HAZARD ASSESSMENT AND CONTROL

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HOUSEKEEPING

- First Aid
- Fire Exits
- Emergency/Evacuation
- Washrooms
- Mobile phones
- Breaks
- Participant Notes

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COURSE OBJECTIVES

- **NTPC is committed to establishing and maintaining a Hazard Assessment and Control program to:**
  - **identify hazards,**
  - **reduce risk, and**
  - **implement effective control measures.**
- **The purpose of this course element is to outline the requirements and framework for the assessment and control of hazards.**

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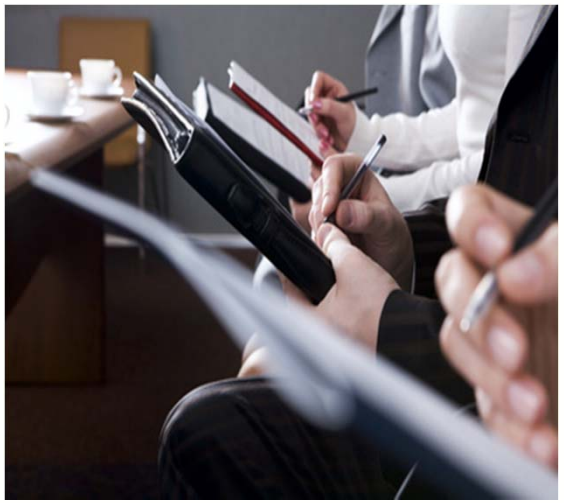
COURSE CONTENTS

1. Introduction to Risk Management
2. Element 02 Hazard Assessment and Control
3. Hazard Identification
4. Risk Assessment
5. Hazard Control Development
6. Hazard Control Implementation
7. Monitoring and Reporting
8. Job Safety Analysis
9. Tailboard Meetings



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INTRODUCTION TO RISK MANAGEMENT

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INTRODUCTION TO RISK MANAGEMENT

Principles

- Creates and protects value
- An integral part of all organizational processes
- Part of decision making
- Addresses uncertainty.
- Systematic, structured and timely.
- Based on the best available information

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INTRODUCTION TO RISK MANAGEMENT

Applications of Risk Management

- Security
- Ethics, Fraud, Probity
- Resource Allocation
- Compliance
- Operations
- Maintenance Systems
- Project Management
- Design & product liability
- Health and Safety
- Environmental issues
- Quality Issue
- Purchasing
- Contractor Management
- Public risk
- Asset Management
- Business Continuity


Canberra demolition


EXERCISE 1.
Your Risks?

SPOT THE HAZARDS

In the next slide, see how many hazards you can spot in 5 minutes.

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SPOT THE HAZARDS

NWT LEGISLATION

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Hazard Assessment and Control

Legislation

Occupational Health and Safety Regulations
Northwest Territories and Nunavut

Part 3 GENERAL DUTIES
General Duty of Employers

12. An employer shall, in respect of a work site,
    (a) provide and maintain systems of work and working environments that ensure, as far as is reasonably possible, the health and safety of workers;
    (b) arrange for the use, handling, storage and transport of articles and substances in a manner that protects the health and safety of workers;
    (c) provide information, instruction, training and supervision that is necessary to protect the health and safety of workers; and
    (d) provide and maintain a safe means of entrance to and exit from the work site.

General Duties of the Worker

13. A worker shall, in respect of a work site,
    (a) use safeguards, safety equipment and personal protective equipment required by these regulations; and
    (b) follow safe work practices and procedures required by or developed under these regulations.

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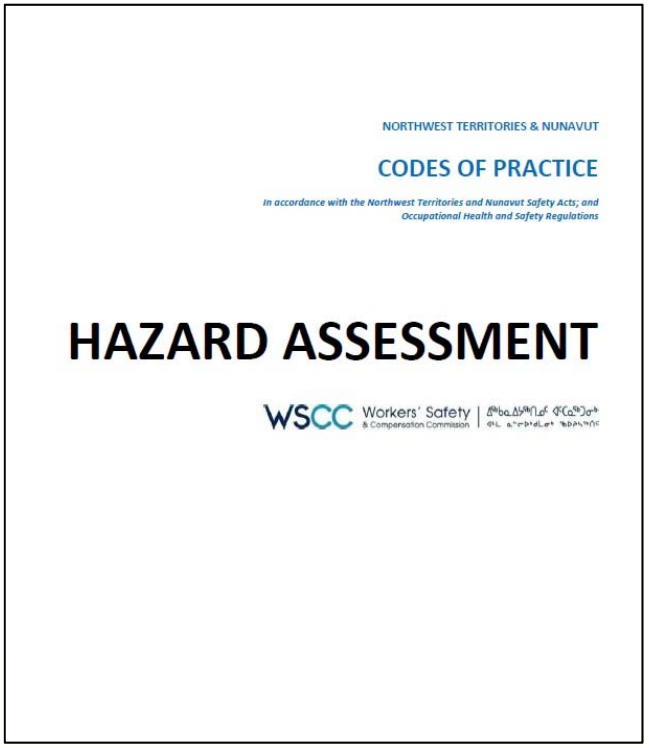
Hazard Assessment and Control

Code of Practice

- WSCC Code of Practice that we must follow
- We must assess hazards in our workplace before starting work



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Hazard Assessment and Control

COR certification

- One of the sections in the COR audit is the “Workplace Hazard Assessment and Control” section
- We must perform well in this section in order to keep our COR certification

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Hazard Assessment and Control

Tailboards

- One of the most effective tools for Hazard assessment and control at NTPC is the "Tailboard Meeting" form
- Complete and accurate tailboards show that hazards have been identified and controls have been put in place.

NORTHWEST TERRITORIES POWER CORPORATION Empowering Communities	Health & Safety Management System Form: Tailboard Meeting	Page 1 of 2
	Monitor: Director, Health, Safety & Environment	Form #: 2.3

Job:		Date & time:
Location:		Worker in Charge:
Emergency Response		
System Control: (867) 669-3370	Fire:	Police:
Medical/ambulance:	Other:	First Aider:
Muster point:		AED location:
Estimated emergency response time:		
Rescue plan (e.g., heights, confined space, remote areas):		

Job Steps & Tools	**Hazards** (examples on page 2)	**Controls** (hierarchy on page 2)
Work Protection in place (type, number, holder, apparatus):		

Please write legibly.

Hazard Assessment and Control

Tailboards

- The tailboard is a “site-specific hazard assessment”.
- Other companies may call it a tailgate meeting or an FLRA (Field Level Risk Assessment).
- These site-specific hazard assessments all have the same components: Job Steps, Hazard Identification, and Controls for each hazard.
- They are signed off by the workers involved.

NORTHWEST TERRITORIES POWER CORPORATION Empowering Communities	Health & Safety Management System Form: Tailboard Meeting	Page 1 of 2
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Job:		Date & time:
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Medical/ambulance:	Other:	First Aider:
Muster point:		AED location:
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Rescue plan (e.g., heights, confined space, remote areas):		

Job Steps & Tools	**Hazards** (examples on page 2)	**Controls** (hierarchy on page 2)
Work Protection in place (type, number, holder, apparatus):		

Please write legibly.

NTPC
H&S MANAGEMENT SYSTEM
ELEMENT #02
HAZARD ASSESSMENT AND CONTROL

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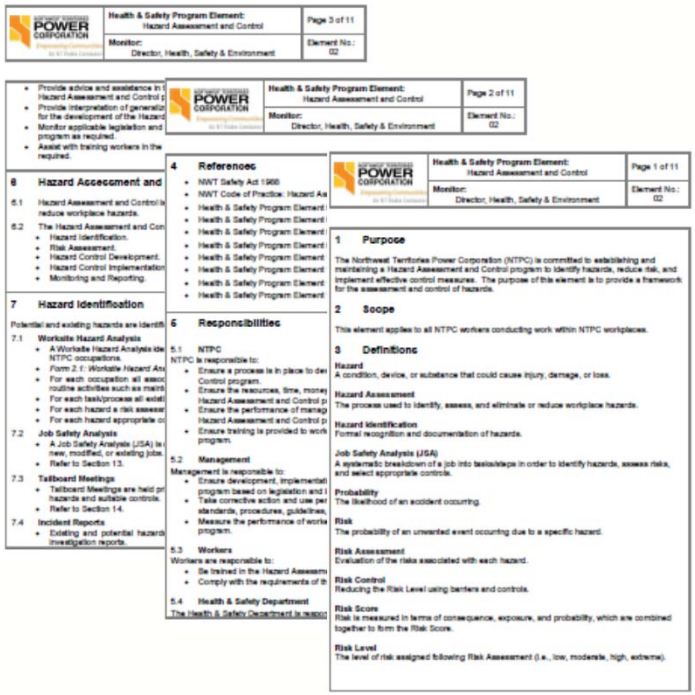
Element 02
Hazard Assessment and Control

Purpose

- To provide a framework for the assessment and control of hazards.



