

Construction Site Safety



Objectives

- Creating a standardised approach that will make things **easier, safer** and deliver these benefits:
 - **Reduce HSE risk** by consistently applying the practices we know work best
 - **Deliver greater consistency** across Projects by providing a set of standard safe working practices focused on activities that have high risk and high frequency of incidents
 - **Improve experience transfer** and learning and avoid “reinventing the wheel” across Projects



The ultimate vision for our sites

**Sites
DO
the
same**

- Hazardous Activity and Safe Practice standards are understood and implemented
- Consistent approach to safety management

**Sites LOOK
the same**

- Use of consistent materials
- Sites set up based on standard principles

**GOAL
ZERO**

**Sites
KNOW
the
same**

- Teams understand how to access & use standard materials and tools, developed from best practice
- Formalised learning on and between projects

**Sites FEEL
the same**

- Everyone feels proud of their safety performance
- Everyone feels able to intervene



Topics to be covered in the presentation

What

- The construction site safety standards that are available for everyone (PDO and contractors) to use. The contents are the key controls / requirements, either from PDO specifications, procedures, guidelines or from common good practice.

How

- They can be used as checklists during the site verification before validating the permit to work, and for inspections or audits during the work.

When

- They can be used as reference materials when conducting Risk Assessment or SIMOPS workshops. They can be used during Toolbox Talks as reflective learning tools.

Who

- They can help PTW Applicants, PTW Holders, Area Authorities to have quick overview of what is required to assist them during the permit to work preparations. They can also be used by Supervisors and HSE Advisors to remind them of what should be in place.



Hazardous Activities and Safe Practices

- Focused on achieving safer working practices for everyone
- The Standards exist to protect everyone working on the activities that currently cause the most severe or frequent incidents
- The standards build on the PDO Life Saving Rules and HSE Management System (CP-122)

Hazardous Activities

1. Confined space
2. Excavation
3. Heavy Equipment and Vehicle Operations
4. Hot Work
5. Lifting and Hoisting
6. Safe Isolation of Energy
7. Scaffolding
8. Simultaneous Operations
9. Working at Height

Safe Practices

- A. Barricades and Open Holes
- B. Housekeeping
- C. Line of Fire
- D. Personal Protective Equipment
- E. Routine Life Tasks
- F. Dropped Objects



The PDO Construction Site Safety Standards (CSS) materials

A Standard for each topic

CONSTRUCTION SITE SAFETY STANDARDISATION IN PROJECTS

Hazardous Activity Standard

1. Confined Space

- The Hazardous Activity and Safe Practice standards have been developed to improve everyone's safety on our construction sites. The standards reinforce the PDO HSE Management System (COP-122) and are based on the best practice that takes place in many of our projects around.
- The standards are applicable to all sites in which the HSE risks are managed under the PDO HSE Management System, or The Contractor's HSE Management System for work carried out on behalf of PDO as per PR-1171 Contract HSE Management and the Contract HSE specification (C-09).
- This document lays out the standards. The intent is not to set all requirements possible for the activities or all the requirements contained in PDO HSE Management System documentation, but rather, to provide a list of the practices that must be our bare minimum expectations for these activities. This is how we do projects at PDO.
- Further details of PDO Confined Space Entry requirements are given in PR-1148. Entry into a Confined Space.
- For a definition of terms used in this document please refer to the [glossary standard](#).
- If you would like to provide feedback or comments on any of the standards, please speak to one of our safety advisers.
- For associated materials, visit [PDO Construction Site Safety Standards - Confined Space](#)

