



Safety & Environmental

"Your Compliance Pro"

***The Safest Risk is the
One You Don't Take-
Job Hazard Analysis***

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Job Hazard Analysis

- **OSHA Requirements**
 - Identify and reduce risk
 - Hazard assessment

General Duty Clause

Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees

Job Hazard Analysis

A systematic method used to:

- **Identify risks to health and safety in the workplace**
- **Identify actions taken to reduce the risks**
- **Reduce company liability**
- **Manage process changes**
- **Generate OSHA documentation**

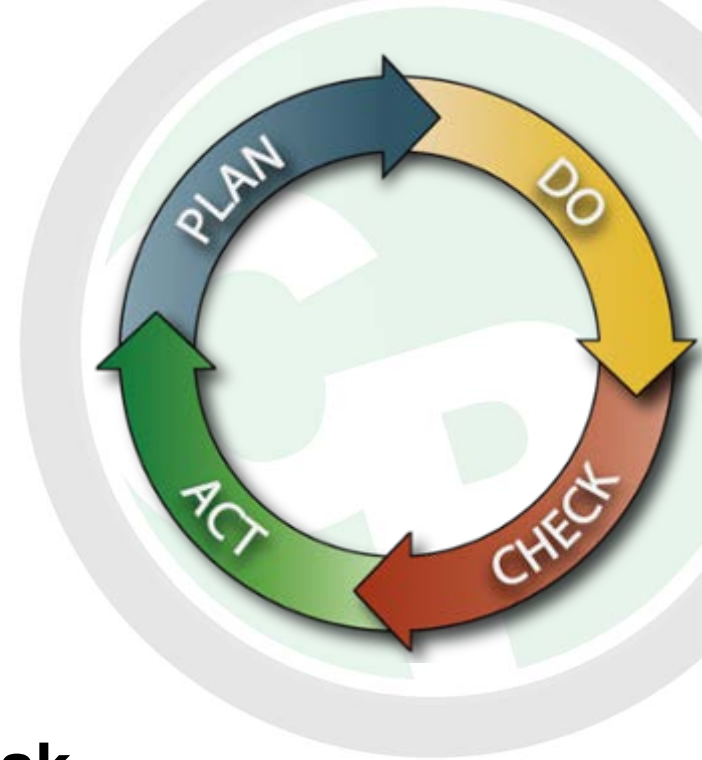


Job Hazard Analysis

Continuous improvement

- Identify risks and causes
- Develop and implement corrective actions to mitigate risk
- Review effectiveness
- Respond to changes