Health & Safety Program Element: Hazard Assessment and Control — Page 3 of 11
Monitor: Director, Health, Safety & Environment — Element No.: 02

Health & Safety Program Element: Hazard Assessment and Control — Page 2 of 11
Monitor: Director, Health, Safety & Environment — Element No.: 02

Health & Safety Program Element: Hazard Assessment and Control — Page 1 of 11
Monitor: Director, Health, Safety & Environment — Element No.: 02

1 Purpose

2 Scope

3 Definitions

4 Referenoec

6 Responsibilities

7 Hazard Identifioation

8 Hazard Assessment and

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Element 02
Hazard Assessment and Control

Responsibilities - NTPC

- **Ensure:**
  - a process is in place to develop and implement the program.
  - resources, time, money, and technology are available.
  - performance of management and workers is measured.
  - training is provided to workers.

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Element 02
Hazard Assessment and Control

Responsibilities - Management

- Ensure development, implementation, and use.
- Take corrective action and ensure compliance with standards, procedures, guidelines, rules, and practices.
- Measure performance of workers.

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Element 02
Hazard Assessment and Control

Responsibilities - Workers

- Trained in the Hazard Assessment and Control program.
- Comply with requirements of the Hazard Assessment and Control program.

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Element 02
Hazard Assessment and Control

Responsibilities – Health & Safety Department

- Provide advice and assistance in development, implementation, and use of the program.
- Provide interpretation of generalized processes, industry best practice, and legislation for the development of the Hazard Assessment and Control program.

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Element 02
Hazard Assessment and Control

Responsibilities – Health & Safety Department

- Monitor applicable legislation and update the Hazard Assessment and Control program as required.
- Assist with training workers in the Hazard Assessment and Control program as required.

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HAZARD
RISK

Element 02
Hazard Assessment and Control

Definitions

Hazard

A condition, device, or substance that could cause injury, damage, or loss.

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Element 02

Hazard Assessment and Control

Definitions

Risk

The probability of an unwanted event occurring due to a specific hazard.

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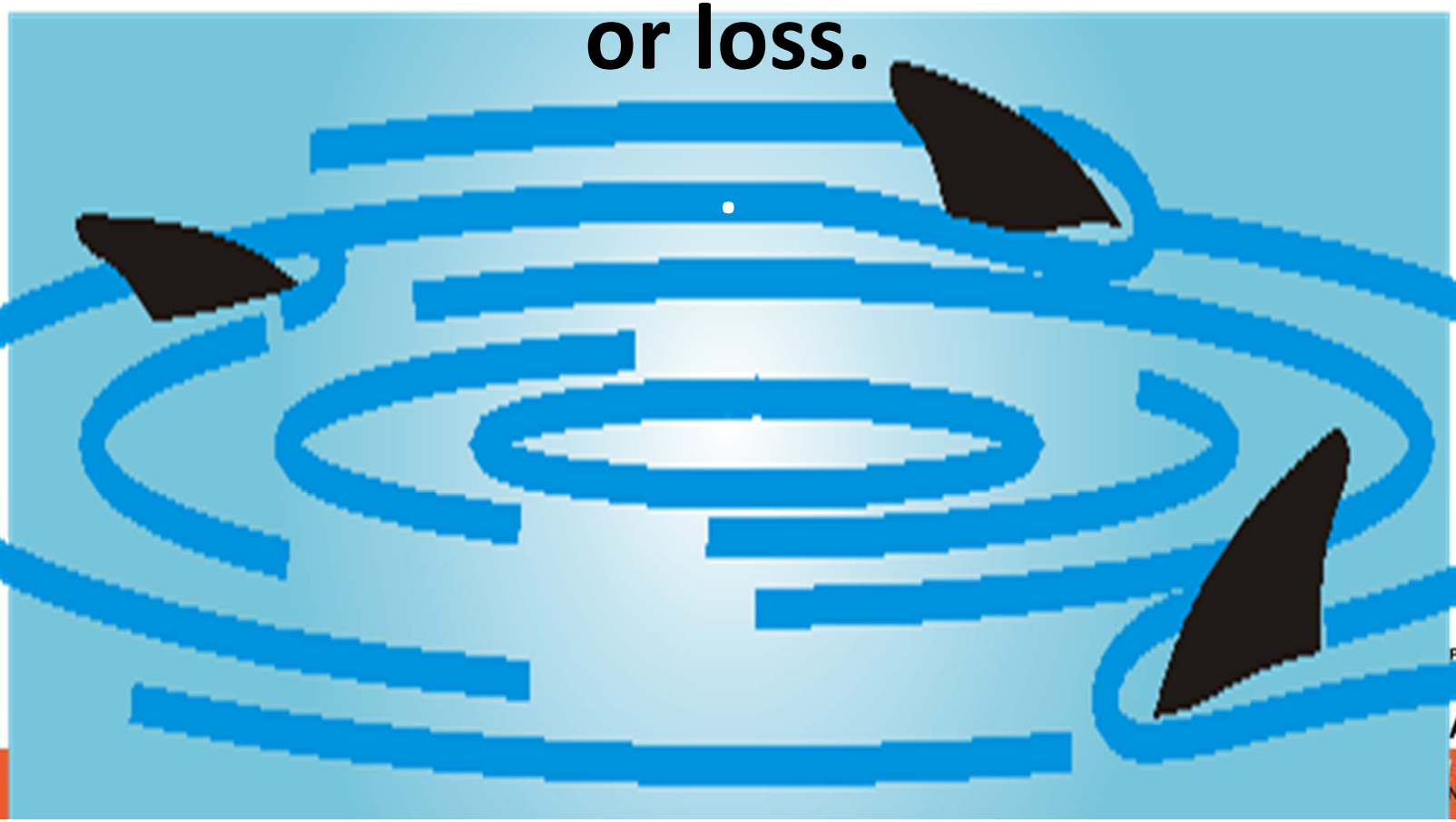
Hazard

A condition, device, or substance that could cause injury, damage, or loss.



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Risk

The probability of an unwanted event occurring due to a specific hazard.

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Element 02
Hazard Assessment and Control