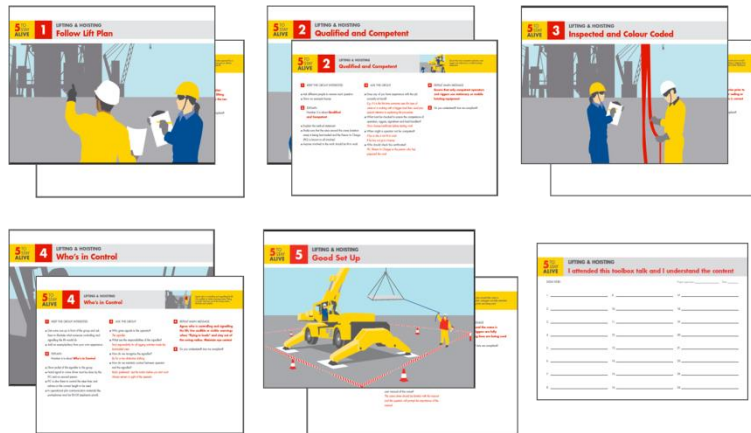


Version Date: 1st March 2016

1. Confined Spaces
 - 1.1. Work in a confined space is only carried out if it is necessary and there is not a safer way of doing it.
 - 1.2. A documented procedure describes the requirements and responsibilities of the team working in the confined space, including the rescue plan. This is reviewed and acknowledged by all involved in the work. The rescue plan shall be site-specific to account for the unique circumstances and special requirements of the particular confined space.
 - 1.3. Competent and authorized persons are appointed to conduct a risk assessment, to isolate the confined space from energy sources, to verify confined space air quality, to select appropriate respiratory protection equipment, and to participate in the confined space entry activities.
 - 1.4. A JSA is completed prior to commencing work and those working understand the hazards of the work.
 - 1.5. The confined space has been isolated, flushed clear, and vented, to eliminate hazards.
 - 1.6. A plan that includes ventilation, access and egress is in place before every entry.
 - 1.7. The Permit to Work is on display at the work location and visible to all and removed once work is finished.
 - 1.8. Locks and tags are correctly fitted to all isolation points.
 - 1.9. An access control system has been established with markings, signs, and tags and locking. A competent attendant (confined space attendant or standby person) is on duty all the time that someone is in the space and they have adequate means of communication.
 - 1.10 The appointed standby person shall maintain communication with the personnel inside the confined space and/or equivalent on Project sites not under Asset control.
 - 1.11. Functional, calibrated personal or stationary atmospheric monitor(s) are used to constantly monitor the level of oxygen, combustible gases and other toxic gases whenever someone is in the confined space. In addition to that, an authorized person periodically does a gas test on the space and documents the test before and during work within confined space. Gas monitoring meter must be capable of measuring hydrocarbons in an inert atmosphere if the confined space has been subjected to gas freeing using nitrogen. Unauthorized entry is prevented with barricading and labelling NO ENTRY.
 - 1.12 Compressed gas hoses are NEVER left inside a confined space after work has stopped. Sites that cannot meet this standard must have a PDO approved detailed procedure in place.
 - 1.13 After completion of the confined space work, all entrants have left the confined space (checked by the confined space attendant using a checklist or access system) and a means of preventing re-entry is established.
- Version Date: 1st March 2016

Available in Livelink

Toolbox talk kits for each of the topics



1. LIFTING & HOISTING Follow LIFT Plan

2. LIFTING & HOISTING Qualified and Competent

3. LIFTING & HOISTING Inspected and Colour Coded

4. LIFTING & HOISTING What's in Control

5. LIFTING & HOISTING General Tag-Tag

6. LIFTING & HOISTING I attended this toolbox talk and I understood the content

“Five to Stay Alive Posters” for each topic available in English, Hindi and Arabic



CONFINED SPACES

EXCAVATIONS

HEAVY EQUIPMENT & VEHICLE OPERATIONS

HOT WORKS

SCAFFOLDING

SIMULTANEOUS OPERATIONS

WORKING AT HEIGHT

LIFTING & HOISTING

LINE OF FIRE

SAFE ISOLATION OF ENERGY

HOUSEKEEPING

BARRICADES & OPEN HOLES

PERSONAL PROTECTIVE EQUIPMENT

ROUTINE LIFE TASKS

DROPPED OBJECTS

PDO Construction Site Safety Standards

Hazardous Activity Standard

1. Confined Space

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This links direct to the CSS documents on LiveLink

- Key main controls contained in PDO procedures, guidelines and specifications
 - No more than 1 or 2 pages of requirements
- Useful for PTW Applicants, Holders, Area Authorities and Supervisors and HSE Advisors
- Useful during PTW preparation, JSAs, HEMP reviews
- Can be used as a checklist during site verification, inspection and audits



“5 To Stay Alive” Posters for each topic

EXCAVATIONS

5 TO STAY ALIVE

Life-Saving Rules

- Work with a valid Work Permit when required
- Conduct gas tests when required
- Comply with the standards
- Intervene when you see something wrong
- Respect your co-workers

- 1 Check Permit**
Ensure permits are in place before excavating (when required). Check drawings to identify all potential obstructions and remove using non-mechanical means.
- 2 Inspect Excavation**
Make sure a competent person has verified probing and inspected the excavation for stability and obstructions, prior to work and after a change in conditions.
- 3 Check Ladders**
Install access/egress ladders and stairs no more than 7.5 meters laterally from your work location. Do not use benching (cuts into sides of excavations) for access or egress.
- 4 Protect Excavation**
Protect the excavation against cave in (sloping, shoring or benching).
- 5 No Vehicles Nearby**
Ensure nearby operating equipment does not present a potential hazard to occupants in the excavation.

