

Risk Assessments

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Background

- ▶ What is a Risk Assessment?
- ▶ A safety risk assessment is a **systematic procedure for identifying and managing hazards**. It encompasses thorough examination of the entire work environment, processes and equipment to determine any hazard to the health of the employees in the short or long term and implementing remedies
- ▶ “Entire Work Environment”- Both for regular operations, tooling and maintenance.
- ▶ Step by Step review of the “line” or “machine”.
- ▶ Rank by hazard, but also tracking improvements. Organizational piece.
- ▶ Quantitative, as it will give us true data.

Data: Qualitative vs Quantitative

- ▶ Qualitative: Going off personal accounts, experiences and general knowledge.
- ▶ Example: Changing out the blades on a grinder is dangerous, I heard someone got cut doing it before and received several stitches, plus, just look at how sharp those blades are.
- ▶ Quantitative: Relying on real data. Assigning numbers to frequency, severity and probability.
- ▶ Example: Changing out the blades on a grinder is dangerous, that task scores about 300, which is considered high risk.

Data: Qualitative vs Quantitative

- ▶ Both types of Risk Assessments exist. Lots of similarities as they break the job or process and identify risk. Rotating parts with easy access by hand? Guard it!
- ▶ The Quantitative version (the form we will review) will give us data to determine which tasks pose the highest risk.
- ▶ There are many advantages to putting a number or score associated with risks identified.
- ▶ However, when starting this project, qualitative can be used to determine where to start (what are you top 5 riskiest processes/machines).

Quantitative Advantage

- ▶ If you were to assess 20 processes at your site, and come up with 1,000 items that are “high risk”, where do you start?
- ▶ It often costs money to change a process, add engineering controls or upgrade guards with lights curtains, etc. Where do we spend the money?
- ▶ Once we make an improvement to a process or task, how do we know if we reduced the risk? Or by how much?

Risk Assessment- section 1

Title	Husky Injection Molding Machine	Version	1	Site		Reference		Date	
Activity	Husky Injection Molding Machine Line #1								
Persons at Risk	Operator and Packer- Tooling- Maintenance								
Cell / Area	#1								
Assessment Date		Review Date		Associated SOP(s)	Packing Cups				
Identified Hazards	0	Risk Rating	0	Residual Risk Rating	0				
Assessed By	Josh Allen			Signature					
In Conjunction With	Operations			Signature					
In Conjunction With	Maintenance			Signature					
In Conjunction With	Third Party employee			Signature					
In Conjunction With	EHS			Signature					
In Conjunction With	Other			Signature					

Risk Assessment- section 2

- ▶ Review potential hazards to be identified on form.
- ▶ Besides training potential assessors, review guide that acts as a cheat sheet to help determine if certain hazards exist.
- ▶ Not everyone involved is a safety professional, but their knowledge of the machine and process is just as important.
- ▶ Depending on the equipment or process, some sections may not apply, so time can be saved by crossing them out.

Hazard list filled out

Title	Regular Operation	Version	1	Site	0	Reference	0	Date	
NUMBER	HAZARD	HAZARD OUTCOME / POTENTIAL CONSEQUENCES	PRESENT CONTROLS	WITH PRESENT CONTROLS				CORRECTIVE ACTION IF REQUIRED	Sev
				Severity	Exposure	Prob.	Total and Risk Class		
1	Sharp edges on bottom of machine	Cut on hand or arm	Nothing			0.5	0		
2	Space in guarding where employee hand can touch rotating part	Possible amputation of hand	Some guarding				0		

As a team, list identified hazards, outcomes and what is currently there for controls.

The present controls will put a dent in the total risk score, especially if the control is sufficient.

With no controls, you have a better chance of a higher risk score.

How to score



- ▶ Severity x Exposure x Probability = total risk
- ▶ Next few slides will show definitions, and scoring numbers associated with those definitions
- ▶ These definitions and number can be customized to meet your type of industry or site.
- ▶ Typically filled out in a conf room, pictures on the screen, videos as well.

Scoring- Severity

GRADE OF CONSEQUENCE SEVERITY		VALUE
a	Catastrophic; FATALITY	40
b	Disastrous; PERM DISABILITY	15
c	Very Serious; LTA	7
d	Serious; RECORDABLE	3
e	Important; FIRST AID	1

Values and definitions can be tweaked to fit your company. Top severity can be “multiple fatalities”.

Can even trim down to 4 grades (this is true with Frequency and Probability).

Scoring- Frequency of exposure

FREQUENCY OF EXPOSURE		VALUE
a	Continuous (Many Times per Day)	10
b	Frequent (Approximately Once per Day)	6
c	Occasional (Once per Week)	3
d	Unusual (Monthly)	2
e	Rare (A few times per year)	1
f	Very Rare (Annually)	0.5
g	The Hazard Never Occurs	0

This is where the team approach is helpful- operators, packers would be able to determine how frequently they are exposed to the areas.