Definitions

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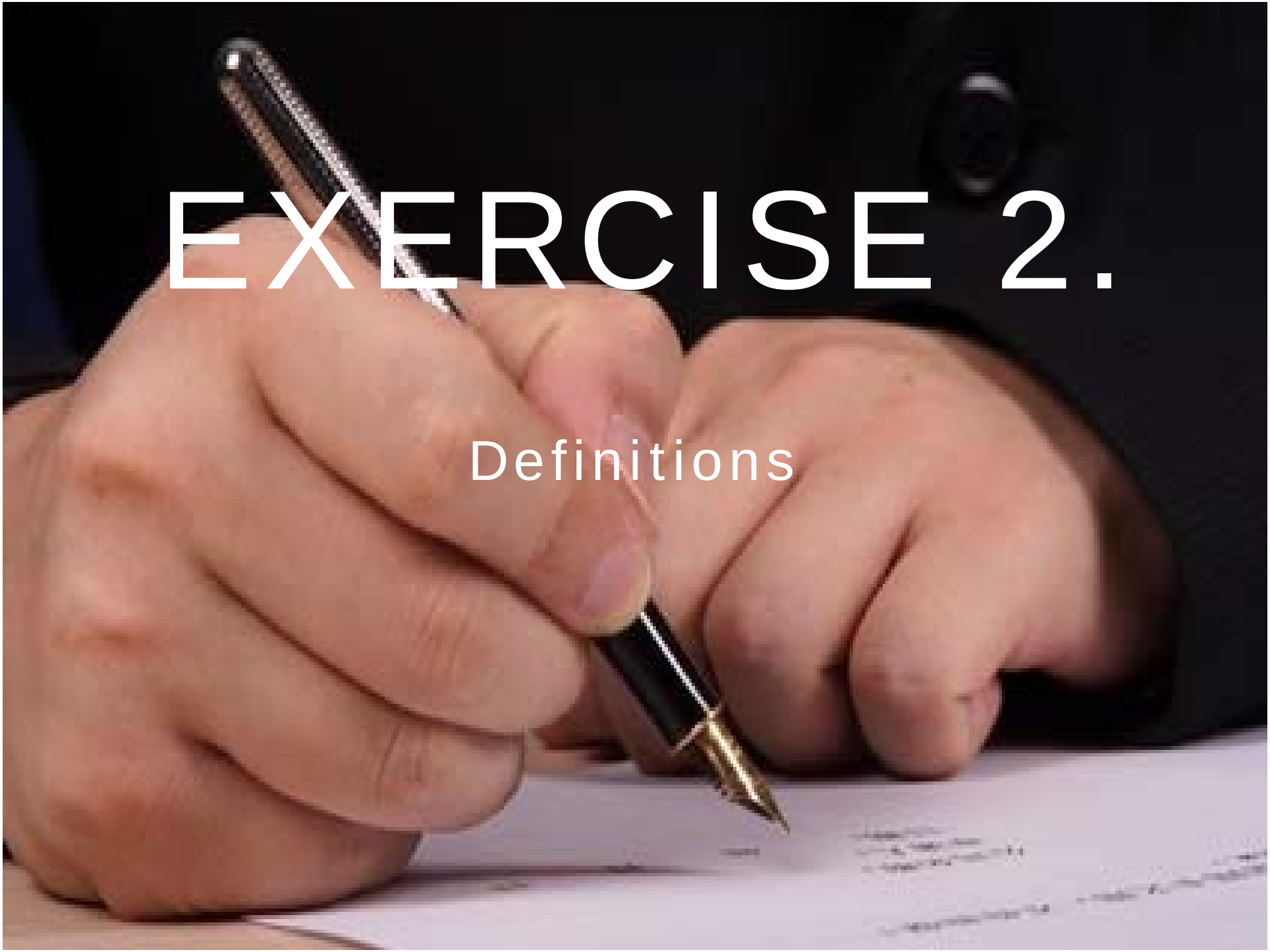

EXERCISE 2.

Definitions

Exercise 2. Definitions

Term	Definition
Hazard	A condition, device, or substance that could cause injury, damage, or loss.
Risk	The probability of an unwanted event occurring due to a specific hazard.
Hazard Identification	Formal recognition and documentation of hazards
Risk Assessment	Evaluation of the risks associated with each hazard.
Risk Control	Reducing the Risk Level using barriers and controls.
Risk Score	Risk is measured in terms of consequence, exposure, and probability, which are combined together to form the Risk Score.
Risk Level	The level of risk assigned following Risk Assessment (i.e., low, moderate, high, extreme).
Job Safety Analysis (JSA)	A systematic breakdown of a job into tasks/steps in order to identify hazards, assess risks, and select appropriate controls.

SPOT THE HAZARDS

HAZARD ASSESSMENT AND CONTROL PROCESS

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Hazard Assessment and Control Process

Hazard Assessment and Control is the process used to Identify, Assess, and Eliminate or reduce workplace hazards.

1. Hazard Identification
2. Risk Assessment
3. Hazard Control Development
4. Hazard Control Implementation
5. Monitoring and Reporting

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HAZARD IDENTIFICATION

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HAZARD IDENTIFICATION

Purpose

- A hazard that has not been identified cannot be managed.
- This step seeks to identify the hazards and risks to be managed.

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HAZARD IDENTIFICATION

Purpose

- Comprehensive identification using a well-structured systematic process is critical
- Because a hazard not identified at this stage may be excluded from further analysis.
- Identification should include hazards whether or not they are under control.

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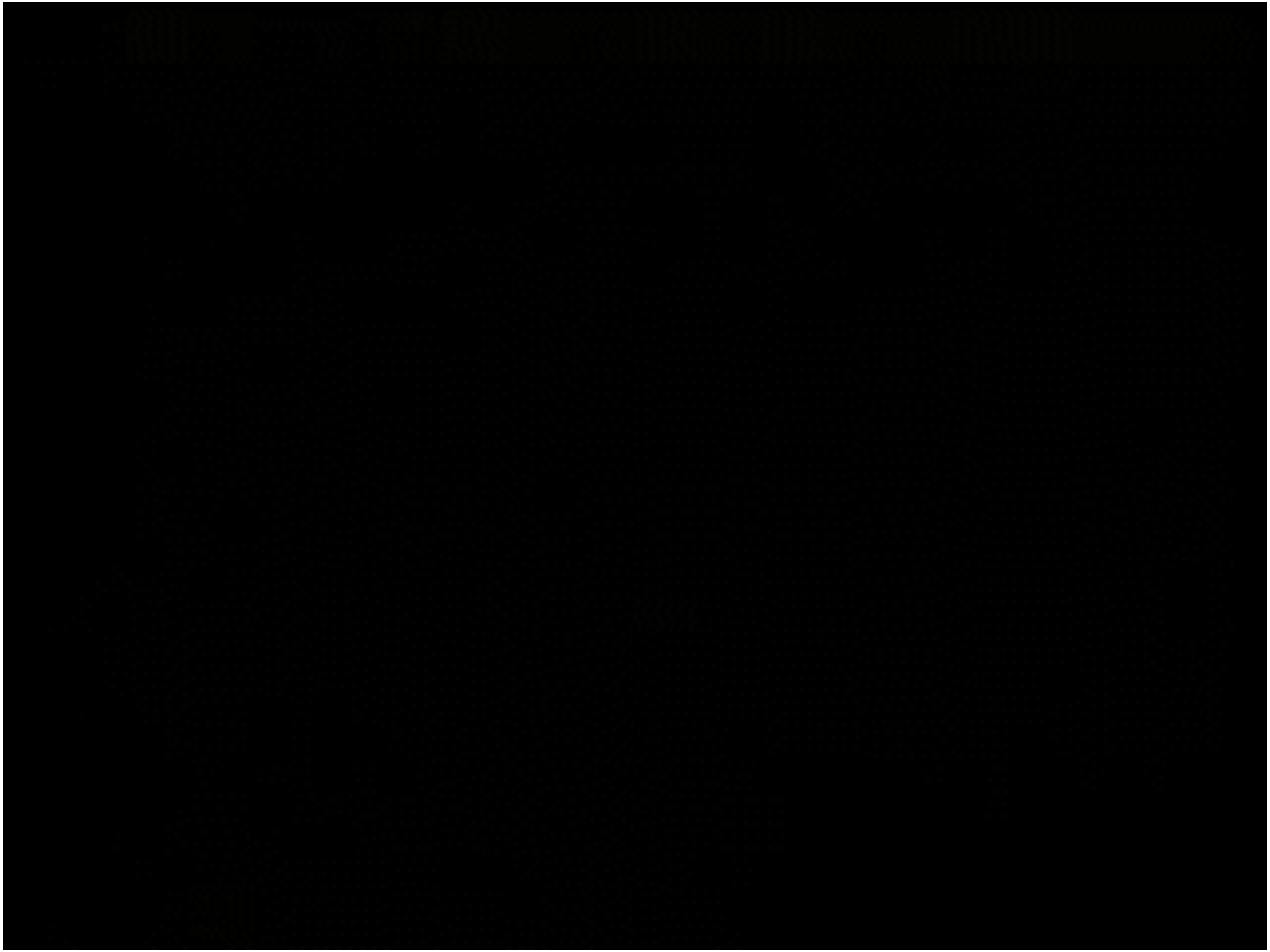
EXERCISE 3.

Blind Mans Bluff



HAZARD IDENTIFICATION

How do we identify hazards in the workplace at NTPC?

