The Grainger College of Engineering
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Job Safety Analysis (JSA) or Job Hazard Analysis (JHA)

Activity, Task or Job:	
Completed by:	**Date completed:**
Group name:	**Job location:**
Other information:	

Work steps	Hazards identified for each step	Risk level	Hazard Controls/Safe Work Procedures/PPE

Work steps continued (if needed)

Work steps	Hazards identified for each step	Risk level	Hazard Controls/Safe Work Procedures/PPE

See following pages for instructions and job aids.

Instructions for writing the JSA

Select the Job to be Analyzed

Jobs that have potential to cause injuries or illnesses are good candidates for a JSA, such as those that use hazardous materials or involve hazardous processes, especially those with a known history of accidents. Ideally, one JSA should be written for every Job.

Break Down the Job into Steps

Most jobs can be described in 6-8 steps. If a job requires many steps, divide into two or more segments, each with their own JHA. Keep the steps in order, since listing out of order may cause an oversight. Describe what is being done instead of how it is done.

Identify Hazards and Estimate Risk Level

Examine each step to identify hazardous actions, conditions and potentials that can lead to an accident. Use the Energy Wheel to identify hazards. All hazards should be identified including those that are not obvious. Using the Risk Matrix, identify the Risk Level of each step by thinking about the severity of the consequence (how badly someone can get hurt) in combination with the likelihood of occurrence.

Determine Controls and Preventive Measures

Use the Hierarchy of Controls to choose the most effective method of controlling the hazard—multiple controls may better than one, especially if the Risk Level is High or Critical. If the risk level is Critical, you may want to think about changing how the job is performed to reduce the Risk Level. Be specific and list exactly what needs to be done to control the hazard.

Implement and Communicate Controls

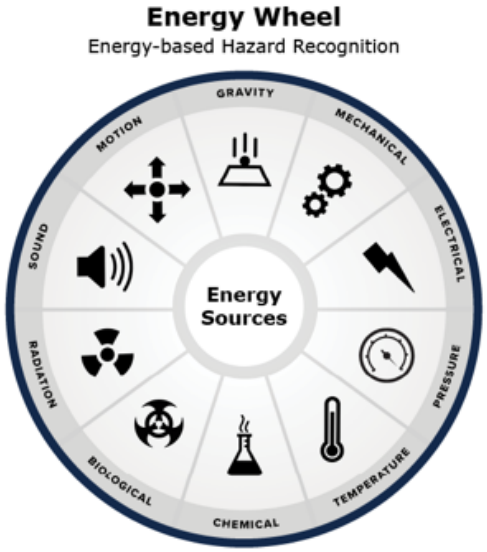
Train all personnel performing the job on the specific JSA to recognize the hazards and understand what appropriate control measures need to be taken. Make sure resources are available for implementing the controls—if the controls are not readily available, they will likely *not* be utilized.

Review and Update the JSA

The JSA should be reviewed regularly and may need to be updated whenever there is a change in the nature and circumstances of the job, for example:

- There is a change in how the job is performed (for example: different procedure, new tools or new materials)
- Personnel are new or unfamiliar with the job.
- The job will be performed in a new location or environment.

Aids to writing a JSA



Energy Sources	Examples
GRAVITY	Enables objects to fall, roofs to collapse, people to trip and fall
MECHANICAL	Rotating equipment, drive belts, conveyors, motors, compressed springs
ELECTRICAL	Power lines, transformers, static charges, lightning, wiring, batteries
PRESSURE	Piping, compressed cylinders, hoses, pneumatic, hydraulic equipment
TEMPERATURE	Ignition sources, hot or cold surfaces, steam, friction, weather
CHEMICAL	Chemical vapors, toxic compounds, combustibles, corrosives
BIOLOGICAL	Bacteria, viruses, animals, insects, human materials, contaminated food or water
RADIATION	Solar rays, microwaves, X-rays, radioactive materials, welding arcs
SOUND	Equipment noise, vibration, high-pressure release
MOTION	Vehicles, vessels, water, wind, body movement

Figure 1 Energy Wheel
Hallowell, M. R. (2021) Prof. Safety 66 (12): 27–33.

