The Job Hazard Analysis Process

Town of Chino Valley

Safety Committee

October 2012

Objectives

- Discuss the elements of a Job Hazard Analysis (JHA)
- Identify typical hazards in the workplace
- Review various techniques that can be used to identify hazards in the workplace

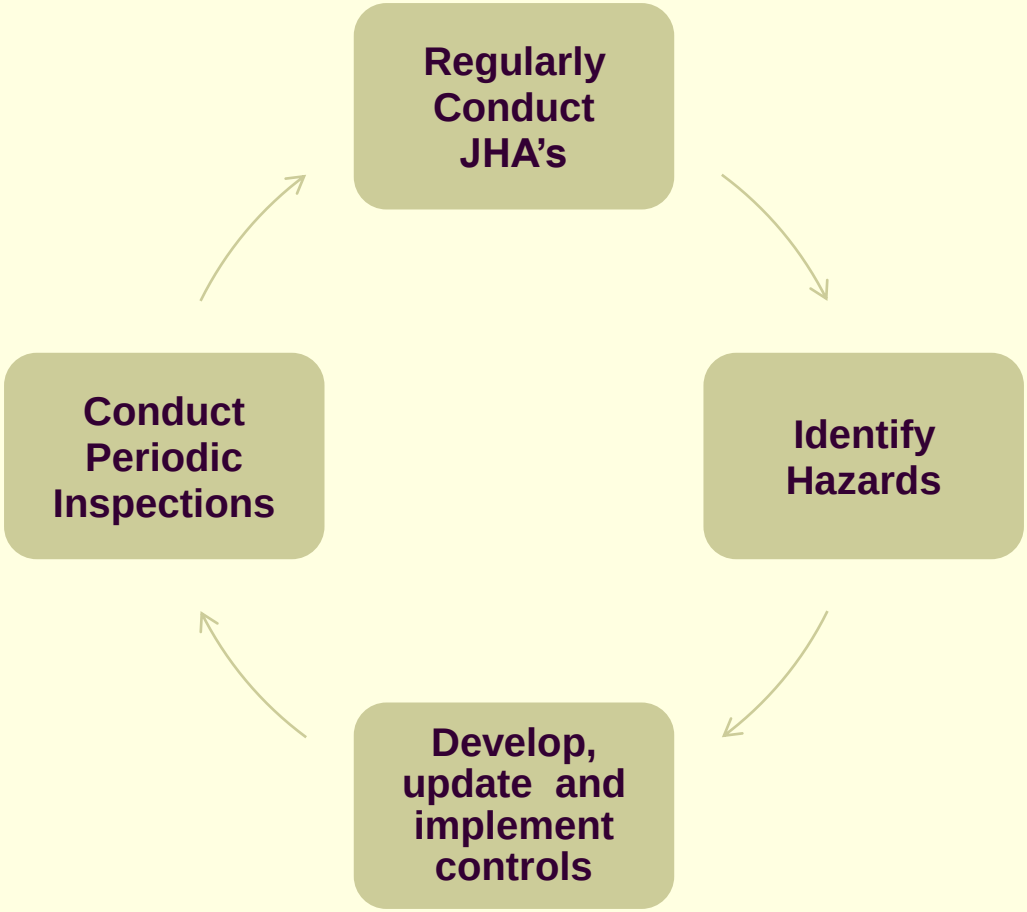
Job Hazard Analysis

- A job hazard analysis is a technique that focuses on job tasks as a way to identify hazards before they occur.
- It focuses on the relationship between the worker, the task, the tools, and the work environment.
- It identifies uncontrolled hazards and helps to determine a course of action to eliminate or reduce the risk.

Plan for Conducting a Job Hazard Analysis

- Regularly conduct Job Hazard Analysis (JHA's)
- Identify Hazards
- Develop, update and implement controls
- Perform periodic inspections

Job Hazard Analysis Cycle



Sample Job Hazard Analysis Worksheet

Job Hazard Analysis Worksheet		Date:
Title of Job/Operation**:**		
Employee Name:		Job Title:
Supervisor / Analyst Name:		Department / Division:
Personal Protective Equipment Required or Recommended:		
Sequence of Basic Job Steps	**Potential Accidents or Hazards***	**Recommended Safe Job Procedures**

Job Hazard Analysis

- Performing a job hazard analysis is one of the best methods to develop safe work procedures for the tasks that need to be completed and the equipment that needs to be operated.
- The JHA can also be used to train employees in the hazards associated with task and control measures that should be practiced.

JHA Team

- A Job Hazard Analysis requires the cooperation of all parties involved which include:
  - Safety Professional
  - Engineers / Technical Advisors
  - Supervisors / Frontline Personnel responsible for making change
  - Employee / Person most familiar with job

Steps for Completing JHA's

1) Involve Employees
2) List, rank, and set priorities for hazardous jobs
3) Review accident history for the job
4) Identify the OSHA standards that apply to the job
5) Outline the steps or tasks for the job
6) Identify potential hazards or risks
7) Develop and implement hazard controls
8) Conduct periodic inspections

Involvement of Employees

- They have a unique understanding of the job, and this knowledge is invaluable for finding hazards.
- Involving employees will help minimize oversights, ensure a quality analysis.
- Get workers to “buy in” to the solutions because they will share ownership

Prioritization of JHA

- Jobs with the highest injury and illness rates
- Jobs that have the potential to cause serious injury
- Jobs in which one simple human error could cause injury
- Jobs complex enough to have written instructions
- Jobs that are new to your division / department
- Jobs that had significant changes in technology or procedures

Outline the Steps

1. Watch the employee perform the job and list each step as the worker takes it.
2. Be sure to record enough information to describe each job action without getting overly detailed.
3. Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps.
4. Review the job steps with the employee to make sure you have not omitted something.
5. Include the employee in all phases of the analysis—from reviewing the job steps and procedures to discussing uncontrolled hazards and recommended solutions.