This isn't an exact science, but having the group agree and be fair and consistent is key.

Scoring- Probability

PROBABILITY		VALUE
a	Almost Certain (Probable and Expected)	10
b	Highly Possible (it is entirely possible, would not be surprising, it has a probability of 50%)	6
c	Possible (A 'rare' occurrence but possible, and known to have happened)	3
d	Maybe Possible (would be a very strange coincidence but is known to have occurred)	1
e	Remote (Extremely rare. It has not happened so far)	0.5
f	Very Remote (Practically Impossible, 'one in a million' occurrence)	0.2
g	Almost impossible (Virtually impossible, close to impossible)	0.1

This is all part of the discussion, can revisit out in the work area if torn between two grades.

Internal action plan

MAGNITUDE OF RISK	CLASSIFICATION OF THE RISK	URGENCY OF CORRECTIVE MEASURES
Greater than 400	Very high risk	Cease the activity immediately and apply corrective actions immediately
Between 201 and 400	High risk	Apply corrective actions immediately
Between 71 and 200	Substantial risk	Urgent correction necessary
Between 20 and 70	Possible risk	No emergency but the risk must be corrected
Less than 20	Acceptable risk	Likely that not further corrective actions are required

These numbers would dictate due dates on your internal action plans, or immediate actions you may need to take.

Even interim actions to knock the risk down a little bit.

Hazard list with scoring

NUMBER	HAZARD	HAZARD OUTCOME / POTENTIAL CONSEQUENCES	PRESENT CONTROLS	WITH PRESENT CONTROLS				CORRECTIVE ACTION IF REQUIRED	WITH PROPOSED CONTROLS			
				Severity	Exposure	Prob.	Total and Risk Class		Severity	Exposure	Prob.	Total and Risk Class
1	Sharp edges on bottom of machine	Cut on hand or arm	Nothing	3	10	6	180	Smooth out edges or guard with foam	3	10	0.2	6
2	Space in guarding where employee hand can touch rotating part	Possible amputation of hand	Some guarding	15	3	6	270	Fabricate new guard or add to existing	15	3	0.2	9

Total risk and Class score is calculated. As you can see with CRATs you brought down the prob and probably severity for 1, and probability for 2.

Corrective actions added if no present controls or added if the score with the present controls are too high.

Action Plan- the follow up

ACTION PLAN

ATTENDEES		ACTIVITY	Husky Injection Molding Machine Line #1	DATE	
APOLOGIES		CELL / AREA	#1	NEXT MEETING	
ACTIONS IDENTIFIED	2	ACTIONS STARTED	0	TOTAL COMPLETED ACTIONS	0

NUMBER	HAZARD	CONSEQUENCE	ISSUE	ACTION	WHEN	WHO	STATUS	WEEK No.
1	Sharp edges on bottom of machine	Employee can get cut on hand or arm.	Sharp edges exist on the machine.	Smooth out edges, guard with foam.	1-Oct	Bob- Maint	Closed	
2	Space in guarding where employee hand can touch rotating part	Possible amputation of hand	Guard is inadequate, it doesn't prevent employee from coming in contact with moving parts.	Fabricate new guard, or add to existing.	22-Oct	Bob- Maint	Open	

Repeat same process for Tooling & Maintenance

- ▶ We talked about the “3 pronged” approach. Tooling replaces the mold in the machine. Maintenance repairs all hoses, lines, changes oils, and any other repairs that are needed.
- ▶ Different hazards operating the machine vs repairs and tooling.
- ▶ Take the same form and review Tooling change process with Tooling department. They use equipment such as forklifts and cranes, that operations wouldn't use.
- ▶ Maintenance may have to weld, or use other tools not used by Operations or Tooling.

Review

- ▶ Its important that the Action plan is reviewed on a regular basis. This is what closes the loop. We want to identify the risk, then mitigate the risk.
- ▶ If multiple risk assessments are being worked on at the same time, we can take the highest risk line items and prioritize those.
- ▶ The EHS professional is usually the point person to drive the process, with support of upper management. Set up Action Plan review meetings, organize the line items by hazard, rescore after completion of line items, schedule annual review of lines or processes, review risk assessments after injuries or near misses.

Final Thoughts

- ▶ Injury trends can tell some of the story as far as where risks may be.
- ▶ Catastrophic or costly injuries could be few and far between but having that exposure present in the workplace could set us up for failure at some point. Its just a matter of when.
- ▶ No matter how new or old the business is, its worth performing these assessments to help identify the top risks.



Questions?