PLAN – DO – CHECK - ACT

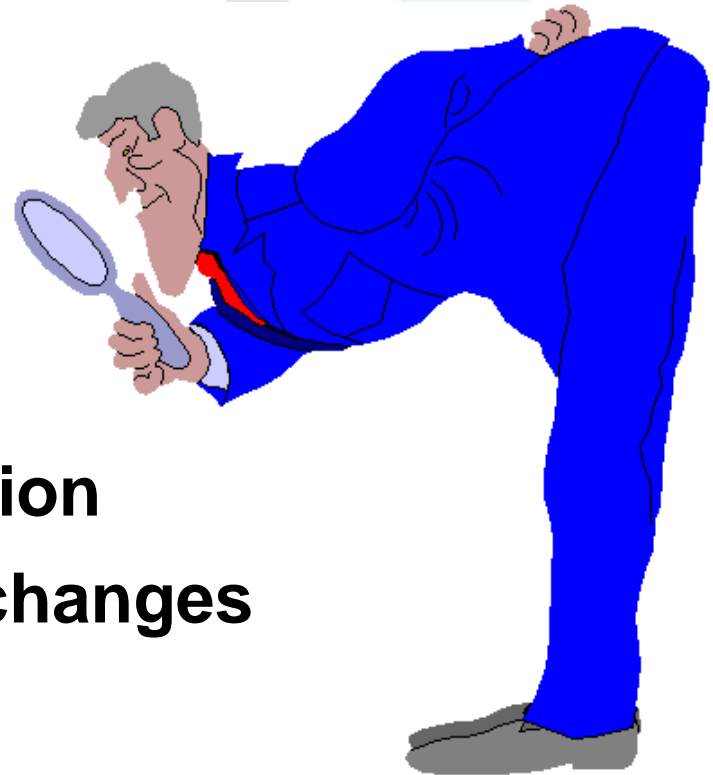


Job Hazard Analysis

- **JHA's are best performed in coordination with those most familiar with the processes.**
 - **Process/manufacturing engineers**
 - **Supervisors**
 - **Hands-on workers**
 - **Safety professionals**

JHA - Procedures

- **Documentation**
- **Process identification**
- **Process breakdown**
- **Identify those at risk**
- **Hazard identification**
- **Hazard control evaluation**
- **Determine necessary changes**
- **Training**
- **Change review**



JHA - Documentation

Document the JHA

- **Include all the information gathered**
 - Process breakdown, SOP's
 - Hazard analysis, evaluation
 - Exposure monitoring
 - Corrective actions, Engineering/Administrative Controls
 - Training
 - Review
- **Typical formats**

JHA Documentation - Analysis

**Typical
JHA
Forms**

JOB HAZARD ANALYSIS				
COMPANY		DEPARTMENT/LOCATION	OPERATOR	JOB TITLE
PROCESS DESCRIPTION:				
SEQ NO.	DESCRIPTION	POTENTIAL HAZARD (List chemicals, ref Chem Eval)	CURRENT CONTROLS	RECOMMENDATIONS
1				

ANALYSIS BY: _____ DATE: _____

JHA Documentation - Chemical

Typical JHA Forms

JHA CHEMICAL EVALUATION						
EVALUATION BY		DATE	REVIEWED BY			
SEQ NO.	CHEMICAL DESCRIPTION	QTY USED	EXPOSURE MONITORING			NOTES
			DATE	RESULT	NA	

JHA Documentation - PPE

Typical
JHA
Forms

PPE MATRIX

Location:	Eye/Face				Arm/Hand (Gloves)			Foot/Leg		Hearing Protection		Respiratory Protection			Head		Clothing							
Department:	Safety Glasses	Goggles	Face Shield	Visitor Glasses	Laser/Rad Eyewear	Corrosive	Solvents	Latex	Hotwork/Welding	Closed shoes	Steel-toed shoes	Ear plugs	Ear muffs	Dust mask	Half-face	Full-face	Other	Hard Hat	Bump Cap	Acid apron	Solvent apron	Lab coat	Other	
Process:																								

