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Line of Fire

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PFI Line of Fire Best Practice

Line of Fire can simply be viewed as the path any given object could travel with respect to an individual's given body position and create a risk of injury. In many of the tasks that you perform every day there is the possibility of putting yourself in the line of fire. When planning your work, consider aspects of the job that put you in the line of fire and implement a mitigation to the risks.

Line of Fire hazards can generally be broken down into three mechanisms of potential injury

Stored Energy: Occurs if a person is in the path of and suffers the consequence of released energy



Striking Hazards: Occurs if a person is struck by an object



Crushing Hazards: Occurs if a person is caught inside of, or in between different objects



Examples of Hazardous Energy that can trigger mechanisms of potential injury:

Stored Energy

Thermal:

- Standing at the end of a pipe that is being disconnected
- Disconnecting thermal piping
- Exterior temperature of piping being welded

Pneumatic:

- Opening valves to release pressure where the discharge vent is located next to the worker
- Opening flange under pressure
- Removing a stuck pig from a pipeline
- Air hoses

Hydraulic:

- Working around worn or damaged hose and piping
- Passing your hands over a hydraulic line to feel for leaks

Mechanical:

- Changing the blade on a portaband without unplugging the tool
- Standing in front of moving equipment to direct traffic

Electrical:

- Working on equipment that has not been de-energized
- Standing directly in front of a panel when activating a breaker

Nuclear:

- Working downline or within barricaded areas of non-destructing x-ray testing
- Working around nuclear gauges

Gravitational:

- Standing beneath suspended loads or where unsecured tools and equipment are used

Striking Hazards

- Working under suspended loads or underneath other trades
- Low clearance – head knockers
- Moving equipment
- Improper tool use – grinders, drills, pipe wrench

Crushing Hazards

- Moving equipment/Setting equipment
- Loading and unloading materials
- Pinch points – Threading/grooving machines

Elimination of a hazard is not always feasible. In certain cases, engineering controls are the next best choice in protecting yourself from injury. Engineering controls can include physical barriers, guarding around moving parts, and automation or mechanical transport for certain material handling. There are many other possible engineering controls that could be used depending on the specific hazard.

Total elimination of hazards is not always possible and engineering controls may not be feasible. Proper hazard identification is essential so you're not putting yourself in harm's way in the first place. Understanding the tasks that are being performed around you and their associated hazards is the first step in personal safety. Ask yourself; "What is the worst that can happen or what will happen if a certain safeguard fails." Recognize line of fire hazards and act accordingly. The following are a list of precautions to take to prevent you from being in the line of fire:

- Perform a hazard assessment before beginning work to identify all line of fire potential activities beginning work and re-assess throughout the day to identify changing conditions. A good exercise is – every 20 minutes, take 20 seconds to look 20 feet around you.
- Make sure to protect yourself by wearing the proper protective equipment and performing the task in a safe manner
- Cut away from your body. When you must cut towards yourself stand so that if the tool slips or kicks back it would not hit your body.
- Never pull equipment or tools toward your face or body.
- If you must use force when pushing or pulling always identify the path your hands, arms and body would go if you slipped or equipment gave way, also identify the path of the object you are pushing or pulling.
- Always use a tool for its intended purpose and follow the instructions in the operator manual for that tool.
- Stand firm footed and square up to whatever you are working on.
- Never work around equipment with missing guards.
- Never walk under suspended loads.
- If you are hoisting materials, barricade the area around the hoisting zone.
- Never walk into a barricaded area without authorization and understand why there is a barricade.
- When working around equipment that is controlled remotely or could potentially start up, always lock and tag it out.
- When working around mobile equipment make sure the operator knows you are there. Never put yourself in a position where you are between a piece of mobile equipment and another object. Never walk behind mobile equipment. When moving mobile equipment in tight areas always use a spotter.
- Be aware of your body position when opening a line. Identify any upstream valves or inline devices that could store energy and ensure the content has been dissipated prior to opening line. Ensure line is not under pressure and that you are out of the way if the material inside would happen to come out.