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HAZARD IDENTIFICATION

- Worksite Hazard Analysis
- Tailboard Meetings
- Job Safety Analysis
- Incident Reports
- Concern Reporting
- Worksite Visits
- Equipment Hazard Assessment
- Ergonomics and Manual Handling
- Working Alone

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HAZARD IDENTIFICATION

Worksite Hazard Analysis

- **A Worksite Hazard Analysis identifies existing and potential hazards associated with all NTPC occupations.**
- ***Form 2.1: Worksite Hazard Analysis Database* lists all NTPC occupations.**

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HAZARD IDENTIFICATION

Tailboard Meetings

- **Tailboard Meetings are held prior to work beginning to identify existing and potential hazards and suitable controls.**

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HAZARD IDENTIFICATION

Job Safety Analysis

- **A Job Safety Analysis (JSA) is conducted to identify existing and potential hazards in new, modified, or existing jobs.**

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HAZARD IDENTIFICATION

Incident Reports

- **Existing and potential hazards are identified through the review of incident and investigation reports.**

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HAZARD IDENTIFICATION

Concern Reporting

- Existing and potential hazards are identified through Concern Reports
- Provide an open, structured, and consistent communication channel for workers to report:
  - Safety
  - Environmental
  - Property damage, and
  - Ergonomic concerns.

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HAZARD IDENTIFICATION

Worksite Visits

- **Are a type of work monitoring completed by managers to determine how well work is meeting NTPC health & safety practices and procedures.**

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HAZARD IDENTIFICATION

Equipment Hazard Assessment

- **Existing and potential hazards associated with equipment are identified through the completion of:**
  - ***Form 14.06.1: Equipment Hazard Identification & Risk Assessment*.**

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HAZARD IDENTIFICATION

Ergonomics and Manual Handling

- Surveys of manual handling activities and workplace ergonomics are conducted to identify the associated hazards and to place in priority order the jobs or tasks which require risk assessment.

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HAZARD IDENTIFICATION

Working Alone

- **Working Alone Assessments are conducted to document the nature and location of the work activity and associated hazards.**

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SPOT THE HAZARDS

HAZARD CATEGORIES

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HAZARD CATEGORIES

Hazard categories applicable to NTPC operations

- Biological Hazards
- Chemical Hazards
- Environmental Hazards
- Physical Hazards (energy or force)
  - Physical
  - Energy
  - Ergonomic
  - Manual Handling
  - Mechanical
- Psychological Hazard

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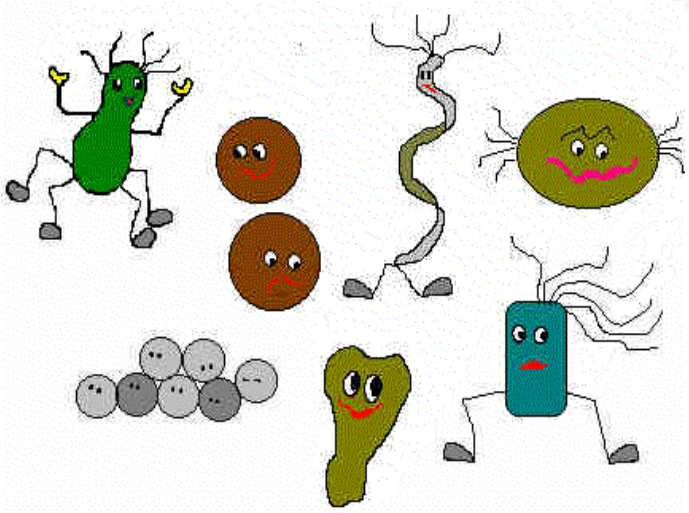
HAZARD CATEGORIES

- **Biological Hazards**
  - Living organisms such as bacteria, viruses, moulds, fungi, and parasites that can cause illness or disease.



HAZARD CATEGORIES

- **Chemical Hazards**
  - **Gasses, vapours, liquids, solids, dust, fumes, or mists that can be flammable, toxic, corrosive, reactive, or explosive.**

HAZARD CATEGORIES

- **Environmental Hazards**
  - **Presented by the natural environment and climatic conditions (e.g., rain, ice, snow, cold/hot weather).**

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HAZARD CATEGORIES

PHYSICAL HAZARDS (ENERGY OR FORCE)

- **Physical**
  - **Moving equipment, noise, vibration, temperature extremes, work at heights, slip/trip hazards.**

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HAZARD CATEGORIES

PHYSICAL HAZARDS (ENERGY OR FORCE)

- **Energy**
  - **Electricity, pneumatic pressure, hydraulic pressure, steam, heat, stored energy.**

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HAZARD CATEGORIES

PHYSICAL HAZARDS (ENERGY OR FORCE)

- **Ergonomic**
  - **Equipment or processes that place undue strain on the body by repetition, force, and posture.**

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HAZARD CATEGORIES

PHYSICAL HAZARDS (ENERGY OR FORCE)

- **Manual Handling**
  - Lifting or moving items.

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HAZARD CATEGORIES

PHYSICAL HAZARDS (ENERGY OR FORCE)

- **Mechanical**
  - **Moving parts such as rotating shafts, belts, blades, and saws.**

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HAZARD CATEGORIES

- **Psychological Hazard**
  - The organization, design, and management of work can cause psychological harm and affect a worker's general well-being
  - Due to factors such as poor work conditions, harassment, violence, and overwork.

HAZARD CATEGORIES

- Hazards are identified in the second column on the tailboard meeting form
- Identify the hazard and the consequence.

For example:

“Back strain from lifting heavy objects” or “Hearing loss from noise”

NORTHWEST TERRITORIES POWER CORPORATION Empowering Communities	Health & Safety Management System Form: Tailboard Meeting	Page 1 of 2
	Monitor: Director, Health, Safety & Environment	Form #: 2.3

Job:		Date & time:
Location:		Worker in Charge:
Emergency Response		
System Control: (867) 669-3370	Fire:	Police:
Medical/ambulance:	Other:	First Aider:
Muster point:		AED location:
Estimated emergency response time:		
Rescue plan (e.g., heights, confined space, remote areas):		

Job Steps & Tools	**Hazards** (examples on page 2)	**Controls** (hierarchy on page 2)
I		
Work Protection in place (type, number, holder, apparatus):		

Please write legibly.

Hard copies of this document are considered uncontrolled. Please refer to the Powerline for the latest version.

EXERCISE 4.

Hazard Identification

SPOT THE HAZARDS

RISK ASSESSMENT

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RISK ASSESSMENT

- **A Risk Assessment:**
  - is performed to assess each identified hazard and evaluate the risks of an unwanted event associated with that hazard.
- **Aim:**
  - is to estimate likelihood and consequences in the context of any existing control measures

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QUALITATIVE ANALYSIS

- Uses words to describe
  - magnitude of potential consequences
  - likelihood
- Factual information and data
- Initial screening activity
- Numerical data are inadequate

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QUANTITATIVE ANALYSIS

- Numerical values
  - Consequences
  - Likelihood
- Quality of analysis - validity of matrix
- Consequences and likelihood are combined to provide a level of risk

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EXERCISE 5.

Risk Ranking

SITUATION	Ranking
Swimming	
Sport Parachuting	
Playing Rugby Football	
Smoking more than 20 cigarettes per day	
Driving to work each day	
Living 1 km from a pesticide manufacturing plant	
Living 1 km downstream from a dam	
Working as a coal miner	
Working in the chemical industry	
Walking outside in a thunderstorm	

SITUATION	Ranking
Swimming	5
Sport Parachuting	6
Playing Rugby Football	8
Smoking more than 20 cigarettes per day	1
Driving to work each day	2
Living 1 km from a pesticide manufacturing plant	7
Living 1 km downstream from a dam	9
Working as a coal miner	3
Working in the chemical industry	4
Walking outside in a thunderstorm	10

RISK MATRIX

- Show consequences and likelihood that establishes the level of risk
- Suitable scales and methods

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CONSEQUENCES						LIKELIHOOD				
	PEOPLE	ASSETS	ENVIRONMENT	REPUTATION	GENERATION/ FINANCIAL	A	B	C	D	E
						Practically impossible	Not likely to occur	Could occur or I've heard of it happening	It is known to occur or "it has happened"	Common or occurs frequently
1	First Aid Injury	Slight Damage (<$10k)	Slight effect	Slight impact	Slight impact on revenue/ finances (<$10k)	Low	Low	Medium	Medium	High
2	Medical treatment Injury	Component level replacement/ repair ($10k-$100k)	Minor effect	Limited impact	Partial output reduction or equivalent ($10k-$100k)	Low	Medium	Medium	High	Extreme
3	Lost Time Injury less than 7 days	Equipment level replacement/ repair ($100k-$5m)	Localised effect	Local area impact	Unit off line <4hrs or equivalent ($100k-$5m)	Medium	Medium	High	Extreme	Extreme
4	Lost Time Injury more than 7 days or fatality	Unit level damage ($5m-$50m)	Major effect	State wide impact	Unit off line >4hrs or equivalent ($5m-$50m)	Medium	High	Extreme	Extreme	Extreme
5	Multiple Fatalities	Multiple unit capability damage (>$50m)	Massive effect	National impact	Multiple units off line (>$50m)	High	High	Extreme	Extreme	Extreme

RISK ASSESSMENT

NTPC Risk Matrix

- Determine the most reasonable probable consequence that could result from unwanted event.
- Determine the frequency of exposure to the specific situation or condition (hazard).
- Determine the probability of the unwanted event given the most likely reasonable consequence and the frequency of exposure.
- Add three factors together to determine Risk Score.
- Compare the Risk Score to the Risk Levels and Action.