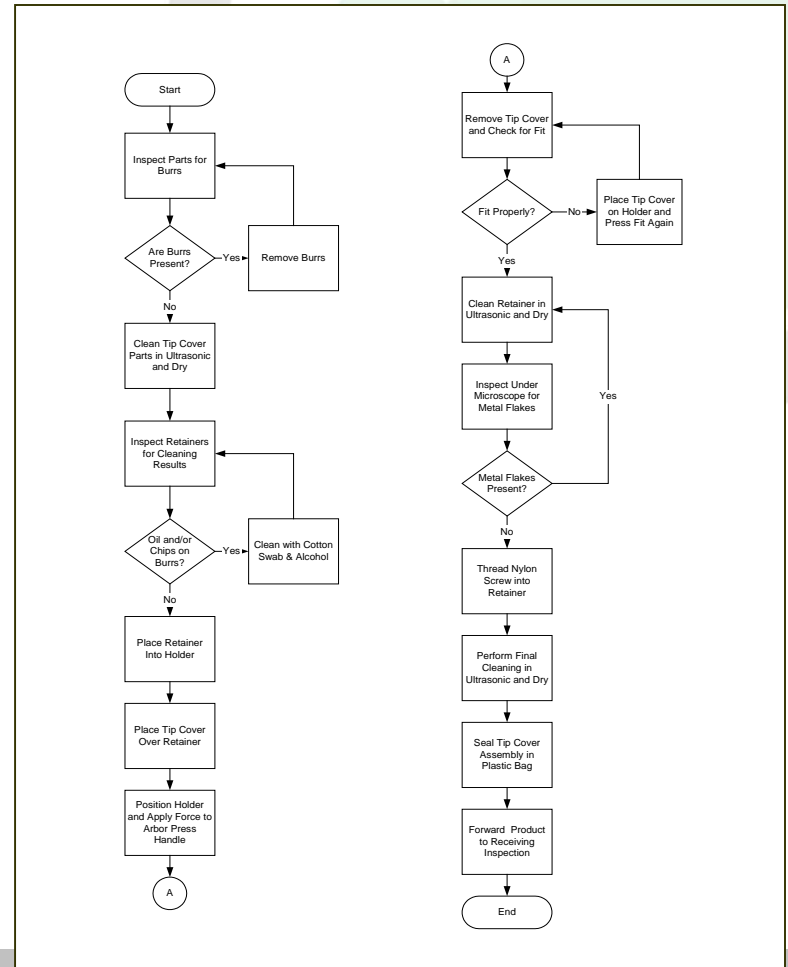
JHA - Process Breakdown

Manufacturing process breakdown

- Focus the effort by limiting the scope

Information sources:

- Process flow diagrams
- Standard Operating Procedures (SOP)



JHA - Process Breakdown

Identify individual, sequential steps and activities

- **Each step and activity will be analyzed**
- **Include related operations**
 - **Maintenance**
 - **Calibration**

JHA - Identify Those at Risk

- **Employees**
- **Contractors**
- **Janitorial/
maintenance**
- **Visitors**



JHA - Hazard Identification

- **Potential for injury, exposure**
- **Document everything**
- **Focus on hazards that pose the greatest risk**



JHA - Determine Risk Levels

Determine the level of risk:

- Evaluate the extent of a possible injury, and
- Evaluate the odds of an injury happening

*SIMPLIFIED
RISK LEVEL
ESTIMATOR*

<u>Hazard</u>	Slightly Harmful	Harmful	Extremely Harmful
<u>Probability</u>			
Highly Unlikely	Trivial Risk	Minor Risk	Moderate Risk
Unlikely	Minor Risk	Moderate Risk	Serious Risk
Likely	Moderate Risk	Serious Risk	Critical Risk

JHA - Hazard Identification

Types of Hazards:

- **Contact with**
- **Caught in, on or between, compressed**
- **Slips, trips and falls**
- **Overexertion/ergonomics**
- **Exposure to harmful substances or environments**
- **Fires and explosions**
- **Transportation**
- **Workplace violence**

JHA - Hazard Control Evaluation

For each hazard identified, determine:

- **If there is an exposure risk**
- **If existing control measures are effective**
- **If additional controls are needed**



JHA - Identify Controls

Types of controls:

- Engineering controls
- Administrative controls
and, as a last resort
- Personal protective equipment- PPE



JHA - ID/Control:

Tools and Equipment

Identification-

- Can employees be injured by physical exposure
- Hazardous energy
- Radiation, Lasers

Controls-

- Machine guards
- Equipment safeguards
- Electrical hazards
- Shielding, PPE



JHA - ID/Control:

Materials & Chemicals

Identification-

- Can employees be injured from exposure to the materials they work with?
- Exposures-
 - OSHA PEL, ACGIH TWA
 - Physical contact
 - Storage issues
- Safety Data Sheets

Controls-

- Ventilation
- Exposure monitoring
- Chemical storage
- PPE



JHA - ID/Control:

