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LEARNER GUIDE

RIIRIS201D
Conduct local risk control

Learner Name

skills DMC
DRILLING • MINING • QUARRYING • CIVIL INFRASTRUCTURE

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Contents

Unit of Competency

RIIRIS201D - Conduct local risk control

Application

This unit covers the conducting of local risk control in resources and infrastructure industries. It includes identifying hazards; assessing risk and identifying unacceptable risk; identifying, assessing and implementing risk treatments; and completing records and reports.

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency	*Performance Criteria describe the required performance needed to demonstrate achievement of the element.*
1. Plan and prepare for risk control	1.1. Access, interpret and apply risk management documentation and ensure the work activity is compliant
	1.2. Inspect work area conditions to identify potential hazards
	1.3. Apply risk management procedures to deal with recognised hazards
	1.4. Recognise the type and scope of unresolved hazards and their likely impact
2. Assess and identify unacceptable risk	2.1. Assess and determine consequence of an event
	2.2. Consider and determine likelihood of the event
	2.3. Identify criteria for the acceptability/unacceptability of the risk
	2.4. Assess risk against criteria to identify if it warrants 'unacceptable risk' status and action
	2.5. Effectively communicate and clarify the decision to others
3. Identify, assess and implement risk treatments	3.1. Identify and consider all possible risk treatment options
	3.2. Identify options by preliminary analysis and consideration of options
	3.3. Analyse options, including resource requirements
	3.4. Select most appropriate and effective course of action
	3.5. Plan and prepare the course of action in detail and acquire/ obtain required resources and approval
	3.6. Implement the approved risk treatment
	3.7. Review risk management processes
4. Complete records and reports	4.1. Effectively communicate accurate information to others on the course of action and implementation
	4.2. Complete written records and reports for hazards and actions from personal risk assessment

Unit Descriptor

This unit covers the conducting of local risk control in the resources and infrastructure industries. It includes identifying hazards; assessing risk and identifying unacceptable risk; identifying, assessing and implementing risk treatments; and completing records and reports.

Topics

The main topics covered in this Learning Guide are:

- Identifying hazards
- Assessing risk and identifying unacceptable risk
- Identifying, assessing and implementing risk treatments
- Completing records and reports

Recognition of Prior Learning

If you think you can satisfactorily complete the assessment for this section, check your knowledge and skills as follows:

I can:

- recognise situations covered by safety, environment and quality procedures that are currently working well
- check conditions in the work area and recognise possible hazards
- recognise different unsolved hazards and how these might affect work/conditions/safety
- work out what could happen if different hazards occur
- work out the chance of a hazardous event happening
- work out the type and level of risk
- identify or find out from appropriate others the information for working out how acceptable or unacceptable a risk is
- refer the risk to the appropriate person if it is unacceptable

Learning activities

As you work through this Learner Guide you will complete the following activities:

- Question on the process of risk management
- Question related to identifying a work hazard
- Match up the outcome
- Consider the following case study
- Match the potential hazard to the elimination or control solution
- Demonstrate you can understand written work instructions
- Question about risk in the workplace
- Questions about reporting hazards or any concerns you may have about safety.

What workplace experience do I need?

If you are employed in the industry, complete the unit activities using your workplace as an example.

If you are not employed in the industry, your trainer can assist you to demonstrate the application of this unit of competency in a number of ways:

- you will undertake a work placement so you can experience a real work situation
- you can work through case studies or other examples, provided by your trainer
- you can visit as many worksites as possible to further assist with your assessment

How will I be assessed for this unit?

Assessment for this unit will comprise of both practical and theory components. Details of the methods, location and times of these assessments will be provided to you by your assessor.

Throughout this Learner Guide you will see the term trainer. This is the person who will be guiding you through this unit of competency. It could be a workplace supervisor, mentor, trainer, instructor or tutor.

When the term assessor is used it refers to the person who will make the final judgement of your competency in this unit. Sometimes the trainer and assessor will be the same person. In some cases they will differ.

The assessor will collect a range of evidence which shows how you meet the outcomes of the unit of competency.

There is a section at the end of this Learner Guide that gives you the chance to test your own understanding of the content of this Unit before being assessed formally by your assessor. The Learning Activities and the Check your Understanding section of this Learner Guide are not formal assessments for this Unit.

What resources will I need to complete this unit?

To complete this unit, certain resources are required. These resources are easily found in a workplace. If you are not in a workplace, your trainer will make sure you can obtain the required resources, and experience a real workplace environment.

Here is a suggested list of resources. Your trainer may also add any other relevant resources.

- examples of risk management and WHS system documentation, procedures and instructions
- workplace reporting procedures for hazards and risks
- examples of site written documentation that are required to be completed for risk control

What is risk management in the workplace?

Risk management protects people's safety and creates a safe work environment. In Workplace Health and Safety (WHS) terms, risk management is a way of identifying situations that might cause harm to people or property. It also includes acting to prevent a harmful situation happening or a person being hurt.

The *Model Work Health and Safety (WHS) Act 2012* requires all employers to have in place and use risk management processes. Employers must try to identify any possible hazard that could harm the health and safety of workers or anyone else in the workplace.

Risk management involves following clear steps that allow you to make informed decisions about how best to avoid or control the impact of risks. It is as much about identifying risks as it is about avoiding them. By using and following risk management techniques you can help improve safety and quality business performance.

The following chart shows the steps taken to conduct risk management.

HAZARD IDENTIFICATION
Identify and classify the problem

↓

RISK ASSESSMENT
Determine how serious the problem is

↓

RISK ELIMINATION OR CONTROL
Decide and action what needs to be done to solve the problem

↓

DOCUMENTING RISK ASSESSMENTS
Access procedures to maintain the elimination or control of the risk

Terms used in risk management

The best place to begin the theory of hazard identification and risk assessment is to learn some of the terms used. The following definitions will help you understand.

Risk:

The chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood.

Hazard:

A source of potential harm or a situation with a potential to cause loss.

Likelihood:

A qualitative description of probability and frequency of an event.

Probability:

The likelihood of a specific outcome, measured by ratio of specific outcomes to the total number of possible outcomes.

Consequences:

The outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain.

Frequency:

A measure of likelihood expressed as the number of occurrences of an event in a given time.

