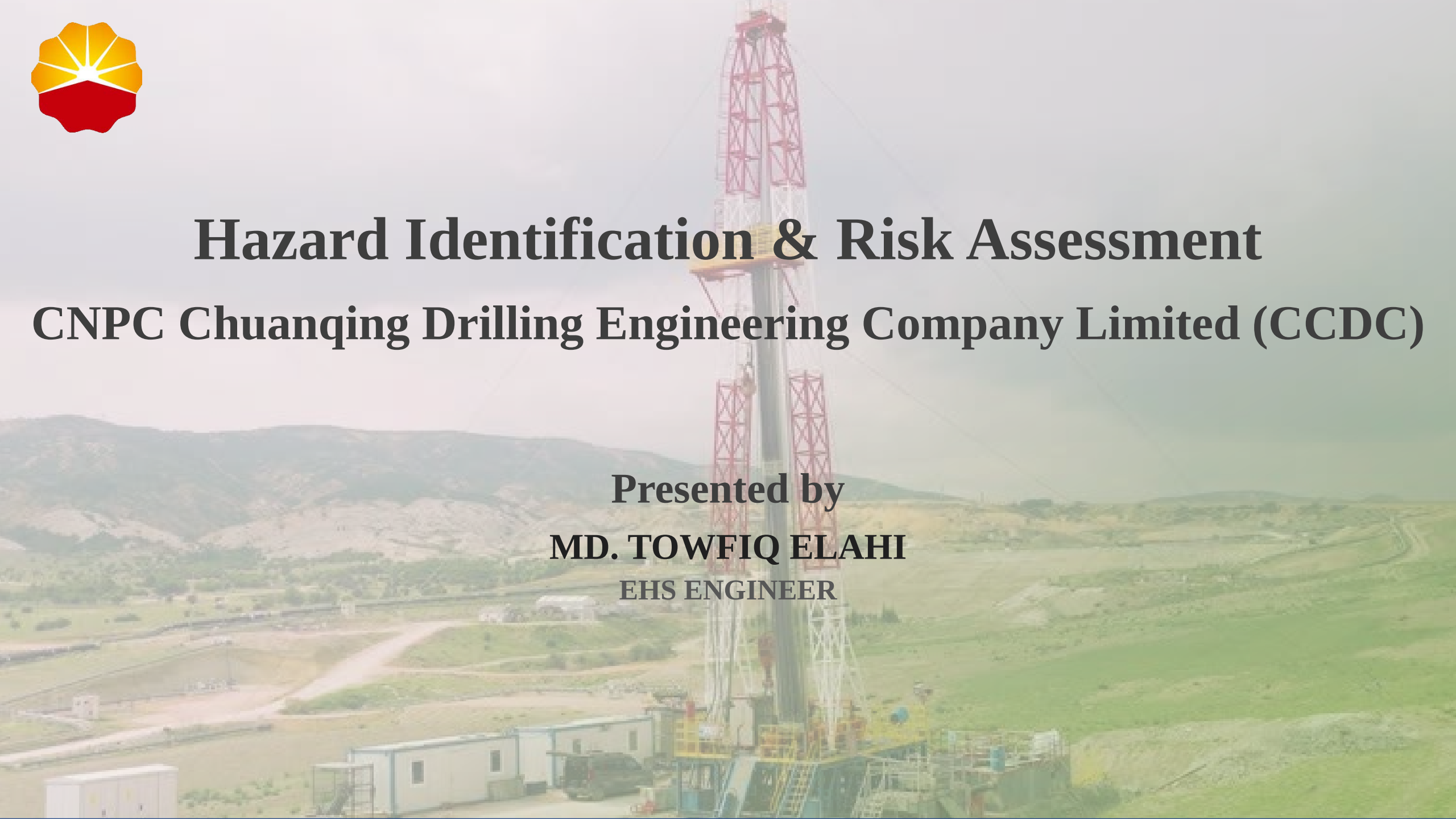

Hazard Identification & Risk Assessment

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What is Hira

Hazard **I**dentification and **R**isk **A**ssessment

What is HAZARD

Hazard is any object, condition, or activity that can cause harm to people, assets, or the environment.

Example :

- Oil-spilled floor (possibility of slipping and falling)
- Exposed live electrical wire
- Chemical substances
- Working at height

In simple words:

Hazard means – "the source of danger" or "something that can cause harm."

What is RISK

Risk is how much potential harm a specific hazard can cause, and how likely it is to happen.