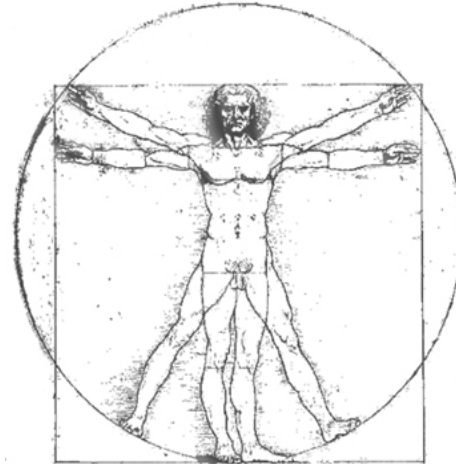
Ergonomics

Identification-

- Repetitive motion, CTS
- Lifting, material handling
- Body position, movement
- Physical stress

Controls-

- Ergonomic evaluations
- Breaks
- Proper lifting- Back safety
- Lift/transport assist devices
- Ergonomically-designed tools



JHA - ID/Control:

Emergencies, Fire Safety

Identification

- Housekeeping
- Emergency egress
- Fire potential
- Chemical spills

Controls

- Organization, housekeeping procedures & policies
- Emergency response:
 - Eyewash/safety showers
 - 1st aid supplies
 - Evacuation plans, drills
 - Fire extinguishers
 - Fire sprinkler, extinguishing systems



JHA - ID/Control:

Other factors

ID/Control

- **Lighting**
 - Adequate lighting
- **Ambient temperature**
 - Work breaks, water/fluids
- **Process temperature**
 - Heat ventilation, shielding, PPE
- **Noise exposure- Dosimetry**
 - Shielding/sound-damping, hearing protection
- **Lasers, Radiation, UV**
 - Barriers, PPE



JHA - Determine Required Actions

SIMPLIFIED RISK-BASED CONTROL PLAN

Use the Risk Level:

- **Determine if actions are:**
 - Required
 - Reasonable
 - Practical
- **Identify priorities for actions to be taken**

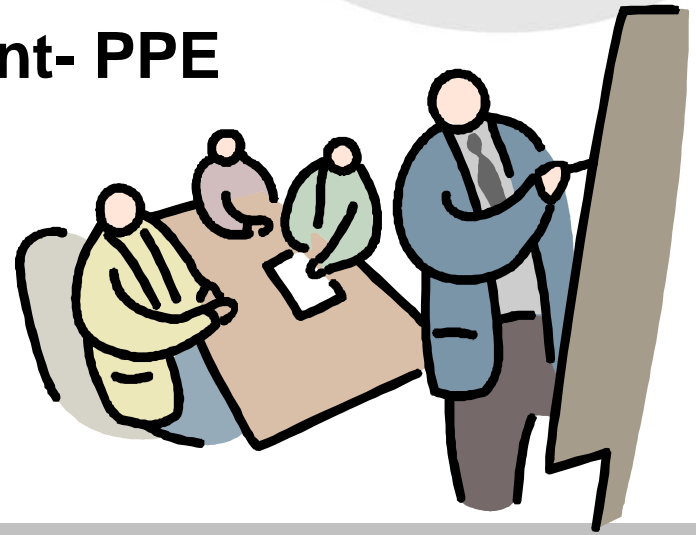
RISK LEVEL	ACTION & TIMESCALE
TRIVIAL	No action or documentation is required.
MINOR**	No additional controls are required. Consideration may be given to a more cost-effective solution or improvement that imposes no additional cost burden. Monitoring is required to ensure that controls are maintained.
MODERATE	Efforts should be made to reduce the risk, but the costs of prevention should be carefully measured and limited. Risk reduction measures should be implemented within a defined time period. *Where the moderate risk is associated with extremely harmful consequences, further assessment may be necessary to establish more precisely the likelihood of harm as a basis for determining the need for improved control measures.
SERIOUS	Operation should not be started until risk is considerably reduced. Resources may have to be allocated to reduce the risk. When the risk involves work in progress, urgent action should be taken.
CRITICAL	Work should not be started or continued until risk has been reduced. If it's not possible to reduce the risk, even with unlimited resources, work must remain <u>prohibited</u> .