Risk assessment:

The process used to determine site risk management priorities by evaluating and comparing the level of risk against predetermined standards, target risk levels or other criteria.

Risk identification:

The examination of the work process to predict where accidents/incidents will occur. The process of determining what can happen, why and how.

LEARNING ACTIVITY 1

1.1. Risk management involves a process of clear steps taken in a certain order.
At which stage does elimination or control occur in the risk management process?

1.2. **What steps must be taken before the elimination or control stage in risk management is reached?**

1.3. What is the definition of the following:

Risk:

Hazard:

Consequences:

Risk Assessment:

Hazard identification

A hazard is something with a potential to cause loss or harm.

You need to always be aware of potential hazards at work.

Hazards arise from:

- the work conditions
- the use of machinery and substances
- poor work procedures and design
- wrong or out-of-date systems and procedures
- inappropriate actions or behaviour

Following are some examples of the tasks and equipment where you should be on the lookout for hazards and dangers.

Environmental hazards	Mechanical hazards	Working with equipment
Working outdoors	Static lifts	Working with process pumps
Working in confined spaces	Hand and power tools	Working with electricity
Working at height	Welding and gas cutting equipment	Working with lubricants
Storage areas	Ladders, stairs and platforms	Working with chemicals and hazardous substances
Working in the dark	Vehicles and mobile equipment (industry aerial platforms)	Working with compressed air
Exposure to extreme temperatures, hot or cold	Stationary equipment and machinery	Working with hydraulics
Isolation	High pressure delivery hoses	Working around explosives
Dust	Rod handling	Working around conveyors
Working underground	Moving parts, including rotating rods	Basic slinging and lifting

Special hazards in a mine environment

- moving vehicles – dump trucks, loaders, underground shuttle cars
- gas inflows
- unstable ground – be aware but normally handled by a senior person

Hazardous substances

A hazardous substance is any substance that has a potential to cause harm, as identified by WorkSafe. You must respect all substances used at or around a drill site or other work site – some may appear relatively harmless but can be hazardous if used incorrectly. Examples include Aerostart, degreaser, diesel, petrol, and Domestos. Some other substances, such as caustic soda, are clearly hazardous. Safety Data Sheets (SDS) are required to be kept in a file at all sites.

Safe procedures are detailed on SDS but general procedures are:

- avoid contact with eyes
- avoid contact with skin, where possible
- do not inhale fumes
- do not taste or swallow
- avoid splashing
- wash hands after handling declared product
- check boots and boot soles and make sure they are clean before entering eating places or accommodation
- change clothes that have become contaminated before entering eating places or accommodation. Wash before reusing

Hazard classification

Once hazards have been identified, they must be classified. This is done to help prepare a Hazard Management Plan. Hazards are classified into five broad areas:

1. 
Physical:
noise, radiation, light, vibration

2. 
Chemical:
poisons, dusts

3. 
Biological:
viruses, plants, parasites

4. 
Mechanical/Electrical:
tools, electrical equipment

5. 
Psychological:
fatigue, violence, bullying

Identifying hazards

A simple 10 point hazard check could be:

Hazard Checklist	✓
1. Can I be struck or otherwise contacted by equipment or machinery in use?	☐
2. Can I be injured if I make contact with any machinery or equipment in use?	☐
3. Can I become entangled on any rotating parts?	☐
4. Can I be drawn into or caught between any moving parts?	☐
5. Can I strain or over exert myself in the performance of my job?	☐
6. Can I slip, trip or fall while carrying out my job?	☐
7. Can I be exposed to injurious conditions, such as heat, cold, gas, fumes or dust?	☐
8. Can any of my actions adversely affect others in the workplace?	☐
9. Can damage to equipment or machinery occur?	☐
10. Can pollution of the environment occur?	☐

LEARNING ACTIVITY 2

2.1. **What is missing from the following list?**

A hazard can be classified as:

- physical – noise, radiation, light, vibration
- mechanical/electrical – tools, electrical equipment
- psychological – fatigue, violence, bullying

2.2. **Define what a hazard is in the workplace.**

2.3. Hazards are not only found in the workplace. They also occur in many daily activities, for example driving a car puts you at risk of crashing and suffering physical injury.
Outline three activities in your daily life where you should be on the lookout for hazards.
List them in the following space with their related hazard or danger.

2.4. You need to always be aware of potential hazards at work. **List three activities that you have come across in your current or previous workplace that might cause injury or harm.**

Hazard assessment

Policies and procedures for assessing risk

Effective hazard identification, assessment and control are central to a successful health and safety program. A hazard is assessed by the harm it can cause.

Hazards are identified in a number of ways, such as:

- job safety analysis and audits or checks
- workplace/site inspections
- equipment checks
- communication and consultation with other crews and employees
- observation and visual checks
- analysis of near misses and incidents
- task mapping
- checklists
- feedback based on experience

It is important for all employees, management and the organisation's WHS committees to be involved in the identification, assessment and control of hazards. Everyone in the workplace must communicate and state their concerns about anything that is a hazard or a potential hazard. It is everyone's responsibility to keep the workplace safe.

Ways to identify risks

The involvement of all employees, management and the organisation's WHS committees is critical in the identifying, assessing and controlling hazards.

The following descriptions explain these techniques for identifying hazards in more detail.

Safety audit:

This is a systematic and periodic inspection of the workplace to evaluate the effectiveness of the organisation's health and safety system. Safety consultants or WHS advisors such as safety officers may conduct the audit. An audit usually contains a written report for management and is usually referred to as a WHS Report.

Workplace / Site inspection:

These are regular inspections of the workplace by managers, supervisors and safety experts to determine, by observation, what hazards exist in the workplace. Inspections involve consultation with supervisors and employees and a report to management and/or the safety committee.

Equipment checks:

These are regular inspections and checks of workplace equipment by managers, supervisors and safety officers to determine if the equipment is in good working order. Equipment checks involve a standard set of procedures determined by the safety committee and often the equipment manufacturer.

Consultation:

Employees are often more aware of hazards and the possible ways of controlling them than management. Consulting employees and other crews can improve the assessment process as well as improving cooperation with control measures eventually put in place.

Visual checks:

As an employee you should always be on the lookout for any potential danger and report it immediately.

Observation:

A supervisor, manager or WHS officer may observe a workplace hazard as part of his or her normal duties. Part of the WHS plan includes clearly defining who is responsible for the activities and how the information is processed and analysed.

