Risk Management Guide

Contents

1. Purpose

This Guide explains how to identify workplace hazards, determine their significance, and apply controls to mitigate and manage the risk.

Workplace hazards could include (but are not limited to):

A. Fire
B. Short circuit in electric installations
C. Structural defects in a building
D. Repetitive motions
E. Chemical agents
F. Dust
G. Noise
H. Extreme heat or cold
I. Micro-biological agents

The Risk Assessment Template (See **Appendix 1**) along with this Guide outline assessment procedures to identify exposure levels, determine the level of harm, and mitigate the risks.

This Guideline can be referred to by the facilities to draft their own risk assessment and by the auditors to review a facility's risk assessment document, assessing the effectiveness of the risk assessment and control measures.

2. Responsibility

The overall responsibility for completing the risk assessment and ensuring required corrective actions shall be entrusted with a competent person who possesses relevant education and experience in the risk assessment practice.

The risk assessment exercise shall be conducted by a team and not by any individual. It is recommended to have at least the health and safety expert, process owners, and worker's representative(s) on the team. WRAP also recommends the risk assessment team consult with the process workers, as they are required to refer to the risk control measures.

The joint International Labour Organization/World Health Organization (ILO/WHO) Committee on Occupational Health (1950) emphasizes the importance of consulting with process workers. As per the definition adopted by this committee, occupational health is the adaption of work to man and of each man to his job. It includes the following components:

A. Promotion and maintenance of the highest degree of physical, mental, and social well-being of workers in all occupations
B. Prevention among workers of departures of health caused by their working conditions
C. Protection of workers in their employment from risks resulting from factors adverse to health
D. Placing and maintenance of a worker in an occupational environment adapted to his physiological and psychological equipment

3. Definitions

3.1 Risk Assessment

The risk assessment is a systematic and comprehensive overview of occupational health hazards and hazardous environments encountered in the industry. It is a methodical tool to ensure a safe and healthy working environment at the facility.

A. It is important for the facility to make sure that the risk assessment covers all process activities in a complete, correct, and effective manner.
B. The term ‘risk assessment’ is better known as ‘Hazard Identification and Risk Assessment’ (HIRA).

3.2 Process

A process is a sequence of activities conducted with inputs such as man, machine, material, and method to obtain an output.

Example: *Cutting cannot be considered as a single process because it is a combination of several sub-processes, such as:*

A. Layering or spreading
B. Putting of weights
C. Straightening of fabric
D. Marking the patterns
E. The use of cutting machine for final cutting

There are several inputs at every stage, such as the:

A. Cutting table
B. Cutting machine
C. Fabric rolls
D. Power
E. Workers

The overall process is carried out in a prescribed manner to obtain cut pieces ready to be stitched.

The cutting process is completed in several activities. Workers layer the fabric, spread the fabric rolls on the cutting table by moving across the table, and use weights to keep the layered fabric straight. While moving there could be several hazards, which can be determined by speaking to the workers and by observing the entire process.

3.3 Hazard

A hazard is anything that has potential to harm a worker.

***Examples**:*

A. *Loose wires on floor (someone may trip over them)*
B. *Overhead fixtures (which can fall and result in injuries)*
C. *Hot surfaces*

3.4 Harm

Harm is a physical injury or illness caused to the worker due to their exposure to a hazard.

***Example:** If someone trips over loose wires on the floor, it may cause a physical injury. That injury is the harm.*

3.5 Risk

The probability, high or low, that any hazard will cause somebody harm. It could be very probable if the hazard relates to an ongoing activity, or it could be improbable if it relates to a non-routine activity. It is recommended to quantify the risk in numbers.

Example:

A. ***Most likely** = 3*
B. ***Likely** = 2*
C. ***Unlikely** = 1*

***Example:** If someone trips over loose wires on the floor, it may cause an injury. The loose wires are the hazard. The risk is the probability of someone tripping over the loose wires.*

3.6 Severity

Severity is measured as the extent of possible harm. The severity of the harm caused depends on the exposure level. Like risk, it is necessary to quantify the severity out of 3 based on its significance. It is recommended to estimate the maximum harm that can be caused by a hazard.

Example: *The harm could be:*

A. *Loss of life*
B. *Loss of a body part*

If the highest risk for any injury is fatality, that may be rated 3. The severity can be reduced to 2 or 1 based on the significance of the harm. The harm may result in hospitalization of a worker, or it could require first aid attention taken care of in-house with some rest time for the worker.

3.7 Risk Rating

The risk rating is a product of the risk (probability) of a work-related hazard and the severity of the harm caused to the worker.