List of Life Saving Rules that are related to the activities

- Posters available in Arabic, English and Hindi
- Display them in workshops, offices, at worksites
- Ensure people understand
- The posters can be used as part of Tool Box Talks

This summarises 5 key things that should be done.

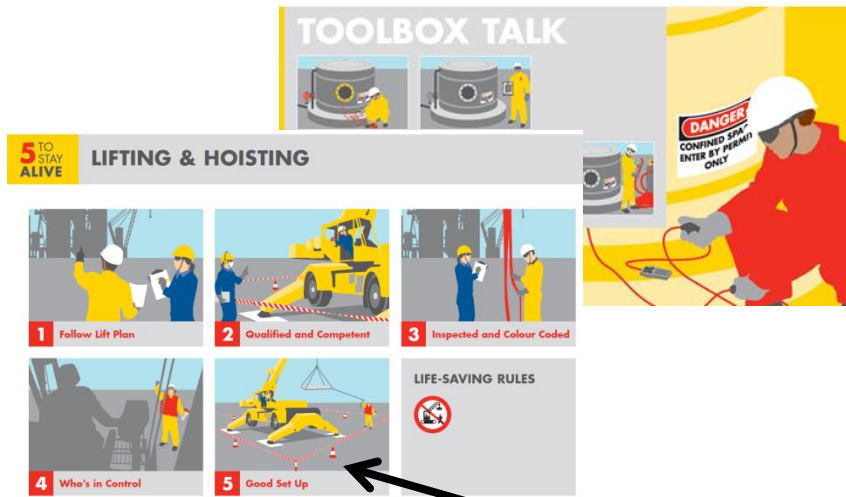
E.g. for Excavation:

- Checking permits
- Inspecting the excavation
- Checking ladders
- Protecting the excavation
- No vehicles nearby

PDO Golden Rules. Emphasize the importance of Comply, Intervene, Respect in all activities



Tool Box Talk guides for each topic.....



5 key controls aligned with the “5 to Stay Alive” posters

WHEN YOU ARE READY TO START

- 1 Introduce yourself
- 2 State the subject for this Tool Box Talk (TBT) e.g. Confined Space entry.
This is to ensure all of us are safe in this work.
We are all responsible for the safety of everyone around us.

- 3 Questions to ask the group:
 - a) What can go wrong in each activity?
 - b) What does this mean for our workplace?
 - c) Which Life Saving Rules are relevant to this job?
- 4 Explain what you will talk about in the TBT. TBT packs cover the same 5 key controls identified in the “5 to Stay Alive” posters.

THINGS TO REMEMBER

- Keep them interested
- Ensure you have two-way communication with your team
- Good practice is that the TBT is done as questions and answers so that the TBT is a more interactive and “reflective learning” experience. This will help reinforce understanding
- TBT should take about 10 – 15mins



5 Steps to follow for explaining each control...

1. Keep the Group interested

Ask questions to different people.

Maintain an eye contact with the group.

2. Explain

The importance of each control and why we have to comply. Help them understand the hazards and what controls should be in place.

3. Ask the Group

By asking the group it will help to keep their attention, help them to understand better and help them to think and eventually enhance their knowledge.

4. Repeat the main message

Repeating what needs to be done will help people to remember things and emphasize the importance of what has been discussed.

5. Do you understand? Are we Compliant?

Ask them these questions to test their understanding and to check if the controls are in place.