Complaints:

Many workplace hazards are brought to the attention of a supervisor or manager through a complaint made by an employee. Complaints should be taken seriously and passed to the appropriate person for prompt action, not left to create a more serious problem.

Injury and illness records:

Workplaces are required to keep records of injuries and illness. Many workplaces also generate reports and statistics based on workers' compensation claims. These statistics can be analysed to show the presence of hazards in the workplace.

Accident investigations:

Many workplaces have a set of procedures for investigating and reporting on accidents and incidents to identify hazards that contributed to the accident/incident, and in helping to avoid them in the future.

Health and environmental monitoring:

As with the WHS audits, monitoring may be done by WHS advisors or safety officers to provide technical advice about suspected problems. Monitoring may show that a substance or process is a hazard and its severity. In this way, monitoring is associated with both hazard identification and workplace assessment and evaluation.

A workplace hazard can also be brought to management's notice outside the routine investigating and reporting systems.

Reducing likelihood/probability and consequences

It is important to always follow Standard Work or Operating Procedures, and to understand what needs to be done for each task. If you are ever in doubt, ask a supervisor what to do.

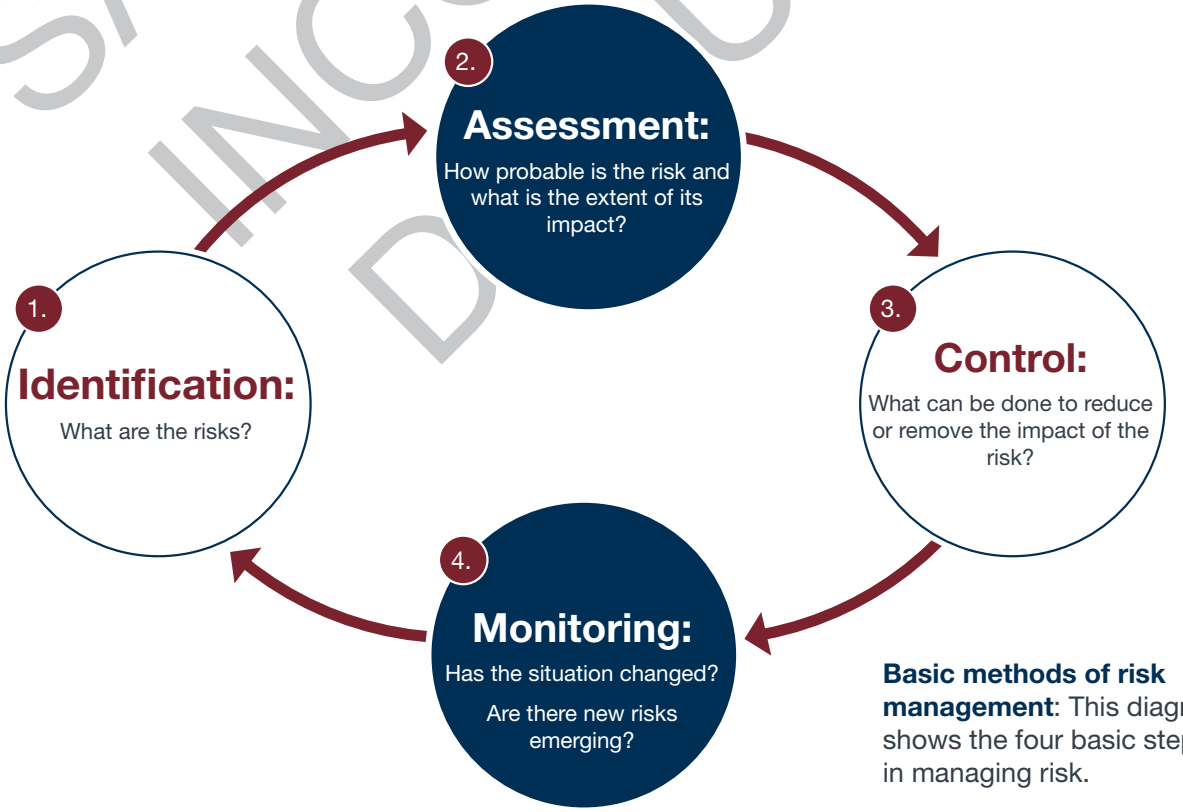
Be sure to remain aware of what is going on around you.

Be alert, particularly to actions that are usually safe but could become unsafe if conditions change.

Take notice of hazard control measures such as rod spin guards and whip checks, to ensure they are functioning correctly.

Risk management can be as simple as taking time to reduce the likelihood (or chance) and/or consequences (results or outcomes) of an accident or incident. This can be done in a number of ways and may include:

- regular inspections to identify possible hazards
- preventative maintenance to keep equipment and machinery in top condition
- verification of competence of workers in high risk activities
- training programs in correct equipment use
- improved supervision to assist in correct work techniques
- testing equipment and processes to check for safe work habits
- audits to make sure safety procedures are followed
- reviews and engineering redesign
- quality assurance systems
- worker rotation through high risk tasks to avoid fatigue
- changing the time of tasks to reduce repetition and loss of concentration
- contracting out to better qualified and equipped organisations



Basic methods of risk management: This diagram shows the four basic steps in managing risk.

Reducing likelihood/probability and consequences (Cont'd)

The following table shows various examples of:

- potential hazards
- possible outcomes from the hazard
- potential damage or risk that can be caused if they are not managed properly

Potential hazard	Possible outcomes from the hazard	Potential damage/risk
Static lifting	• Using incorrect lifting procedures • Lifting something too heavy or large	• Muscle strain or permanent damage • Dropping an item on yourself or a workmate
Using hand tools	• Using defective or damaged tools • Not being trained	• Slippage or breakage causing bodily harm • Incorrect usage resulting in injury
Mechanical equipment	• Getting caught in a conveyor belt • Operating vehicles on shared paths with pedestrians	• Limbs caught in conveyor resulting in amputation or possible death • Hitting a workmate and causing death or injury
Electrical	• Unsafe power supplies to electrical equipment	• Shocks, burns, cardiac arrest
Ladders, stairs and platforms	• Unstable or damaged rungs/steps	• Fall from heights, broken bones or possible death
Storage areas	• Incorrectly labelled chemicals • Incorrectly sealed or packed	• Possible explosion from incorrect mixing of chemicals or leakage
Thermal substances	• Hot engine coolant. Hot mechanical components • Fire	• Burns or scalds, 1st, 2nd, 3rd degree burns
Chemical substances	• Acids and alkalis not handled properly	• Skin/tissue damage or respiratory damage through flame inhalation
Working outdoors	• Not wearing sunblock or safety equipment • Not following warning signs	• Sunburn, skin cancers, 'arc eye' tissue damage • Falling down a hole and breaking limbs
Working in offices	• Insufficient or too much lighting	• Eye damage or headaches
Plant and machinery noise	• Not wearing protective clothing	• Loss of hearing (permanent or temporary), disorientation, dizziness

Table 1: Hazard Identification

LEARNING ACTIVITY 3

3.1. A hazard is determined and assessed (or worked out) by the potential harm it can cause.
What are the potential outcomes for the hazards listed in the following table?