Example :

- There is an oil-spilled floor, and people are walking there → High Risk
- Chemicals are stored, but locked and secured → Low Risk

In simple words:

Risk means – "how likely it is that a hazard will actually cause harm."

HAZARD Vs RISK

Classification of Hazard

1. Physical Hazard

A type of hazard that can cause bodily harm due to environmental factors, machinery, or working conditions.

Hazard (Source of Danger)	Risk
High noise	Hearing loss
Low lighting	Impaired vision

Classification of Hazard

২. Chemical Hazard

Substances that can damage the skin, eyes, airways, or internal organs.

Hazard (source of danger)	Risk
Acid/alkaline substances	Burns on the skin, damage to the eyes
Flammable substances	Risk of fire

Classification of Hazard

- Biological Hazard

Hazards that come from germs, viruses, bacteria, or other infectious substances.

Hazard (source of danger)	Risk
Blood or body fluids	HIV, hepatitis infection
Mosquitoes or pests	Dengue, malaria

Classification of Hazard

8. Ergonomic Hazard

Hazard due to wrong body posture, continuous doing the same thing or lifting heavy objects.

Hazard (source of danger)	Risk
Lifting heavy objects	Spine problems
Sitting for a long time	Back or neck pain

Classification of Hazard

c. Psychological Hazard

Hazards caused by stress, anxiety, harassment, etc.

Hazard (source of danger)	Risk
Excessive workload	Depression, suicidal tendencies
Harassment in the workplace	Loss of self-confidence, lack of interest in work

Types of Hazard

1. **Visible Hazard**

These hazards are easily visible to the eye and can be identified immediately.

Example:

- There is oil on the floor→ **Risk: Possibility of slipping and falling**
- Open electrical cable→ **Risk: Electric shock**

Types of Hazard

2. **Hidden Hazard**

This type of hazard is not visible to the eye, but hides in the work environment and can suddenly cause problems.

Example:

•Risks → toxic gas emissions (odorless): Breathing problems or fainting

Types of Hazard

3. Developing Hazard

These hazards are identified when they begin to build up slowly, and over time become a major risk.

Example:

- The railing of a stair is gradually weakening → risk: Accident of sudden collapse

Risk Assessment

A process in which a hazard is identified, the type of damage from that hazard is analyzed, and the level of risk is determined by considering the potential and impact of that hazard.

Steps of Risk Assessment:

1. **Identifying Hazards**– Finding out what dangers are possible
2. **Doing a risk analysis**– How can that hazard cause damage and how much potential it has
3. **Determination of the level of risk**– High, medium or low risk?
4. **Determination of control system**– What measures can be taken to reduce the risk
5. **Monitoring and re-evaluation**– Updating assessments over time

ঝুকি মূল্যায়ন (Risk Assessment)

Work is being carried out at height at a construction site.

- **Hazard:** Working at height without protection
- **Risk:** Serious injury or death due to fall
- **Rate:** High Risk
- **Control system:** Safety Harness, Guard Rail, Training etc.

Risk formula:

Risk = Likelihood × Consequence

This formula says, depending on the level of a risk–

How likely is that risk? (Likelihood)

How much damage or consequence can happen if this happens

Likelihood

The probability of whether a hazard will happen at all is called chance.

Class	বাংলা অর্থ	Explained	Rating
Very Unlikely	খুবই অল্প সম্ভাবনা	It almost doesn't happen	1
Unlikely	অল্প সম্ভাবনা	Can happen occasionally	2
Possible	সম্ভব	Occurs from time to time	3
Likely	সম্ভাব্য	There is a risk of regular occurrence	4
Very Likely	খুবই সম্ভাব্য	It can happen almost every day	5

Severity

If a hazard occurs, the degree of damage is called the severity of the damage.

Class	বাংলা অর্থ	Explained	Rating
Negligible	খুবই সামান্য	Small cuts, slight pain	1
Minor	ছোটখাটো	Mild injury, requiring first aid	2
Moderate	মাঝারি	Doctor's advice is needed,	3
Significant	গুরুতর	Long-term damage, hospitalization	4
Severe	মারাত্মক	Permanent disability or death	5

Example: Working at height at construction site

Hazard:

An employee is working at a height of 15 feet, but he is not using a safety harness.