EXERCISE 6.

Risk Assessment

SPOT THE HAZARDS

HAZARD CONTROL DEVELOPMENT

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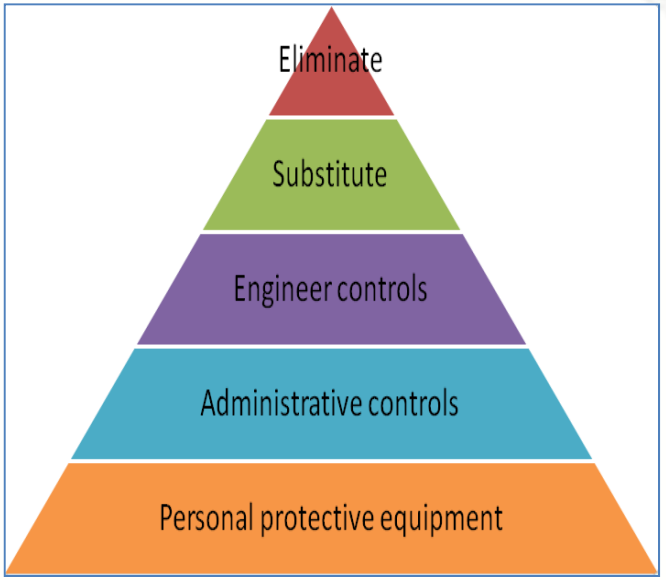
HAZARD CONTROL DEVELOPMENT

- Hazard controls are measures taken to reduce the risks associated with hazards in the workplace.
- Appropriate solution shall be selected to control each hazard.



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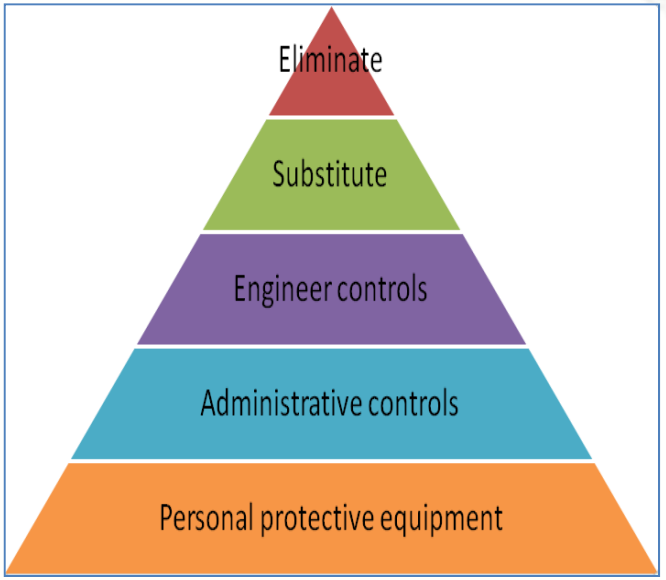
HAZARD CONTROL DEVELOPMENT

- **Having identified a hazard and assessed its risk, you then need to consider what action/s you can take to control the risk**



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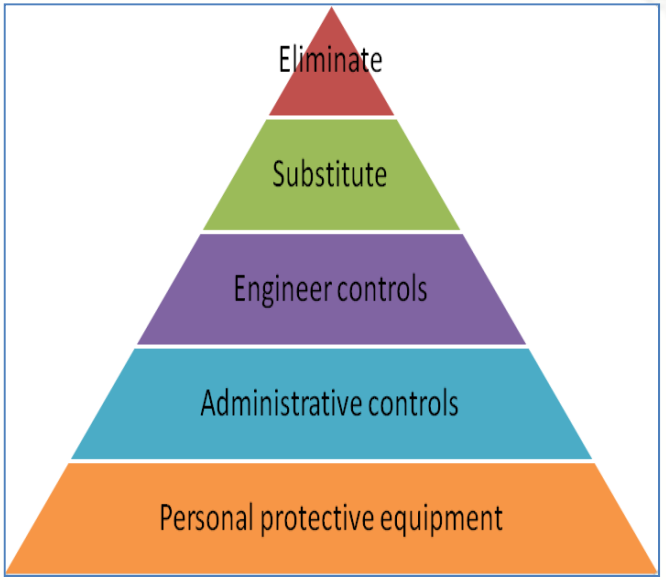
HAZARD CONTROL DEVELOPMENT

- **In high-risk situations:**
  - **you might also need to consider applying short-term control measures; while**
  - **the most appropriate long-term controls are identified, designed & implemented**



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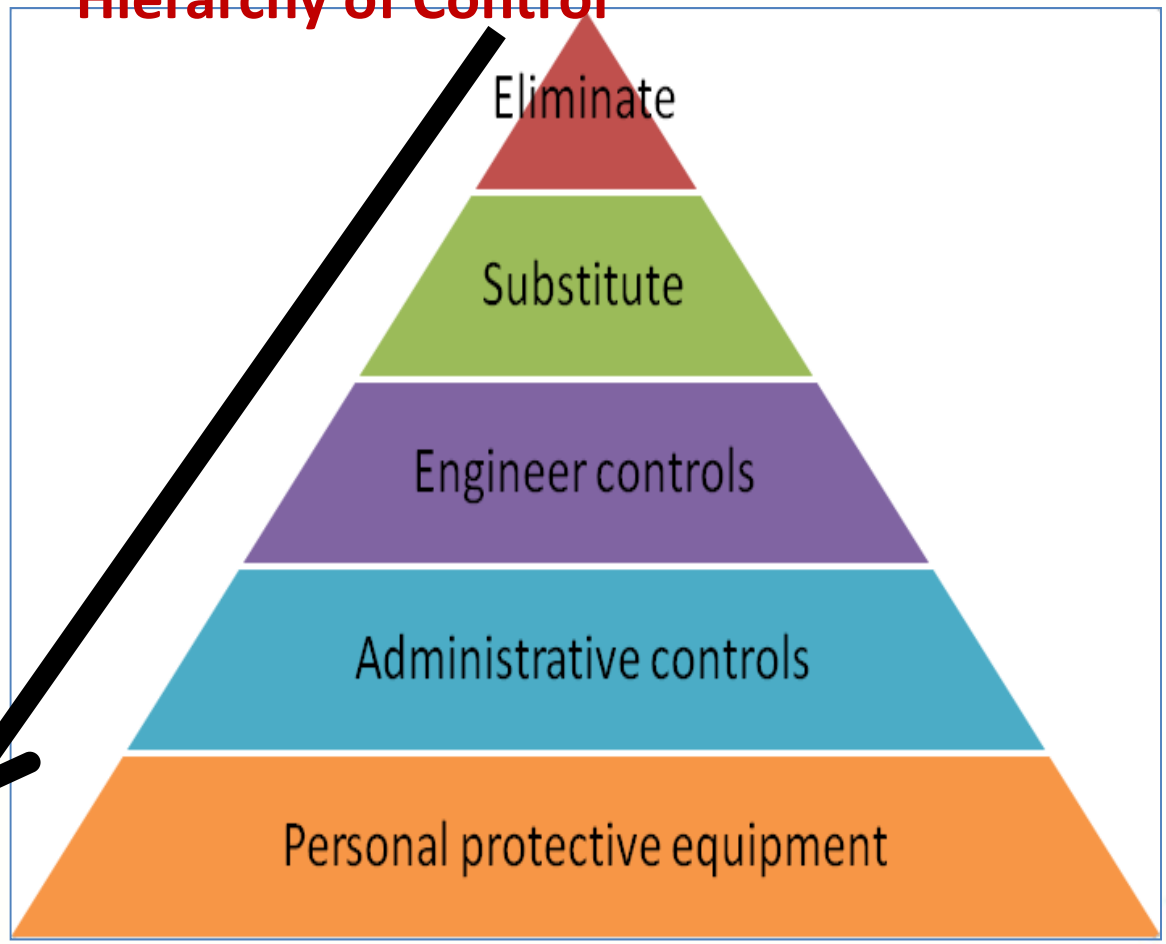
HAZARD CONTROL DEVELOPMENT