In the 'Potential damage/Risk' column, record what the damage might be if the problem is not eliminated (removed) or controlled (managed).

Hazard	Potential damage/risk
Old electrical supply	Electrocution giving shock, burns, cardiac arrest
Tools that are too big for the delicate job they are used for	
History of machinery overheating	
Fatigue from strenuous work in a hot environment	
Tasks that are too difficult and therefore dangerous for the level of training and skills	

Risk assessment

There is a legal obligation for employers and employees to do something about any hazards they identify as being a risk to people in terms of injury or illness.

You can work out a risk by thinking about how likely the hazard is to happen and how serious the possible consequences or outcome might be. This is so relevant precautions can be put in place to reduce the chances of it happening and causing harm. Risks should be listed from extreme to low. Those with the highest level of risk require immediate action.

If an employer cannot eliminate or remove a hazard then they must control or manage the risks. The following methods can be used:

1. substitute the system of work or machinery with something safer, for example old equipment may be replaced with modern equipment that is safer and easier to use
2. isolate the hazard, for example taping off the dangerous area or item
3. minimise the risk by using engineering controls, for example guard rail, scaffolding
4. minimise the risk by using administrative controls, for example warning signs, safe work practices
5. use personal protective equipment, for example safety glasses, ear muffs

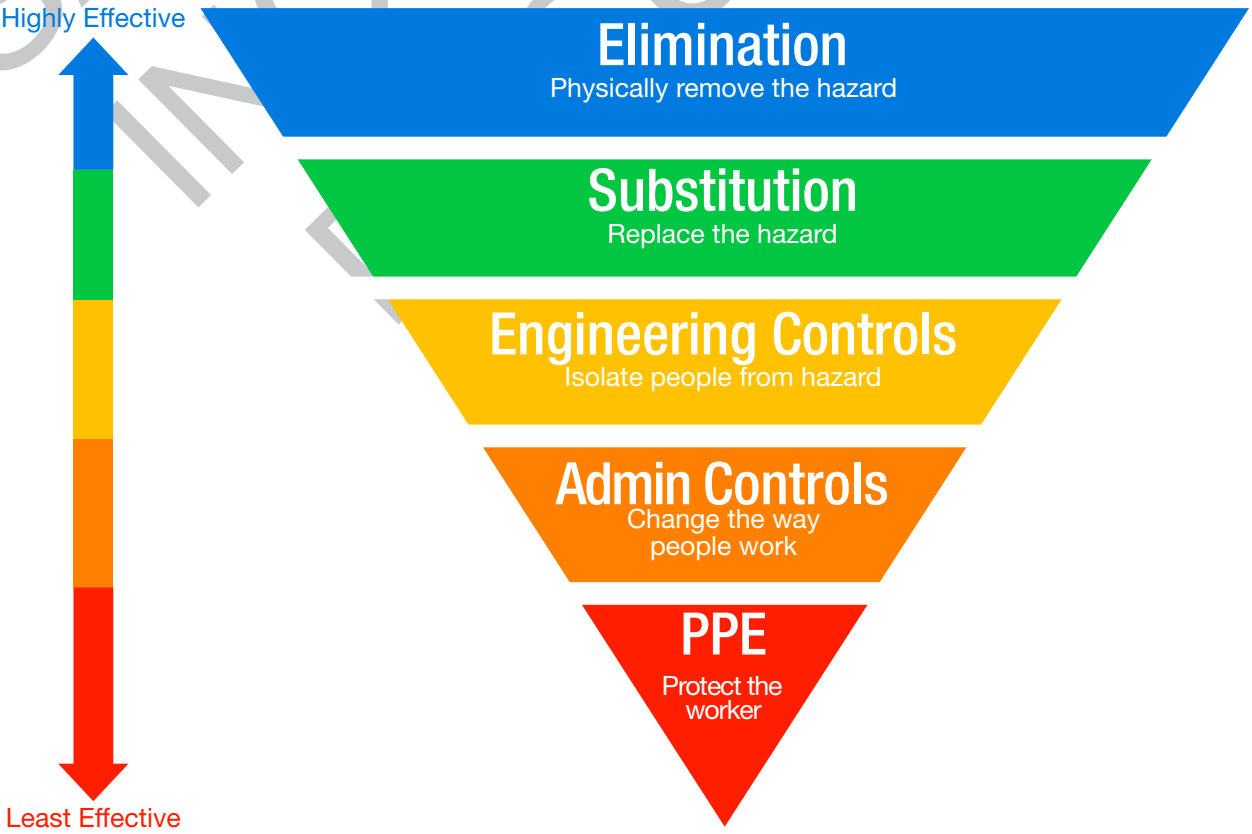
Sometimes no single control is enough and more than one of the previous controls needs to be used to reduce the risk as much as possible.

Methods 4 and 5 do not always work as well as the other measures, and so the hazard and work procedures should be regularly reviewed.

Personal Protection Equipment (PPE)

The following PPE (Personal Protection Equipment) must be provided, as appropriate to the work situation, and used as required for specific tasks. The PPE must only be used for its intended purpose.

- protective clothing including safety footwear
- ear muffs/plugs
- goggles
- dust mask
- gloves
- hard hats
- helmet lights
- fluoro strips / jackets
- sun protection for working outdoors



How Personal Protective clothing reduces risk

Every site you go to will apply the national standard regarding protective clothing and it is highly likely that you will need to 'outfit'. This may consist of:

1 **Head protection (hard hat etc):**
will protect you from impact injury and should be worn at all times except inside offices, control rooms, staff amenities and vehicles with adequate roof protection. Hard hats should meet national standards and have a date of issue. They should be replaced every three years unless damaged or worn out before.

