

Annex 4 HEA Example

Operation: Clearing a blockage at top of baler hopper

Analyst:

Date:

HUMAN FACTORS ANALYSIS OF CURRENT SITUATION				ADDITIONAL MEASURES NEEDED TO DEAL WITH HUMAN FACTORS ISSUES		NOTES
Task or task step (description)	Likely human failure	Potential consequences of human failure	Existing human error control measures	To prevent the human failure	To reduce the consequences or improve the recovery potential	Comments, references, questions etc
Plan 0	P2 – accidentally omit stages of plan	Machine not isolated; access via conveyor; increased likelihood of fall leading to fatal accident	System of work; Supervision; Training. Safetech System – detects belt worn by operators	Competency assurance programme; Signage – “no access to hopper via conveyor”; Poster campaign/tool box talk re dangers of accessing hopper via conveyor	Investigate putting physical barrier across conveyor to prevent easy access when conveyor stationery – e.g. gate that drops across bottom of conveyor when conveyor stopped.	Any permanent physical barrier needs to allow materials to travel up conveyor or will be defeated.
Plan 0	P3 – deliberate failure to follow procedure	Machine not isolated; access via conveyor; increased likelihood of fall leading to fatal accident	System of work; Supervision; Training.	Competency assurance programme; Signage – “no access to hopper via conveyor”; Poster campaign/tool box talk re dangers of accessing hopper via conveyor	Investigate putting physical barrier across conveyor to prevent easy access when conveyor stationery – e.g. gate that drops across bottom of conveyor when conveyor stopped.	Potential to override Safetech system or remove belt for deliberate violation.
1	A11 – don't observe blockage in timely fashion. R1 don't notice	Large amount material builds up above blockage increasing difficulty of removing items		Increase visibility within hopper e.g. insert viewing pane down side of hopper; Investigate sensors to detect build up of materials and	Integrate sensor with split conveyor belt system so that horizontal belt at loading point is stopped when too much material is	Sensors may not be feasible/may not exist and this requires further investigation.

HUMAN FACTORS ANALYSIS OF CURRENT SITUATION				ADDITIONAL MEASURES NEEDED TO DEAL WITH HUMAN FACTORS ISSUES		NOTES
Task or task step (description)	Likely human failure	Potential consequences of human failure	Existing human error control measures	To prevent the human failure	To reduce the consequences or improve the recovery potential	Comments, references, questions etc
	blockage.	– incd likelihood of procedural violation and need to clear blockage from top of conveyor		generates alarm.	detected at top of hopper.	
Plan 2	P1 Forget to make baler safe.	Potential that fall into hopper will result in fatal accident	System of work; Supervision; Training.		Install Castell captive key system to ladder access preventing access without first isolating machine.	Noise and movement of conveyor make this unlikely.
Plan 2	I4 believe colleague has made baler safe.	Potential that fall into hopper will result in fatal accident	System of work; Supervision; Training. ? May notice padlock still on lock-off point.	Test that machine is correctly isolated by pressing start button – relocate controls to one geographical location may increase likelihood that people will test isolation.	Install Castell captive key system to ladder access preventing access without first isolating machine.	Noise and movement of conveyor make this unlikely.
Plan 2	P3 – deliberate failure to follow procedure	Machine not isolated; increased likelihood of fall leading to fatal accident	System of work; Supervision; Training.		Install Castell captive key system to ladder access preventing access without first isolating machine.	