Likelihood :

There is a risk of falling down

Severity

Falling from a height can cause serious injury or death I

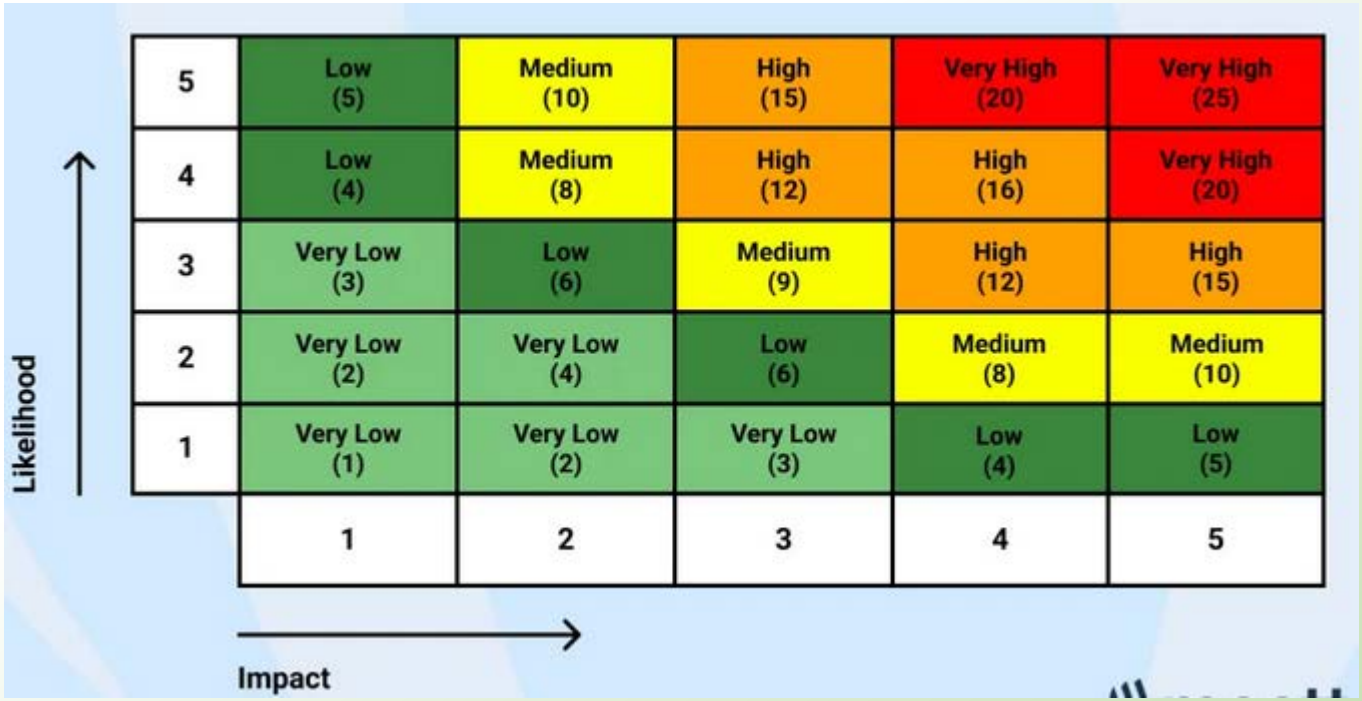
Example: Working at height at construction site

Risk Calculation:

Risk = **Likelihood** × **Severity**

=3 x 4

=12



Example: Working at height at construction site

Control Measures:

- Compulsory use of safety harness
- Monitoring & Monitoring
- Providing Training
- Ensure work permit before work at height

Hierarchy of Control:

১. **Elimination**

Removing the hazard or danger source entirely.

Example:
Changing the design that does not require work at a height eliminates the need for work at height.

২. **Substitution**

Replacing dangerous things or processes with something less dangerous.

Example:
Using less harmful chemicals instead of a toxic chemical.

Hierarchy of Control:

3. **Engineering Controls**

   To control the danger by any mechanical/technological means, separating it from the human.

   Example:

   Putting safety guards or covers around the appliance

   Chemical gas control using fume hood or extraction fan

4. **Administrative Controls**

   Reduce risk through regulations, training and work methods.

   Example:

   Work Permit System (Work Permit System)

   Training, posters and signage use

Hierarchy of Control:

5. Personal Protective Equipment - PPE

When there is still a risk after taking all of the above measures, PPE is used to protect the person. This is the last option.

Example:
Helmets, safety goggles, earplugs, gloves, safety shoes, etc.

Find the Hazard

Thank you for your attention
&
support