2 **Eye protection:**
is also available in different forms varying from simple glasses or goggles with more impact resistant shields, which could be combined with a dust mask or respirator, depending on the job application. Again, follow the site safety procedure, operation instructions for the job or check with the appropriate person if in doubt (supervisor or safety officer).

3 **Respiratory protection:**
protects you from inhaling dusts, gases, harmful vapours and smoke. A wide range of devices are available, depending on the job requirements. Disposable dust masks are most common, but do not filter any gases or toxic substances. When using masks with chemical cartridges it is important to have the right cartridge to suit the toxic substance to be eliminated. No one chemical can remove all contaminants. Filters are colour coded. Make sure that the right cartridge is fitted and that the seals are not damaged!

4 **Ear protection:**
is available in a number of forms, including earmuffs, disposable foam plugs, reusable plugs, individually fitted plugs etc. Different applications and noise levels will require different protection. Follow the site rule safety signs or check with the appropriate person if in doubt.

5 **Hand protection (gloves):**
depending on the material the gloves are made from they can protect you from heat, cold, cuts and abrasions, electricity, chemicals and biological infections. Gloves can be made from different materials and should be chose to suit the task at hand, eg latex protects from biological hazards.

6 **Sturdy trousers/shirts/overalls:**
should protect you from dust, dirt scratches, sun, and cold. They should be neat fitting – not too tight that they restrict your movements or too baggy and in hazard of being caught in/on anything

7 **Foot protection (steel cap boots/gumboots etc):**
protect your feet from wet, cold, slipping and impact damage. All areas on sites are designated foot protection areas, however, 'appropriate' footwear depends on the job you maybe doing, the location and weather conditions.

8 **High visibility vest:**
are generally worn on open cut sites, processing plants and quarries to save people from being run over. Many sites, especially underground mines, have high visibility strips integrated into standard issue clothing.

Assessing the likelihood of risks

The likelihood, or probability, is a way of measuring either how likely or how often an incident is likely to occur. It is the measure of the chances of an incident/accident happening.

When working out the degree of risk arising from a hazard, ask yourself the following questions:

- does the type of hazard mean there might be a risk?
- do I need to look at more than one hazard together?
- what types of incidents or situations can be predicted?
- will the risk rating increase over time?
- does the workplace/area have any hazards?
- will the introduction of new work reduce or increase the hazard?
- what is the skill and experience level of the team?
- will the existing control measures be adequate?

To assist in assessing the likelihood, the diagram below is used to rate the risk.

As you can see from the diagram, if the likelihood of a risk causing a fatality is very likely then it is rated as a category 1. This means it is of the highest priority to be eliminated from the workplace. On the other end of the scale if the risk of an injury is very unlikely and consequences would only be negligible if it occurred, then it is given the lowest category and therefore the lowest priority.

Assessing the consequences of risks

A consequence is the outcome of an event. With risk assessment it is usually an injury to a person or damage to equipment or production. Any hazard with a rating of 1 must be eliminated or controlled to an acceptable limit before work can proceed.

Prioritising Risks

At times there could be more than one hazard in the workplace that needs to be addressed. If that is the situation, the hazards will need to be prioritised before they can be treated.

The criteria used for prioritising hazards are:

- level of risk to safety of personnel
- threat to production
- environmental risk
- risk to machinery and equipment
- risk to product quality
- hazards requiring elimination
- hazards requiring engineering control
- hazards requiring administrative control
- hazards requiring PPE

The level of likelihood and in turn the consequences of the hazard or risk will assist in the prioritising of hazards.

	Very likely	Likely	Unlikely	Very unlikely
FATALITY	1	1	2	3
MAJOR INJURY POSSIBLE	1	2	3	4
MINOR INJURY	2	3	4	5
NEGLIGIBLE INJURIES	3	4	5	6

Diagram 2: Hazard and Risk scale

Risk elimination and control

Once a risk has been assessed it is time to take action. The action taken will depend on the type of risk and the best way to deal with it. There are two options when deciding what needs to be done to solve the problem. These are elimination and control.

Elimination

Elimination is when a hazard is completely removed. Obviously the consequences of the risk occurring are no longer present because the hazard has been eliminated. An example of this would be if there was an electrical drill with an exposed and frayed electrical lead that created the hazard of an electrical shock for an operator. Eliminating the risk of this hazard occurring would be to replace the faulty equipment with one that did not have a damaged power lead.

Control

Control is used when the hazard cannot be completely eliminated. An example of this would be the use of dangerous machinery. To control the risk of a hazard occurring, such measures as machinery guards, warning signs, proper training and personal protective equipment will be put in place to reduce the risk of injury.

If it is not possible to do anything about the hazard itself, a change will need to occur in the way work is done so that you spend less time exposed to a hazard. For example, workers can be kept out of noisy areas if they don't have to be there or away from machinery when it is in use.

The table below expands on what we covered in Table 1 (pg 18) by identifying how changes can be implemented to either eliminate or control the risks of a hazard. The added column in Table 3 is titled, Elimination/control.

Potential hazard	Possible outcomes from the hazard	Potential damage/risk	Elimination/ Control
Static lifting	• Using incorrect lifting procedures • Lifting something too heavy or large	• Muscle strain or permanent damage • Dropping an item on yourself or a workmate	• Control – Provide training on how to lift properly to avoid injury • Eliminate – Use mechanical device to assist with the lifting of heavy items
Using hand tools	• Using defective or damaged tools • Not being trained	• Slippage or breakage causing bodily harm • Incorrect usage resulting in injury	• Eliminate – Replace defective and damaged tools • Control – Provide ongoing training on the proper handling and use of tools
Mechanical equipment	• Getting caught in a conveyor belt • Operating vehicles on shared paths with pedestrians	• Limbs caught in conveyor resulting in amputation or possible death • Hitting a workmate and causing death or injury	• Control – Put safety guards in place to protect workers; provide ongoing training; place warning signs up alerting people of dangerous areas
Electrical	• Unsafe power supplies to electrical equipment	• Shocks, burns, cardiac arrest	• Eliminate – Replace all unsafe power supplies
High pressure delivery hoses	• Operator gets blasted with pressurised air	• Air pressure could cause injury	• Eliminate – Replace all unsafe hoses

Table 3: Elimination/control of hazards

Reducing likelihood or probability and consequences

Risk treatment can be as simple as reducing the likelihood and/or consequences of an accident or incident.