Example: *If the risk (R) due to a hazard is 3 and the severity (S) of the risk due to the same hazard is also 3, then the risk rating is 3x3 (RxS) = 9.*

3.8 Controls

Controls are the actions taken to minimize the effect of a hazard and corresponding risk on workers' health and safety. It is recommended that the control applied to the hazard eliminates the hazard or reduces its effect, therefore reducing the risk. If the controls are applied only to the risks, then the hazards remain the same and only the severity is reduced.

3.9 Occupational Disease

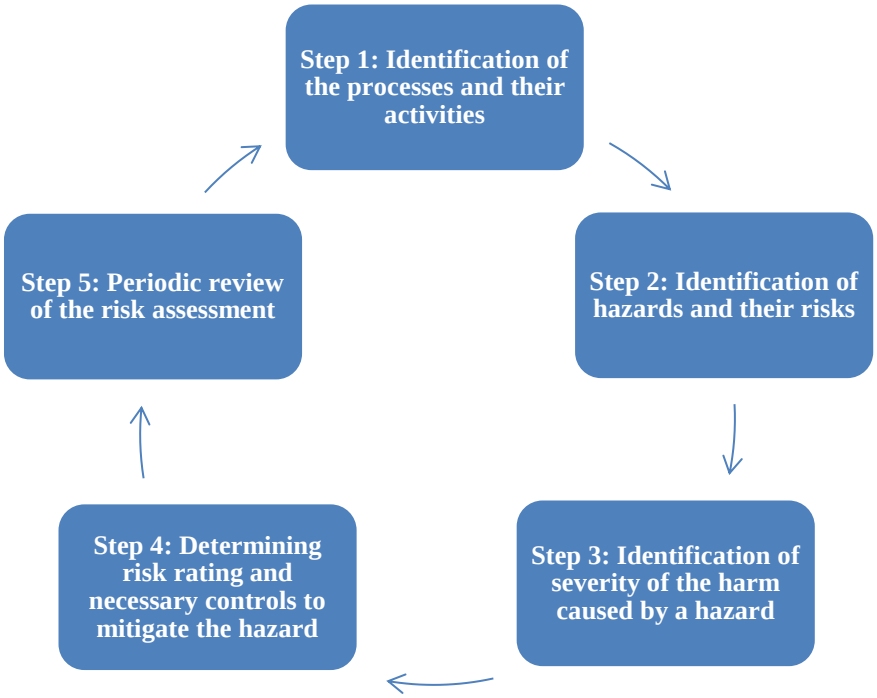
An occupational disease is any illness associated with industry occupation. Such diseases may result from a variety of factors that are present in the work environment or encountered while employed, such as biological, chemical, physical, or psychological.

Examples:

A. *A lung disease caused primarily by inhaling hemp, flax, and cotton particles (medically known as Byssinosis)*
    a. *Sometimes referred to as brown lung disease*
    b. *It is a form of occupational asthma*
B. *Repetitive strain injury – caused by over straining the hand during the stitching process*

Occupational diseases are normally preventable. The control of health hazards decreases the occurrence of work-related injuries, accidents, and diseases. Thus, the promotion and maintenance of a high degree of physical, mental, and social well-being of workers is one of the principle objectives of the WRAP certification program.

4. Five Step Risk Assessment Process



4.1 Step 1: Identification of the processes and their activities

It is necessary to ensure that all the processes are listed before you proceed with a risk assessment for your facility. The list of processes must include all production processes, such as:

A. Cutting
B. Storing
C. Finishing
D. Stitching
E. Packing
F. Loading

It must also include all non-production processes, such as:

A. Diesel Generator
B. Effluent Treatment Plant (ETP)
C. Boiler
D. Compressors
E. Maintenance
F. Canteen
G. Nursery (Creche)
H. Workers' transportation
I. Lifts

Common error: *In many cases, auditors observe that not all processes are included in a facility's risk assessment.*

Tip: *Before beginning the risk assessment, a thorough site tour must be done by the responsible team and all processes must be written down. Workers may also be consulted at this stage to ensure that no process is missed.*

Once all the processes are identified, the responsible team must write down the activities performed in each process in a sequential manner – the output of a first process becomes the input for the second process.

For more details, please refer to the Risk Assessment Template (See **Appendix 1**) where a layering process is explained with its logically related sequential activities.

4.2 Step 2: Identification of hazards and their risk

This is the qualitative part of the assessment. It requires a thorough analysis of the listed processes to identify the related hazards.

Please note that there could be more than one hazard in one process.

The hazards must be identified based on interviews with the workers and by observing the process within the working environment. Past occurrences may also be referred to here.