**NOTE: Minor risk is defined as risk that has been reduced to the lowest level that is reasonable and practical.

JHA - Training

Provide operator training for each new control or process change:

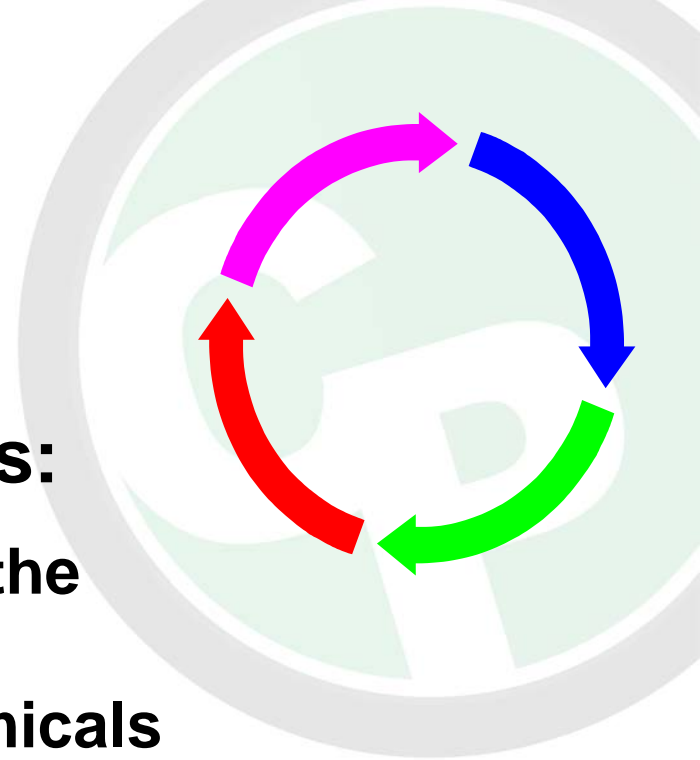
- **Engineering & Administrative controls**
- **Personal protective equipment- PPE**
- **New/transferred employees**
- **OSHA requirements**



JHA - Change Review

Review the JHA for a process:

- Whenever there is a change in the process, including changes to equipment, materials, and chemicals
- Whenever an injury results from the process
- At least annually



Job Hazard Analysis

An effective JHA policy can help reduce:

- **Employee injuries**
- **Worker's compensation costs**
- **Production downtime**
- **Company liabilities.**

A well-documented Job Hazard Analysis will help maintain OSHA compliance by meeting the OSHA requirement for hazard assessment and providing your employees with a safer workplace.



Safety & Environmental

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**For assistance with your OSHA or EPA compliance programs,
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- Chuck Paulausky is the Principle Consultant and President of CP Safety & Environmental. He is a Certified Hazardous Materials Manager (CHMM) and OSHA/Environmental Compliance trainer.
- Chuck has provided EHS management services since 1989 for facilities across the US and in Europe and Asia. He has also published articles in trade and business magazines, as well as webinars, podcasts and seminars on various EHS topics.
- He is a past member of the Board of Directors of the AHMP Thunderbird Chapter, is an AHMP Champion of Excellence Award winner, and current member of EPAZ and ASSE. Chuck has been a member of the Gatekeeper Regulatory Roundup Planning Committee and annual presenter since its inception in 2005. Chuck is active in several other professional and business organizations, including past Chairman of the Chandler Chamber of Commerce Safety Committee.
- CP Safety & Environmental, LLC is a full-service Environmental, Health, and Safety consulting firm providing EPA & OSHA compliance support, expert witness, and worker's compensation loss control/risk assessment services.