Methods of reducing the likelihood and consequences of risk could include:

- regular inspections
- preventative maintenance
- structured training programs
- improved supervision
- testing equipment and processes
- audit and compliance programs
- reviews and engineering redesign
- quality assurance systems
- rotation of personnel through high risk tasks
- changing the time of tasks
- contracting the risk to better qualified and equipped organisations

In addition there are also a number of ways of reducing the consequences, such as:

- use of additional PPE
- design changes on equipment to minimise injury or damage
- implement emergency response procedures
- install emergency equipment
- plan for possible contingencies
- conduct emergency drills

Risk treatment can be as simple as reducing the likelihood and/or consequences of an accident or incident.

LEARNING ACTIVITY 4

Consider the following case study and help Paula understand why it is so important to identify hazards and their potential harmful outcome.

Paula transports machinery and tools around a site using a truck. She must constantly be careful of pedestrians because the shared paths used by vehicles and pedestrians are not well defined or separated.

One day her supervisor tells her that she must stop work because a safety audit is taking place. She must answer questions about her job and identify any potential hazards and safety concerns. Paula is not keen on the idea of having her flow of work stopped. She is uncooperative and says that there are no hazards involved in her work. She does not even mention how she must share paths with pedestrians. She believes that if nothing has happened in her five years of working then it never will.

4.1. **What would you say to Paula to make her understand that she must tell the safety audit person about the hazards of her work?**

4.2. **What could be the possible hazardous outcome of pedestrians and vehicles sharing the same path?**

4.3. What would you suggest as a control or elimination of the potential harmful situation that has been identified in Paula's job?

4.4. How would you rate the risk on the scale of 1 to 6 using the system in Table 2: Hazard and risk assessment table?

	Very likely	Likely	Unlikely	Very unlikely
FATALITY				
MAJOR INJURY POSSIBLE				
MINOR INJURY				
NEGLIGIBLE INJURIES				

4.5. There are a number of ways to reduce the chance of an accident/incident occurring. In Learning activity 3 using part of the following table you recorded what the damage might be if the problem is not eliminated or controlled.

Now by drawing arrows, as shown in the following table, match up the potential hazard in column 1 with the elimination/control solution in column 2 so that the best outcome of elimination or control is achieved.

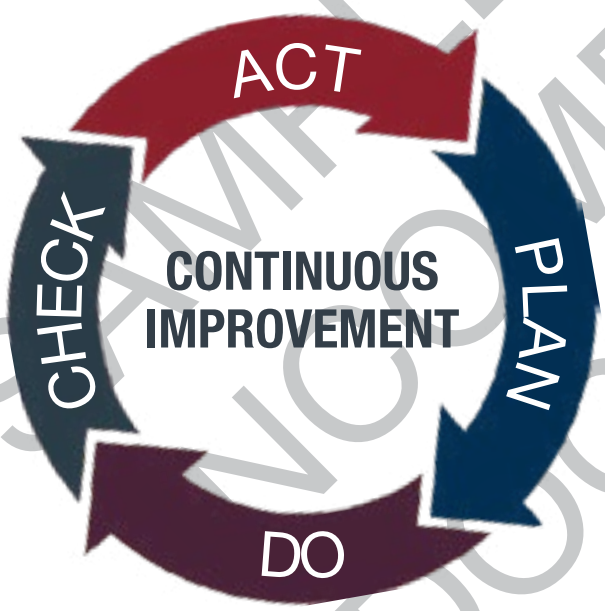
Potential hazard	Elimination/control solution
Old electrical supply	Contracting the risk to better qualified and equipped organisations
Tools that are too big for the delicate job they are used for	Preventative maintenance
History of machinery overheating	Reviews and engineering redesign
Fatigue from strenuous work in a hot environment	Regular inspections
Tasks that are too difficult and therefore dangerous for the level of training and skills	Rotation of personnel through high risk tasks

Review of risk assessment

Reviewing risk assessment is an important part of risk management. By continually reviewing the existing risk of hazards and identifying new ones, new information will become available. Once implemented, control strategies must be documented or recorded. They need to be properly used and maintained, and training should be provided where necessary.

Ongoing monitoring and review are necessary to make sure controls are suitable and to encourage continual improvement. There are a number of procedures and activities that can be used to make sure that risk assessment approaches are continuously reviewed.

Summary of hazard identification, assessment and control



Act

- identify hazards

Plan

- classify
- analyse and
- assess and evaluate the importance and effect of each hazards

Do

- do something about the hazards

Check

- monitor the success of the actions - obtain feedback (this then leads to ACT and the cycle continues)
- use Quality Assurance procedures to act as the support wedge during the cycle

Standard safety work or operating procedures

Many hazards can be overcome or avoided by the use of Standard Work or Operating Procedures which are sometimes referred to as Standard Operating Procedures. These provide instructions on how to carry out tasks safely. They are provided for jobs that could, in some way, be considered hazardous.

If Standard Work or Operating Procedures have been written for a job you are about to do, you must follow the instructions. Your supervisor will be able to provide you with a list of Standard Work or Operating Procedures and you should read through them. They can be presented in different ways such as:

- written tasks
- checklists
- flow charts
- drawings and diagrams
- information sheets
- manufacturer's instructions

Apart from being a sensible practice, it is your legal duty to take reasonable care for the health and safety of yourself and others while working. This means that you are responsible for your own conduct (and the impact of your conduct and performance on others).

Workplace health and safety is jointly shared between you and your employer.

Be aware and observant, take action to do something about things that aren't right before they cause an accident.

LEARNING ACTIVITY 5

Your trainer will give you an example of a written Standard Work or Operating Procedure. Read the instructions carefully.

Demonstrate to your trainer that you have clearly understood them by explaining what the instructions are stating you should do.

Answer the following question in the space provided.

5.1. **What hazards or possible hazard outcomes do you think are covered by these instructions?**

Acceptable/unacceptable risk

The acceptability or unacceptability of a risk is based on the level of likelihood and consequences. The higher the risk, the more unacceptable it is.