Exhaust fans for better ventilation

Example: *Proper illumination and ventilation of the workplace is an important factor in overall process output. Workplace-related hazards must be correctly identified in the template directly relating to its activity. If there is a process which generates a large amount of heat, working in the hot environment becomes a hazard to the worker.*

Each hazard should be quantified in terms of its risk (probability) of occurrence. The responsible team can develop a quantification mechanism based on their own understanding, or they may use the mechanism given in the Risk Assessment Template (See **Appendix 1**).

Once the risk is determined, it does not remain the same forever. It changes based on several factors, such as changes of any inputs (worker, machine, method, lack of training, etc.) at any later stage.

4.3 Step 3: Identification of severity of the harm caused by a hazard

After determining the hazards and their risk, the next step is to identify the severity of harm caused to the workers by each hazard.

The severity of the harm to the workers must be determined based on past occurrences of injuries, or an accident at your own or similar workplaces. Be proactive in identifying the severity, even if an injury has not yet occurred at your workplace.

The severity of the harm must be quantified in the risk assessment. The responsible team can develop a quantification mechanism based on their own understanding, or they may use the mechanism given in the Risk Assessment Template (See **Appendix 1**). Always determine the most extreme severity for each hazard.

Example: *Tripping over loose wires lying at the floor may cause no harm in general. However, during the risk assessment you must think of the maximum harm that may occur to a worker if they fall. Accordingly, the severity must be decided and entered in the template. It may so happen that a female employee is pregnant, and she trips onto the floor.*

As mentioned for risk, once severity is determined it does not remain the same forever. It changes on based on several other factors.

4.4 Step 4: Determining risk rating and necessary controls to mitigate the hazard

Accordingly, identify the responsible persons and related records to prepare for determining the control.

This is the most important step of the risk assessment.

There are two benefits of determining the risk rating:

1. You can quantify each hazard and prioritize your actions based on the risk rating.
    a. The hazards with higher risk ratings are more important to mitigate than the hazards with lower risk ratings.
2. At any later stage, the facility can statistically compare the significance of the hazard and revise the controls and decisions made during review.

Example: *If the risk rating of a hazard is 9, and during review of the risk assessment the risk rating stays at 9, then the placed controls are either incorrect or inappropriate and the controls must be revised. However, if during review the risk rating reduces to 6, then the placed controls are effective.*

After calculating the risk rating, the next step is to identify the controls. It is recommended that the controls are applied in such a way that they mitigate the hazard.

There are three types of sequential controls, identified below:

1. **Engineering controls –** These controls use technology to either permanently eliminate a hazard or substitute it with less harmful hazard.
    a. Targeting the hazard reduces its risk, so the hazard becomes less harmful and the risk rating is reduced as well.
    b. ***Example:*** *Emission of cotton dust during stitching process is a hazard and the risk to the workers is an occupational disease like byssinosis.*
    c. ***Common errors:*** *The control most facilities would apply is to provide dust masks to the stitching workers.*
        i. *Does this reduce the amount of cotton dust emissions? NO, because the control was applied to the severity rather than the hazard.*
    d. ***Tips:*** *After determining the risk rating, first think of an engineering control that can be applied to the hazard. In the above example, a better control could be installing a dust extraction system at the stitching process. Similarly, during the layering process, a better control could be installing an automatic spreader, so workers are not moving.*
2. **Administrative controls –** Controlling and mitigating a hazard through monitoring and trainings.
    a. If an engineering control is not feasible, then the next control to apply is administrative control.
        i. Even when an engineering control is applied, an administrative control is needed.
    b. Related records must be prepared, and responsible people must be assigned for the controls.
    c. ***Example:*** *When an automatic spreader or an automatic dust extraction system is installed, you must ensure that it always functions well. Therefore, periodic monitoring (maintenance) of the control is required and proper trainings must be given to all workers working at the process.*

3. **Other controls –** A control that is applied if there is no possible engineering or administrative control, and only the severity can be mitigated.
    a. ***Example:*** *A facility may provide personnel protective equipment (PPE), creating a barrier between workers and the hazards.*
        i. *In the previous case of dust emissions at the stitching process, providing dust masks to the workers is the last level of control. The mask serves as a barrier between the dust and the worker.*

Over-lock operator is being used dust mask during her operation

    b. Remember that there may be workers who are not involved in the stitching process but work at the same workplace, for a shorter or a longer period. The dust hazard is equally affecting their health. Therefore, all those who are exposed to such hazards must be given the necessary PPE.
    c. In any type of control, the responsible team must identify the types of records, their frequency of preparation, and define the responsible person.