1 KEEP THE GROUP INTERESTED

- Ask different people to answer each question
- Circulate 10 questions for a safe lift

2 EXPLAIN

- Number 1 is about **Follow Lift Plan**
- Explain the importance of the lift plan and why we should always follow the plan
- Explain the different types of documents during the execution of a lift
- Go through the 10 questions for a safe lift

3 ASK THE GROUP

- What needs to be in the lifting plan?
Weight, distance, placement, crane location, Person In Charge (PIC)
- How do we check the lifting plan?
Check: placement of crane – weight of object – reach of crane – operator license (as attachment of permit)
- What should be in the permit about the lift?
Crane must always be part of the permit procedure
- What do we do if we have to deviate from the agreed plan?
Stop work - Make safe - reassess

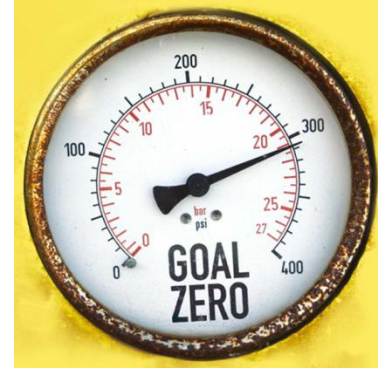
4 REPEAT MAIN MESSAGE

Develop and follow a lift plan approved by a competent lifting operations person. Review the ten questions for a safe lift

5 Do you understand? Are we compliant?



Summary



- A standardised approach will make things **easier** and **safer** and deliver these benefits:
 - **Reduce HSE risk** by consistently applying the practices we know work best
 - **Deliver greater consistency** across Projects by providing a set of standard safe working practices focused on activities that have high risk and high frequency of incidents
 - **Improve experience transfer** and learning and avoid “reinventing the wheel” across Projects



**Thank You
&
Any Questions?**



شركة تنمية نفط عُمان
Petroleum Development Oman

Back Up Slides



PDO Construction Site Safety

- Construction Site Safety Standards

Hazardous Activities

1. [Confined space](#)
2. [Excavation](#)
3. [Heavy Equipment and Vehicle Operations](#)
4. [Hot Work](#)
5. [Lifting and Hoisting](#)
6. [Safe Isolation of Energy](#)
7. [Scaffolding](#)
8. [Simultaneous Operations](#)
9. [Working at Height](#)

Safe Practices

- A. [Barricades and Open Holes](#)
- B. [Housekeeping](#)
- C. [Line of Fire](#)
- D. [Personal Protective Equipment](#)
- E. [Routine Life Tasks](#)
- F. [Dropped Objects](#)

- “5 to Stay Alive” Posters

Hazardous Activities

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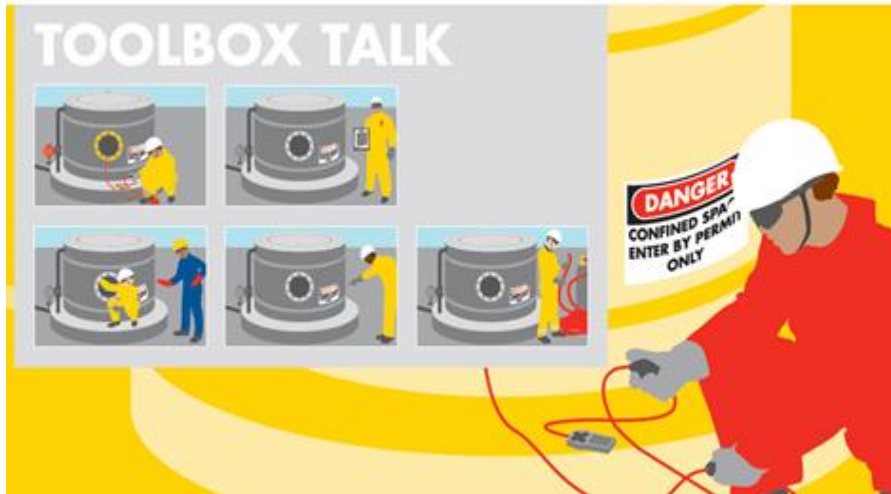
Safe Practices

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- C. [Line of Fire](#)
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- F. [Dropped Objects](#)

Please click on a topic to link to the materials in LiveLink



Tool Box Talks



Hazardous Activities

1. [Confined space](#)
2. [Excavation](#)
3. [Heavy Equipment and Vehicle Operations](#)
4. [Hot Work](#)
5. [Lifting and Hoisting](#)
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Safe of Isolation of Energy



WHEN YOU ARE READY TO START

- 1 Introduce yourself
- 2 State the subject for this Tool Box Talk (TBT) – **Safe Isolation of Energy**. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

3

Questions to ask the group:

- a) What can go wrong with Safe Isolation of Energy?
- b) What does this mean for our workplace?
- c) Which Life-Saving Rules are relevant to this job?