The information on what is acceptable or unacceptable risk will depend on your site procedures and can be found in your workplace:

- legislation
- site policy
- WHS exposure limits
- goals and objectives

Safety procedures

Accidents in the workplace can occur for a number of reasons. These might include:

- a lack of knowledge of safety rules
- a lack of skills to do the job
- attempting to take shortcuts
- a failure to consider the consequences of actions
- forgetting important steps in procedures
- working with a the wrong attitude
- working with the wrong tools and equipment
- inadequate job training
- inadequate or defective tools and machinery

All organisations are required to have safety systems and procedures in place to protect employees. Safety systems and procedures are covered in:

- government legislation and regulations
- management plans and rules
- WHS policies and procedures
- codes of practice
- manufacturer's instructions
- safety alert sheets
- information sheets
- standard work or operating procedures and instructions
- other informal systems

These are designed to protect your personal safety, the safety of your workmates, and the safety of workplace equipment.

You need to understand what is required of you in the workplace so you can act in a safe manner.

LEARNING ACTIVITY 6

6.1. **Where would you find the information on acceptable or unacceptable risk in your workplace?**

6.2. **List three possible things that could contribute to the cause of an accident in the workplace.**

6.3. Identify a specific task in your workplace. Identify all the safety procedures or instructions required to complete the task. **Note your answers in the following spaces provided.**

Task:

Instruction's location:

Safety procedures:

Monitoring and completing records and reports

It is important that workers on the job continually check the worksite for new hazards.

Changes, even minor ones, to work equipment or tools, procedures, and schedules might create hazards that nobody has thought about.

You should always be aware of potential hazards particularly in situations that are not routine, or when things have changed from the original plan.

Where to go for advice

Information about reporting hazards or any concerns you may have about safety risks at work can be reported to a:

- supervisor
- health and safety officer
- health and safety representative
- health and safety committee (usually found in larger workplaces)

Workplace health and safety representatives

Workers may elect co-workers to represent them on health and safety issues. Extra representatives can be elected after negotiations with the employer.

Workplace health and safety committees

The main function of workplace health and safety committees is to promote cooperation between employers, principal contractors and workers to ensure workplace health and safety.

The committee also provides information to workers and advice to the employer or principal contractors on workplace health and safety matters.

NOTE:

- if the workers at your workplace elect a workplace health and safety representative, your employer must consult with that person on health and safety issues;
- if a health and safety committee is established at your enterprise, your employer must allow the members of the committee to be involved in health and safety matters at your enterprise

Workplace health and safety officer

An employer or principal contractor can appoint a person to be workplace health and safety officer for more than one workplace, if the person can carry out the duties at each workplace.

Workplace health and safety officers:

- advise on health and safety at the workplace;
- carry out inspections to detect unsafe conditions and practices;
- report unsafe conditions
- analyse reports
- recommend training
- make recommendations to the safety committee
- make recommendations to the site manager

Completing records and reports

It is important to keep records and to document and report all hazards/risk control. There are many types of records and reports that may be required in your workplace and they could include:

- hazard reporting forms
- deputy/CEO's reports
- incident/accident reports
- near miss reports
- shift reports
- environmental reports
- legislative reports

Most reports are designed not to place blame on someone, but to try and work out the cause of an accident or incident. Reports can assist in finding ways to take action to make sure it doesn't happen again.

Employees will be faced with hazards at your workplace. Any injury or exposure to hazards must be reported. A simple form makes the reporting easier and increases the chance of getting the information a manager needs.

An accident or incident report form is a legal document. It is essential, both from a legal standpoint and as a way of identifying any problems, that reports are clear, accurate and include the facts.

Make sure that you stick to the facts and avoid guessing at causes or blaming others when filling out forms.

Each record must be kept for at least five years. If the accident/incident is related to WHS, these should be noted in the WHS section. If it leads to maintenance on plant or equipment, it should be recorded in the maintenance log.

Do your part in improving safety by making sure all reports are completed and directed to the right people. If you're not sure what to do, ask your supervisor.

LEARNING ACTIVITY 7

Information about hazards or any concerns you may have about safety risks must be reported.

7.1. **Who would you report an accident to in the workplace?**

7.2. **Why is it important to keep records of all hazards or risk controls and report them to the appropriate person?**

7.3. **Provide three examples of people you might report a hazard or incident to in the workplace.**

NOTES:

Check your understanding

Once the Learning Activities from all sections have been completed, the following Knowledge questions and Practical activities are provided for you to check your understanding of this unit prior to undertaking the assessment.

Once these questions and activities are completed, contact your Trainer / Supervisor to discuss the completion of your assessment.

Knowledge questions

Answer the following questions in the space provided.

1. Risk management involves a process of clear steps that, when undertaken in order, allow you to make informed decisions about how to best avoid or control the result of risks.
   What are the four steps that you take to carry out risk management?

2. A hazard is something with a potential to cause loss or harm. Poor work procedures and design is one situation that can cause a potential hazard. **Provide examples of two more**

3. Hazards are classified into five broad areas. **What are two of them?**

4. Risk management is as simple as reducing the likelihood (chance) and/or consequence (result or outcome) of an accident/incident. There are a number of ways to reduce the likelihood.
What are three of them? Provide an example of a situation where each can be used in the workplace.

5. **Define what the term risk means.**

6. **What are two methods risk management uses to manage the risk of hazards in the workplace?**

7. **Why is it important to continually make an assessment of any controls?**

8. **Who should you report any concerns about hazards to in your workplace?**

9. **Explain your site's policies and procedures for assessing hazards?**

10. **List personal measures you should take to reduce risks**

11. **What is the role of the safety officer in relation to risk assessment?**

Practical activities

1. Think about Con's situation in the following case study and answer the questions to demonstrate to your assessor you really understand risk management.

Con is working with a new employee when he notices a safety issue. A drill used for drilling holes in metal that the new worker is using has a broken safety guard on it. It looks like the worker doesn't know how to use the drill properly and he seems to be struggling with getting the job finished.

By identifying a hazardous work practice Con has taken the first step in risk management.

He has the responsibility and duty of care to make sure that the situation that could cause harm is either controlled or eliminated.

Your assessor will ask you the following questions.