4.5 Step 5: Periodic review of the risk assessment

After completing the first four steps, the initial risk assessment document is completed. This document must be circulated to all concerned personnel, which may include:

A. Facility Management
B. Maintenance Staff
C. Health & Safety Staff
D. Process Owners

Trainings on the risk assessment must be provided to all workers. Training plans can be reviewed, and necessary trainings may be added with target workforce and frequency, as mentioned in the controls. Periodic and updated training must include all new workers.

Common error: *Often, most facilities have a defined and set frequency to review the risk assessment (e.g., every three or every six months), which is not completely correct. Sometimes it is observed that the review of the risk assessment is done at defined intervals and other than the review date, nothing is changed in the document. These types of practices must be immediately avoided.*

The risk assessment is a dynamic document that must be revisited often. The risk assessment must be reviewed when:

A. There is any minor or major injury at the workplace.
    a. An injury can happen if the respective hazard is either missed in the assessment or if the defined controls are ineffective.
    b. In each case, the responsible team must review the risk assessment and add the missing information.
B. There is a change in any process.
    a. A change can occur for several reasons:
        i. Change in a production technique
        ii. Change of the machine
        iii. Change of method
    b. The change could be an effect of previously applied controls on the existing hazard.
        i. ***Example:*** *Installing an automatic spreader at the layering process eliminates the workers' movement, but at the same time may have its own different hazards.*
C. There is a change in the legal framework.
    a. The risk assessment must be reviewed based on enforcement of any new applicable legal requirement.
    b. ***Example:*** *After the tragic building collapse of a facility, the government enacted a new legal requirement for facility buildings to obtain a structural safety certificate.*
    c. ***Example:*** *After a long non-working period at a facility, a boiler exploded when the facility re-opened. It was found that the boiler was operated by an unqualified worker. After this incident, the government enacted a new law of boiler operator's competence.*

Review of the risk assessment will have an impact on the risk of existing hazards, will identify a new hazard and its risk, or will have an impact on the severity.

Whatever the case may be, the risk rating will change and so will the controls.

[redacted] This first aid kit was insufficiently supplied with medical items

Example: *During the audit, it is observed that the first aid box content is not adequate. The reason is that there have been cases of minor injuries at the workplace. It is expected that the same must be reflected in the risk assessment document, with change to the hazards, risks, and severities. Accordingly, new controls must be defined and implemented.*

Appendix 1: Risk Assessment Template

[Risk Assessment Template on the WRAP website]

STEP 1		STEP 2		STEP 3			STEP 4		STEP 5
Process	Activity	Hazard	Risk (R)	Harm	Severity (S)	Risk Rating (RxS)	Controls	Records	Responsibility
Layering or Spreading	Moving across the tables	Sharp edges of tables	3	Bodily injury - cuts	2	6	1. Installation of an automatic spreader. 2. Training for cutting workers and defining work instruction. 3. Monitoring and maintenance of the spreader. 4. Cushioning the sides of the cutting tables.	1. Training records. 2. Work instruction. 3. Maintenance records of the spreader. 4. Monitoring of the side table record.	
		Loose wires at the floor	3	Bodily injury - fall	2	9			
	Handling weights for fabric pressing	Weight that could on a foot	3	Bodily injury - foot fracture	3	9			
	Bending over to straighten the fabric	Ergonomical hazard	2	Back pain	2	4			
Cutting	Using the electric cutting machine	Faulty connections that cause electrocution	3	Death	3	9			
		Sharp blades	3	Loss of body part	3	9			
Security	Handling guns	Accidentally firing the gun	1	Death	3	3			

CONTINOUS REVIEW AND UPDATE

Risk	Severity	Rating
Very Likely/Ongoing or daily process	Death/Loss of body part	3
Likely/once in a week	Absenteeism from work/Hospitalization	2
Unlikely/rare or non-routine event	Minor first aid/Rest at workplace	1

Types of Controls	Objective	Details
Engineering	Elimination of hazard or substitution of process	Use of technology to either remove the hazard completely or substitute it with lower risk hazard, or to create a barrier between the worker and the hazard.
Administrative (to be applied if engineering control is not feasible)	Reduction of severity of hazards that cannot be eliminated	Provide trainings for workers exposed to hazards so that they carry out the activity safely. Subsquently, monitor the activity on regular basis.
Other (to be applied if engineering and administrative controls are not sufficient)	Protection when hazard cannot be reduced any further	Provide appropriate, adequate, and conditionally-monitored Personal Protective Equipment (PPE) to workers directly and indirectly exposed to a hazard.