Next, he climbed the ram to the top of the discharge switch.

First, he shut down and locked out electrical switches on an electrical

A piece of scrap metal became jammed in the left hydraulic
door opening. The 25-year-old welder was sent to

from closing a 25-year-old welder was sent to

door on a scrap metal shredder. The jam prevented the door
doing this task. The welder was sent to

http://www.cdc.gov/niosh/topics/shredder/02202004.html

California Case Report: 20C004

NIOSH Fatality Assessment and Control Evaluation (FACE) Program
4. How does this situation relate to risks at your workplace?

3. Refer to the Lockout/Tagout procedures on P. 2 of this handout. List what you believe are the FIVE MOST possible outcomes in order from most- to least-likely.

2. What do you think will happen to the plumber? List situations that all mean by present in this situation.

Discuss the following:

- Pressure was 100 pounds per square inch (psi).
- Upstream valves had been closed, and this section of pipe was not vented.
Lockout/Tagout Case 5

1. A worker was cleaning a gasoline-powered mortar mixer at a construction site. With the engine running, drum guard open, and mixing blades rotating, the worker used a water hose to clean the inside of the drum.

2. Discuss the following:
   - What forms of hazardous energy may be present in this situation? List all you can think of.
   - What do you think will happen to the worker? List possible outcomes in order, from most- to least-likely.

3. Refer to the lockout/tagout procedures on P. 2 of this handout. List what you believe are the FIVE MOST IMPORTANT PRECAUTIONS in this situation. Defend each of your five choices with a statement.

4. How does this situation relate to jobs at your workplace? Do any maintenance tasks involve similar hazards? Are current precautions adequate? Are any changes needed?
Lockout/Tagout Case 6 Outcome

A worker was operating a coating machine. A strip of brass moved through the machine—passing over rollers which maintained tension on the strip at 1,000 psi. One of the rollers was dirty and began making dents in the brass strip. The worker decided to clean the roller as the machine ran at slow speed (50 feet per minute, fpm).

Discuss the following:

1. What forms of hazardous energy may be present in this situation? List all maintenance tasks involved similar hazards? Are current precautions adequate? Are any changes needed?

2. What do you think will happen to the worker? List possible outcomes in order from most to least likely.

3. Refer to the lockout/tagout procedures on P. 2 of this handout. List what you believe are the FIVE MOST IMPORTANT PRECAUTIONS in this situation. 

4. How does this situation relate to jobs at your workplace? Do any of your five choices with a “because” statement.

Line jog moves line only when button is held down.

Dirty surface

22-inch diameter rollers

6-inch wide brass strip

6-inch wide brass strip

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