Hierarchy of Control



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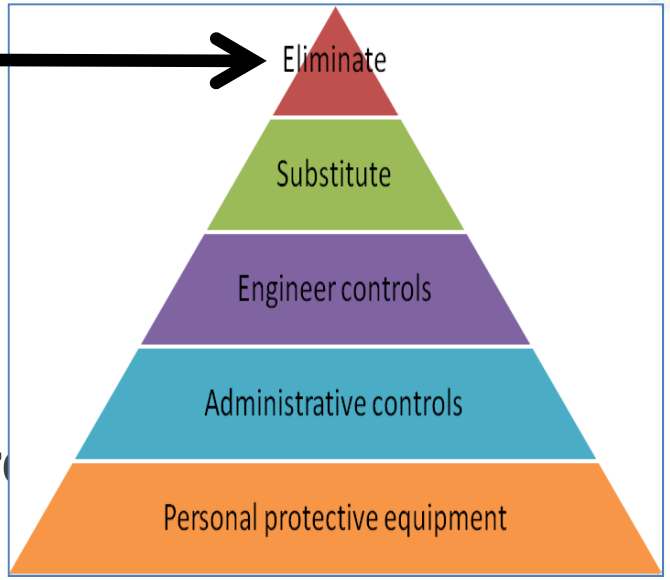
HAZARD CONTROL DEVELOPMENT

- **Elimination**
  - Eliminating the hazard is the best method of control.
  - Process of eliminating the workplace condition, equipment, chemical, or act causing the hazar
  - Example:
    - Removing objects that could be tripping hazards.
    - Conduct work scheduled for a very cold day in warmer weather.



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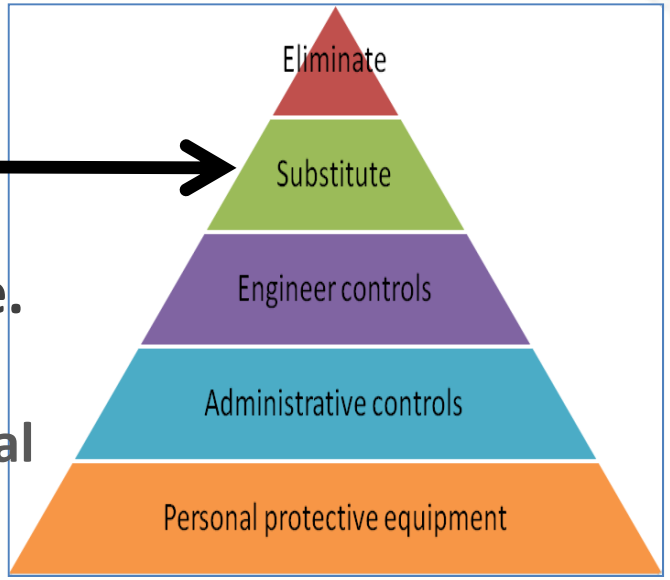
HAZARD CONTROL DEVELOPMENT

- **Substitution**
  - Substituting a work method, person, substance, tool, or equipment for less hazardous one.
  - Examples:
    - Substituting the need for electrical cords across walkways by installing more electrical outlets.
    - Substituting chemical cleaners with less toxic agents.



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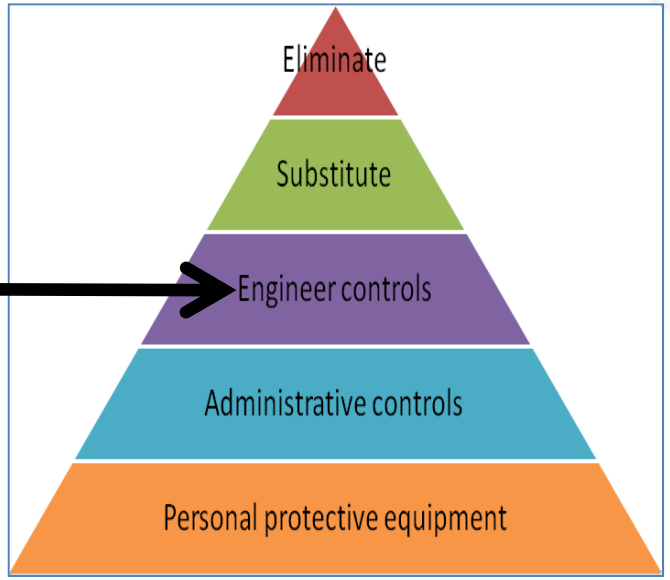
HAZARD CONTROL DEVELOPMENT

- **Engineering**
  - Engineering controls are methods build into the design of a plant, equipment, or process to minimize, eliminate, or contain the hazard.
  - Very reliable with proper design, use, and maintenance.



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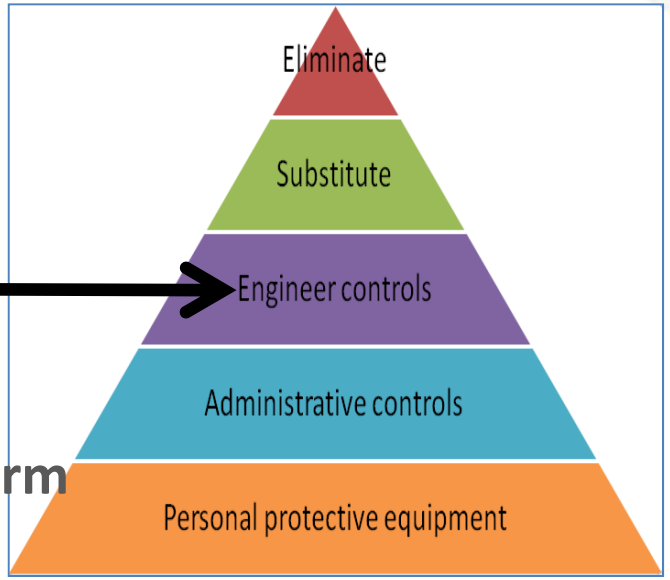
HAZARD CONTROL DEVELOPMENT

Engineering Examples:

- **Isolation:** Keep the hazard away from workers using control rooms, machine guards, protective barriers, security fences, guardrails, and clearance distances.
- **Process:** Change the way workers perform a job activity or process to reduce risk, such as automating a process to reduce the amount of manual handling.
- **Ventilation:** Provide ventilation to improve air quality to an acceptable and safe level.



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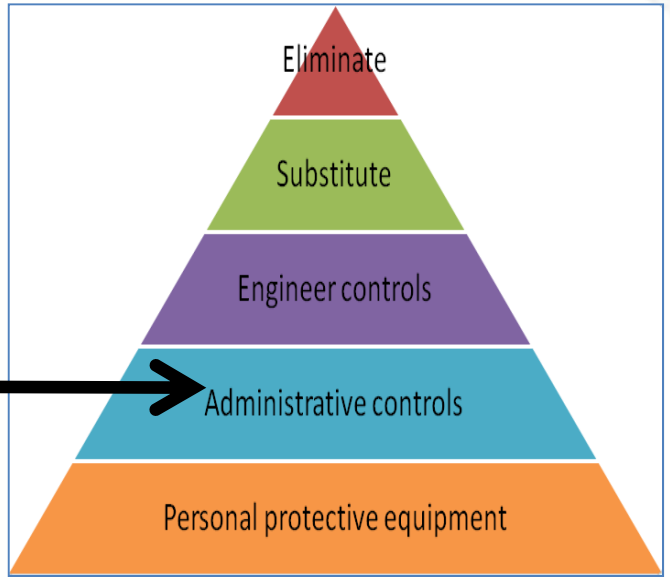
HAZARD CONTROL DEVELOPMENT

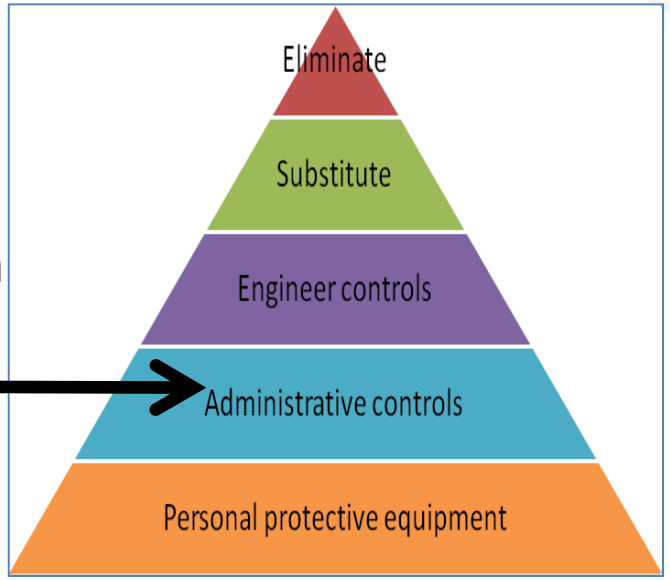
- **Administrative**
  - Administrative controls limit worker exposure to a hazard.
  - They do not eliminate the hazard, but they provide an acceptable way to work around the hazard.