Identifying the Hazards

- A job hazard analysis is an exercise in detective work. Your goal is to discover the following:
  - What can go wrong?
  - What are the consequences?
  - How could it arise?
  - What are other contributing factors?
  - How likely is it that the hazard will occur?

Common Hazards in the Workplace

Stressor	***Hazard Type***	***Hazard Type***	***Hazard Type***
Chemical	Corrosive	Fire Explosion	Toxic
Electrical	Shock	Short Circuit	Fire-Static
Mechanical	Moving Parts	Failure	Noise Pressure
Ergonomic	Strain	Human Error	Fatigue

Common Hazards in the Workplace

Stressor	***Hazard Type***	***Hazard Type***	***Hazard Type***
Radiation	Ionizing	Non Ionizing	
Contact	Struck By	Struck Against	Caught In
Environment	Temp.	Visibility	Weather
Misc.	Slips	Trips	Falls

Controlling the Hazards

- The order of precedence and effectiveness of hazard control is the following:
  - 1. Engineering controls.
  - 2. Administrative controls.
  - 3. Personal protective equipment.

Controlling the Hazards

- The most effective controls are engineering controls that physically change a machine or work environment to prevent employee exposure to the hazard.
- The more reliable or less likely a hazard control can be circumvented, the better.
- If this is not feasible, administrative controls may be appropriate.
- This may involve changing how employees do their jobs.

Engineering Controls

- Engineering controls could include the following:
  - Elimination/minimization of the hazard
  - Substitution of equipment or process to decrease hazard
  - Isolation of the hazard with interlocks, machine guards, blast shields, or other means; and
  - Removal or redirection of the hazard such as with local and exhaust ventilation.

Administrative Controls

- Administrative controls include the following:
  - Written operating procedures, work permits, and safe work practices;
  - Exposure time limitations (used most commonly to control heat stress and ergonomic hazards);
  - Monitoring the use of highly hazardous materials;
  - Alarms, signs, and warnings;
  - Buddy system; and training

PPE

- Personal Protective Equipment is acceptable as a control method in the following circumstances:
  - When engineering controls are not feasible or do not totally eliminate the hazard;
  - While engineering controls are being developed;
  - When safe work practices do not provide sufficient additional protection; and
  - During emergencies when engineering controls may not be feasible.

JHA Exercise

- We are going to perform an exercise on grinding metal casting.
- Based on the steps, please identify the hazards and controls.

Exercise #2-Performing a Job Hazard Analysis

Scenario: You are the Safety Manager and you have set a goal to perform a job hazard analysis of the high risk jobs in the machine shop. The grinding of iron casting has been identified as a process that needs a job hazard analysis due to the potential high risk.

You have identified the steps that are listed below the illustration and have observed the following potential hazards that may be associated with the tasks. The hazards are discussed in the following paragraphs.

1. Worker reaches into metal box to the right of the machine, grasps a 15-pound casting and carries it to grinding wheel. Worker grinds 20 to 30 castings per hour.

2. You note the casting have the potential to have sharp burs.

3. The grinder was made in Yugoslavia in 1947 (this machine will out live all of us). It has no safety guards and has an exposed power transmission device (belt and pulley).

4. Reaching, twisting, and lifting 15-pound castings from the floor could result in a muscle strain to the lower back.

Grinding Iron Castings: Job Steps

Step 1. Reach into metal box to right of machine, grasp casting, and carry to wheel.

Step 2. Push casting against wheel to grind off burr.

Step 3. Place finished casting in box to left of machine.

Job Hazard Analysis Results

Job Hazard Analysis Worksheet		Date:
Title of Job/Operation**:**		
Employee Name:		Job Title:
Supervisor / Analyst Name:		Department / Division:
Personal Protective Equipment Required or Recommended: Eye protections (safety glasses and face shield), Gloves (Cut resistant, tight fitting)		
Sequence of Basic Job Steps	**Potential Accidents or Hazards***	**Recommended Safe Job Procedures**
Worker reaches into metal box to the right of the machine, grasps a 15- pound casting and carries it to the grinding wheel. Worker grinds 20 to 30 castings per hour.	Casting have sharp burrs and edges that can cause severe lacerations.	1. Use a devise to lift castings 2. Wear cut resistant gloves that allow a good grip and fit tightly to minimize the chance that the gloves will get caught in the grinding wheel.
	Reaching, twisting and lifting 15-pound castings from the floor could result in a muscle to the lower back, shoulders or wrists.	1. Move castings from the ground and place them closer to the work zone to minimize lifting . Ideally, place them at waist height or an adjustable platform or pallet. 2. Train workers not to twist while lifting and reconfigure work station to minimize twisting during lifts.

Summary

- A Job Hazard Analysis (JHA) consists of:
  - Change analysis
  - Job Hazard Analysis (JHA)
  - Workplace inspections
  - Hazard Reporting
  - Trend Analysis
- Effective programs will result in the identification of potential and existing hazards.

Questions?