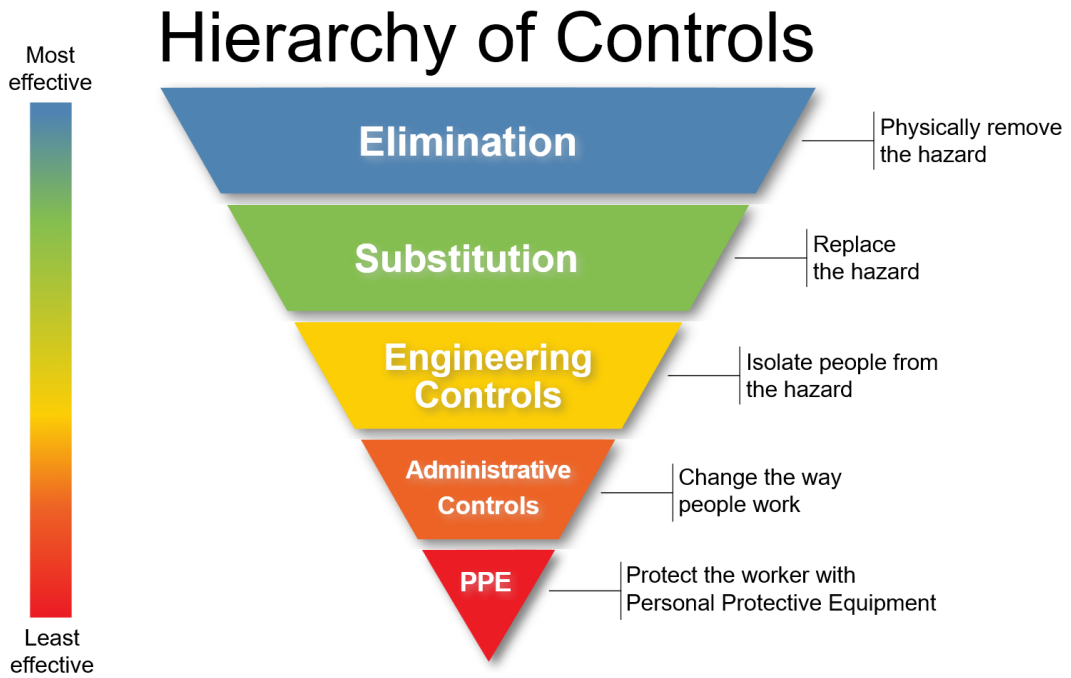


Figure 2 Hierarchy of Controls
https://www.cdc.gov/niosh/hierarchy-of-controls/about/index.html

Aids to writing a JSA (cont)

Figure 3 Probability of Occurrence
https://institute.acs.org/acs-center/lab-safety/hazard-assessment/fundamentals/risk-assessment.html

	Probability of Occurrence	
Occurrence Rating	**Percent**	**Description**
Rare	negligible	Hazard is fully contained/ Risk is not present
Unlikely	<10%	Unlikely
Possible	10-50%	Possible
Likely	50-90%	Likely
Almost Certain to Certain	>90%	Almost Certain to Certain

Figure 4 Severity of Consequence
https://institute.acs.org/acs-center/lab-safety/hazard-assessment/fundamentals/risk-assessment.html

	Impact to …				
Consequence Rating	**Personnel Safety**	**Resources**	**Work Performance**	**Property Damage**	**Reputation**
No Risk	No injuries	No impact	No delays	Minor	No impact
Minor	Minor injuries	Moderate impact	Modest delays	Moderate	Potential damage
Moderate	Moderate to life impacting injuries	Additional resources required	Significant delays	Substantial	Damaged
High	Life threatening injuries from single exposure	Institutional resources required	Major operational disruptions	Severe	Loss of confidence

Probability of Occurrence					
	(Almost) Certain	LOW	HIGH	CRITICAL	CRITICAL
	Likely	LOW	MEDIUM	HIGH	CRITICAL
	Possible	LOW	MEDIUM	HIGH	CRITICAL
	Unlikely	LOW	LOW	MEDIUM	HIGH
	Rare	LOW	LOW	LOW	MEDIUM
		No Risk	**Minor**	**Moderate**	**High**
		Severity of Consequence			

Figure 5 Risk Level
https://ehs.ucla.edu/integrated-safety-management