HAZARD CONTROL DEVELOPMENT

Administrative Examples:

- **Procedures:** Safe Work Practices and or Safe Job procedures.
- **Reduction:** Reduce frequency with which one worker performs a hazardous task.
- **Rotation:** Rotate workers to reduce exposure time.
- **Training:** Train workers to recognize the hazards and employ safe work practices.
- **Maintenance:** Procedures for ongoing maintenance of equipment and facilities.
- **Inspections:** Establish regular formal safety inspections and safety audits.



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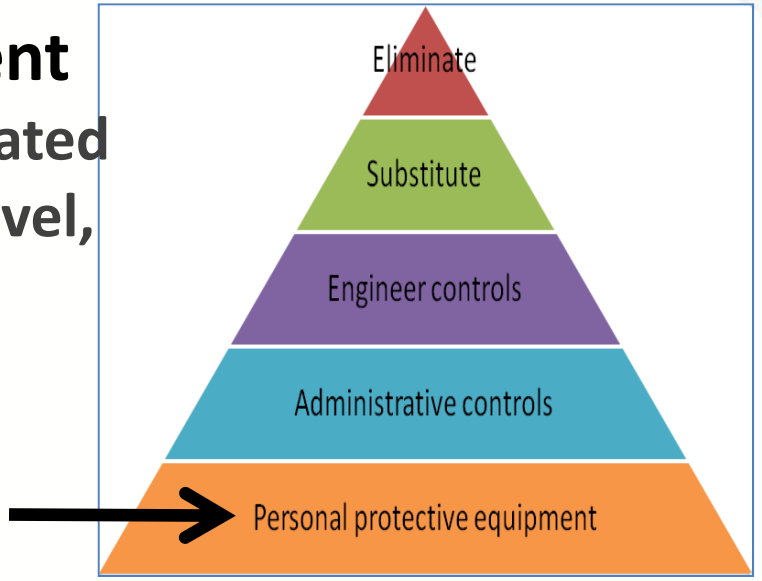
HAZARD CONTROL DEVELOPMENT

- **Personal Protective Equipment**
  - If the hazard cannot be eliminated or reduced to an acceptable level, the worker must be protected from exposure.
  - This protection requires the worker to wear or use appropriate PPE.
  - PPE is the last line of defence and is a critical part of a health & safety program.



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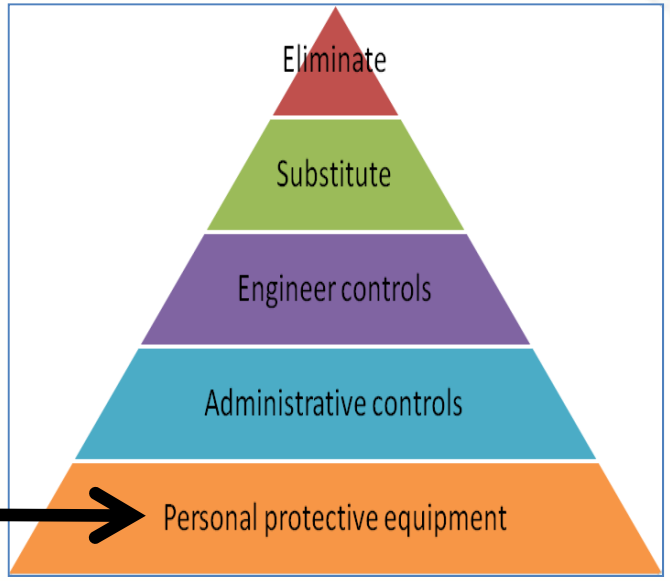
HAZARD CONTROL DEVELOPMENT

- **Personal Protective Equipment**
  - **Examples:**
    - **Rubber gloves**
    - **Hard hat**
    - **Safety glasses**
    - **Fall protection**
    - **Respiratory protective equipment**



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HAZARD CONTROL DEVELOPMENT

- **Hazard Controls are identified in the third column on the tailboard meeting form**
- **Identify the control and the action to take.**

For example:

"Review SWP 1.07 Manual Lifting and Handling" or "Wear Hardhat"

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Health & Safety Management System Form: Tailboard Meeting	Page 1 of 2
Monitor: Director, Health, Safety & Environment	Form #: 2.3

Job:	Date & time:
Location:	Worker in Charge:

Emergency Response		
System Control: (867) 669-3370	Fire:	Police:
Medical/ambulance:	Other:	First Aider:
Muster point:		AED location:
Estimated emergency response time:		
Rescue plan (e.g., heights, confined space, remote areas):		

Job Steps & Tools	Hazards (examples on page 2)	Controls (hierarchy on page 2)

Work Protection in place (type, number, holder, apparatus):

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Hard copies of this document are considered uncontrolled. Please refer to the Powerline for the latest version.

EXERCISE 7.

Hazard Control Development

SPOT THE HAZARDS

HAZARD CONTROL IMPLEMENTATION

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HAZARD CONTROL IMPLEMENTATION

- **Hazard controls:**
  - **shall be implemented to reduce the risk of harm.**
  - **may be applied as a single control measure or as combination of controls.**
  - **may be applied as short term/temporary or long term/permanent measures.**

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HAZARD CONTROL IMPLEMENTATION

- **Developing/updating Safe Job Procedures/Safe Work Practices**
  - **To include new hazard controls**
  - **Consideration should be given to both the operation and maintenance requirements of the new control measures.**
    - **Refer to *Element 03: Safe Work Practices*.**
    - **Refer to *Element 04: Safe Job Procedures*.**

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HAZARD CONTROL IMPLEMENTATION

- **Communication and Training**
  - **Workers affected by new hazard controls shall be informed of the changes and reasons for the changes.**
  - **The training needs relating to the hazard control changes shall be identified and the training shall be conducted.**
    - **Refer to *Element 08: Training and Communication*.**

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HAZARD CONTROL IMPLEMENTATION

- **Supervision and Review**
  - Once training is completed, managers shall check that the new hazard control measures are being implemented as required.
  - Checks and reviews shall be more frequent immediately after the control measure has been introduced.

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EXERCISE 8.