- What steps should Con take to make sure the situation becomes safe?
- What will Con have to do keep a record of the situation?
- What is your assessment of how serious the problem is?
- What could the hazard be classified as?
- What controls or elimination methods would you put in place so the risk of a hazard occurring in the future is fixed?
- What methods would you put in place to continue to monitor the situation?

2. Choose a hazard you have identified. Answer the following questions to document the workplace procedures for choosing the most appropriate course of action for the control of the risk

Describe the hazard.

- What are the workplace controls to eliminate or minimise risk?
- What are the possible options for the solutions?
- How will the solution impact on safety?
- How would you analyse and test the options?
- What are the resource requirements?

Answers to Learning activities

Learning activity 1

1.1. Risk management involves a process of clear steps taken in a certain order. At what stage does elimination or control occur in the risk management process?

Answer:

Risk elimination and control occurs in step 3.

1.2. What steps must be taken before the elimination or control stage in risk management is reached?

Answer:

Hazard identification and risk assessment.

1.3. What is the definition of the following?

Answer:

Risk: is defined as the chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood.

Hazard: a source of potential harm or a situation with a potential to cause loss.

Consequences: the outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain.

Risk assessment: the process used to determine site risk management priorities by evaluating and comparing the level of risk against predetermined standards, target risk levels or other criteria.

Learning activity 2

2.1. What is missing from the following list?

Answer:

3. chemical – poisons, dust
4. biological – viruses, plant, parasites

2.2. Define what a hazard is in the workplace

Answer:

A hazard is something with a potential to cause loss or harm.

2.3. Outline three activities in your daily life where you should be on the lookout for hazards. List them with their related hazard or danger in the following space.

Answer:

Answers will vary but may include such things as crossing the road, use of sharp knives, frayed electrical cords, too many appliances in one electrical socket, lifting heavy weights.

2.4. You need to always be aware of potential hazards at work. List three activities that you have come across in your current or previous workplace that might cause loss or harm.

Answer:

The answer may include any three of the following:

- static lifts
- hand and power tools
- working with lubricants
- welding and gas cutting equipment
- ladders, stairs and platforms
- working at height
- working with electricity
- working with compressed air
- working with hydraulics
- stationary equipment and machinery
- working around conveyors
- working with process pumps
- vehicles and mobile equipment (industry aerial platforms)
- basic slinging and lifting
- working with chemicals and hazardous substances
- working around explosives
- working in confined spaces
- storage areas
- working outdoors
- working in offices

Learning activity 3

3.1. What are the potential outcomes for the hazards in the following table?
In the Potential damage/Risk column, record what the damage might be if the problem is not eliminated (removed) or controlled (managed).

Answer:

Hazard	Potential damage/risk
Old electrical supply	Electrocution giving shock, burns, cardiac arrest
Tools that are too big for the delicate job they are used for	Slippage or breakage causing bodily harm. Incorrect usage resulting in injury.
History of machinery overheating	Burns
Fatigue from strenuous work in a hot environment	Dehydration, headaches, fatigue
Tasks that are too difficult and therefore dangerous for the level of training and skills	Incorrect procedure for tasks resulting in injury, incorrect usage of equipment resulting in injury to self or workmates

Learning activity 4

4.1. What would you say to Paula to make her understand that she must tell the safety audit personnel about the hazards of her work?

Answer:

There is a legal obligation for both employers and employees to do something about any hazards they identify as being a risk to people in terms of injury or illness.

4.2. What could be the possible hazardous outcome of pedestrians and vehicles sharing the same path?

Answer:

A pedestrian being hit and injured or even dies.

4.3. What would you suggest as a control or elimination of the potential harmful situation that has been identified in Paula's job?

Answer:

Clearly mark walkways and roadways and put sign up for pedestrians and vehicle traffic.

4.4. How would you rate the risk on the scale of 1 to 6 using the system in Table 2: Hazard and risk assessment table?

Answer:

A possible answer may be:

Very likely	Likely	Unlikely	Very unlikely
5	3	2	3
2	2	3	4
2	2	4	5
3	4	5	6

4.5. Now by drawing arrows like the one shown in the following table, match up the potential hazard in column 1 with the elimination/control solution in column 2 so that the best outcome of elimination or control is achieved.

Answer:

Solutions have been placed alongside the corresponding Potential hazard.

Potential hazard	Elimination/ control solution
Old electrical supply	Preventative maintenance
Tools that are too big for the delicate job they are used for	Reviews and engineering redesign
History of machinery overheating	Regular inspections
Fatigue from strenuous work in a hot environment	Rotation of personnel through high risk tasks
Tasks that are too difficult and therefore dangerous for the level of training and skills	Contracting the risk to better qualified and equipped organisations

Learning activity 5

5.1. What hazards/possible hazard outcomes do you think are covered by these procedures/ instructions?

Answer:

The answer will depend on the Standard Work Procedures/Instructions provided

Learning activity 6

6.1. Where would you find the information on acceptable/unacceptable risk in your workplace?

Answer:

- legislation
- site policy
- OHS exposure limits
- goals and objectives

6.2. List three possible things that could contribute to the cause of an accident in the workplace.

Answer:

The answer may include any three of the following:

- a lack of knowledge of safety rules
- a lack of skills to do the job
- attempting to take shortcuts
- a failure to consider the consequences of actions
- forgetting important steps in procedures
- working with a the wrong attitude
- inadequate job training
- defective tools and machinery

6.3. Locate a work procedure/instruction for a specific task. Identify all the safety procedures/instructions required to complete the task. Note your answers in the following spaces provided.

Task:

Instruction's location:

Safety procedures:

Answer:

Task: the answer will depend on the task located.

Instruction's location: this will depend on the task

Safety procedures: this may include such things relevant to the task as PPE, specific safety procedures for equipment to be used, signs to be adhered to.

Learning activity 7

7.1. Who would you report an accident to in the workplace?

Answer:

Your supervisor and the health and safety officer.

7.2. Why is it important to keep records of all hazards/risk control and report them to the appropriate person?

Answer:

An accident/incident report is a legal document and must be kept for 5 years. It is a way of identifying any problems.

7.3. Provide three examples of people you might report a hazard or incident to in the workplace.

Answer:

The answer may include any three of the following:

- supervisor
- health and safety officer
- health and safety representative
- health and safety committee (usually found in larger workplaces)

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About SkillsDMC

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