Hazard Control Implementation

MONITORING AND REPORTING

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MONITORING AND REPORTING

- **Hazard controls shall be reviewed regularly to ensure they are effectively eliminating or reducing the hazards and are protecting the health & safety of workers.**

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MONITORING AND REPORTING

- **Events that may trigger the need to review/revise a hazard assessment:**
  - **Start of a new project.**
  - **Change in the work process.**
  - **Change or addition to tools, equipment, machinery, or location.**
  - **New worker.**
  - **Introduction of new chemicals.**
  - **New information becomes available about a product.**
  - **An accident, injury, or near-miss.**

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MONITORING AND REPORTING

- **Health & Safety Department:**
  - **evaluates the effectiveness of the Hazard Assessment and Control program on an annual basis**
  - **conducting a formal review of Form 2.1: Worksite Hazard Analysis Database.**

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MONITORING AND REPORTING

- **Review may also include review of the following :**
  - **Incident reports.**
  - **Incident investigation reports.**
  - **Injury statistics.**
  - **Safety inspection reports.**
  - **Health & safety audits.**
  - **Observations of the JOHSC on the effectiveness of the program.**
  - **Conditions related to the workplace & the activities of the workers.**
  - **Any other relevant information.**

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MONITORING AND REPORTING

- **Health & Safety Department shall:**
  - **develop an overview report following the review of the effectiveness of the Hazard Assessment and Control program**
  - **shall be submitted to the JOHSC for review.**

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JOB SAFETY ANALYSIS

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JOB SAFETY ANALYSIS

- **A JSA is a work planning process that includes safety as an integral factor in the way the job is done.**
- **It is a method of ensuring:**
  - **Sufficiently skilled workers, equipment, materials, and resources are allocated.**
  - **Workers involved are aware of and follow safe system of work.**

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JOB SAFETY ANALYSIS

- **A JSA shall be completed:**
  - **Where there are no current Safe Job Procedures for the work activity.**
  - **Where work processes have changed.**
  - **A JSA shall be conducted using Form 2.2: Job Safety Analysis.**

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JOB SAFETY ANALYSIS

Development

- **Step-by-Step Procedure: List activities required to perform activity in the sequence they are carried out.**
  - **Break the job into its basic steps (e.g., what is done first, what is done next) and record them in their normal order of occurrence.**
  - **Describe what is done, not the details of how it is done.**
  - **Usually three or four words are sufficient to describe each basic job stage.**

JOB SAFETY ANALYSIS

Development

- **Hazard Identification: For each task list the hazards that could cause injury when the task is performed.**
  - **For each job step, consider what incidents could occur while carrying out that step.**
  - **For example, could the worker:**
    - **Be struck by or come into contact with anything harmful?**
    - **Be caught in, on or between anything?**
    - **Fall from a height?**
    - **Suffer a strain injury?**
    - **Be exposed to anything injurious such as gas, radiation, welding, electricity, chemicals etc.?**

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JOB SAFETY ANALYSIS

Development

- **Hazard Controls: List the control measures required to eliminate or minimize the risk of injury arising from each identified hazard.**
  - **For each possible incident, consider how the job step could be performed so as to avoid the incident.**
  - **Be sure to describe specifically what precautions must be taken and what controls must be used, taking into account those already in place.**
  - **Do not use general statements such as "be more careful" or "be alert."**

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JOB SAFETY ANALYSIS

Development

- **<u>Action By:</u> Write the name of the worker responsible to implement the control measure identified.**

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JOB SAFETY ANALYSIS

Development

- **Requirements and References: List the specific requirements and references required to perform the activity which includes:**
  - **Worker Names**
  - **Training & Qualifications**
  - **Duties & Responsibilities**
  - **Required Work Protection**
  - **Hazardous Products Used**
  - **Equipment**
  - **Emergency Procedures**
  - **Worker Signoff**

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JOB SAFETY ANALYSIS

Development

- **Development of the JSA shall be completed with the full participation of all workers involved in the completion of the work.**

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JOB SAFETY ANALYSIS

Development

- The completed JSA shall be reviewed and signed by the supervisor in consultation with the workers prior to the commencement of the planned work activity.
- All workers shall read and sign the JSA in the section “Read and signed by all onsite workers”.

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JOB SAFETY ANALYSIS

Essential Elements

- Site/job specific and not generic
- Sufficient detail to cover the task
- One whole contract activity should not be subject to one general JSA
- Drafted in sequential fashion
- Understood by all members of the team

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JOB SAFETY ANALYSIS

Essential Elements

- Benefits are realized after their completion
- Learn more about the jobs
- Employees involved –
  - demonstrate improved safety attitudes and
  - increased safety knowledge
- Guide for training new employees
- Refresher training

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EXERCISE 9.

Job Safety Analysis (JSA)

SPOT THE HAZARDS

TAILBOARD MEETINGS

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TAILBOARD MEETINGS

- **Tailboard Meetings are conducted to inform workers of all possible hazards and risks associated with a job.**
- **Tailboard Meetings shall be documented on Form 2.3: Tailboard Meeting.**

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TAILBOARD MEETINGS

- The supervisor of a work group shall ensure that the Tailboard Meeting takes place.
- However the meeting may be led by any worker.
- Tailboard Meetings shall be conducted wherever one or more workers are present or involved.

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TAILBOARD MEETINGS

- **Tailboard Meetings shall be conducted prior to any work beginning and again if the personnel, scope, or conditions of the work change.**

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TAILBOARD MEETINGS

- **Completed Tailboard Meeting forms shall be:**
  - **Kept on the project file; and**
  - **Attached to any Work Protection paperwork and submitted to the System Issuing Authority**
  - **Kept on file at the plant for two years**

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- Talk
- Assign
- Identify
- Let
- Beware
- Observe
- Allow
- Review
- Determine

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- **T**alk to all crew members about the job
- **A**ssign specific duties to people.
- **I**dentify know hazards.
- **L**et everyone know what their duties are.
- **B**eware of creating additional hazards.
- **O**bserve the applicable safety rules.
- **A**llow time to do the job safely.
- **R**eview all the protective equipment needed.
- **D**etermine if everyone understands the job.

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TAILBOARD MEETINGS

Sample Tailboard

NORTHWEST TERRITORIES POWER CORPORATION Empowering Communities	Health & Safety Management System Form: Handout 03 – Tailboard Meeting	Page 1 of 2
	Monitor: Director, Health, Safety & Environment	Form #: 2.3

Job: Moving fridge from truck to coffee room	Date & time: Sept. 01, 2018 8:45 am	
Location: Inuvik Coffee Room	Worker in Charge: R. Pendragon	
Emergency Response		
System Control: (867) 669-3370	Fire: 777-2222	Police: 777-1111
Medical:	Ambulance: 777-4444	Other:
Muster point: Outside of main gate		AED location: in coffee room
Estimated emergency response time: 15 minutes		
Rescue plan (e.g., heights, confined space, remote areas): call ambulance if rescue required		

Job Steps & Tools	**Hazards** (examples on page 2)	**Controls** (hierarchy on page 2)
Open tailgate, place ramp up to tailgate	Lifting, twisting, over-exertion	Proper lifting techniques (bend at knees, straight back, load close to body). Review and follow *SWP 1.07: Manual Lifting and Handling.*
	Rough edges, pinch points	Wear gloves
Load fridge on dolly - Push to lean fridge back - Place rim of dolly under fridge	Lifting, twisting, awkward positioning, over-exertion	Proper lifting (SWP 1.07)
	Pinch points	Gloves
Wheel dolly down ramp and into building - Lean dolly back - Control descent	Lifting, awkward positioning, over-exertion	Proper lifting (SWP 1.07)
	Falling off ramp	Stay in center of ramp
	Self-closing doors	2nd person to hold open doors
Position fridge in coffee room - Remove dolly by leaning fridge - Push into position, plug in	Lifting, twisting, awkward positioning, over-exertion	Proper lifting (SWP 1.07), place fridge on floor sliders
	Pinch points	Gloves
	Electrical hazard	Ensure cord and outlet in good condition.
Work Protection in place (type, number, holder, apparatus): N/A		

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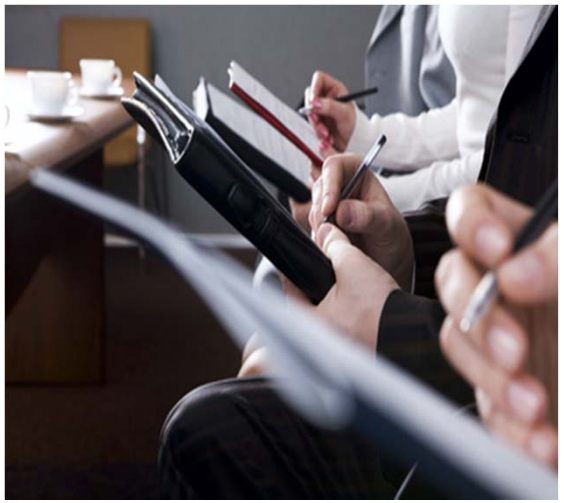
COURSE
SUMMARY

COURSE CONTENTS

1. Introduction to Risk Management
2. Element 02 Hazard Assessment and Control
3. Hazard Identification
4. Risk Assessment
5. Hazard Control Development
6. Hazard Control Implementation
7. Monitoring and Reporting
8. Job Safety Analysis
9. Tailboard Meetings



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HAZARD ASSESSMENT AND CONTROL

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