4

Explain what you will talk about in this TBT:

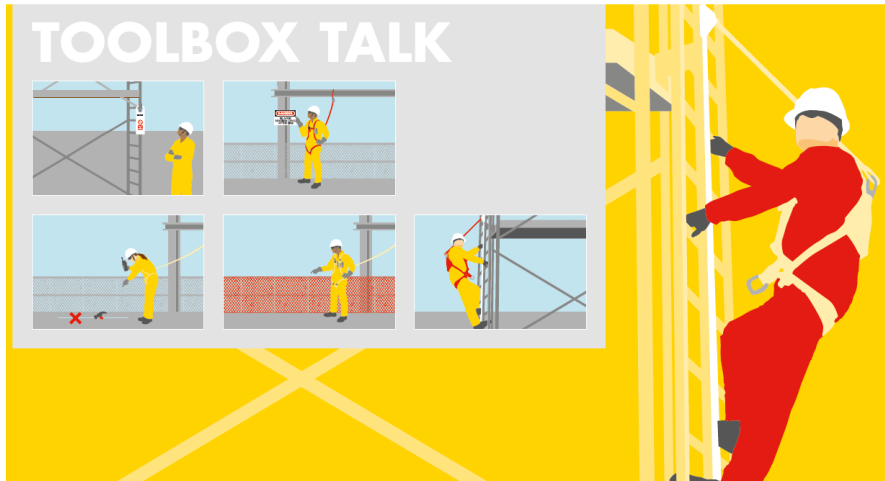
- Lock Out Tag Out
- Know the Procedure
- Get a Permit
- Safe Isolation of Energy
- Going Live

THINGS TO REMEMBER

- Electrical connections can influence the safe execution of your job
- When working at a system with hydraulic pressure isolate the source that creates the pressure



Scaffolding



WHEN YOU ARE READY TO START

- 1 Introduce yourself
- 2 State the subject for this Tool Box Talk (TBT) – **Scaffolding**. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

3

Questions to ask the group:

- a) What can go wrong with scaffolding?
- b) What does this mean for our workplace?
- c) Which Life-Saving Rules are relevant to this job?

4

Explain what you will talk about in this TBT:

- Red for Danger
- 100% Tie Off
- Safe Platform
- Stop the Drop
- Use a Yo Yo

THINGS TO REMEMBER

- Scaffolds are in general a mitigation action to create a safer work place on heights
- Scaffolds are made up of pressure points, therefore is strictly forbidden to build, change or demolish any scaffold if you're not a certified scaffold builder



Simultaneous Operations



WHEN YOU ARE READY TO START

- 1 Introduce yourself
- 2 State the subject for this Tool Box Talk – **Simultaneous Operations**. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

3

Questions to ask the group:

- a) What can go wrong with a Simultaneous Operations?
- b) What does this mean for our workplace?
- c) Which Life-Saving Rules are relevant to this job?

4

Explain what you will talk about in this TBT:

- Risks Identified
- Work Interfaces
- Permit to Work
- Communicate
- Recognize Changes

THINGS TO REMEMBER

Misalignment between different parties can lead to a dangerous and unacceptable situation, which can result in serious accidents. Some examples where SIMOPS create hazardous situations:

- Pressure testing while employees are in the direct area
- Electrical activities and water testing
- Excavations on a road which is in operation



Working at Height



WHEN YOU ARE READY TO START

- 1 Introduce yourself
- 2 State the subject for this Tool Box Talk – **Working at Height**. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

3

Questions to ask the group:

- a) What can go wrong when working at height?
- b) What does this mean for our workplace?
- c) Which Life-Saving Rules are relevant to this job?

4

Explain what you will talk about in this TBT:

- Rescue Plan
- Wear a Safety Harness
- 100% Tie Off
- Attach your Tools
- Barricade Below

THINGS TO REMEMBER

- Number 1 on the incident list, e.g. LTI 2 and 4 that occurred this year
- Working at Height is also about tools and materials falling from height Electrical activities and water testing
- Fitness to work is essential: think of afraid of heights, epilepsy, illness



Barricades and Open Holes



WHEN YOU ARE READY TO START

- 1 Introduce yourself
- 2 State the subject for this Tool Box Talk – **Barricades and Open Holes**. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

3

Questions to ask the group:

- a) What can go wrong with Barricades and Open Holes?
- b) What does this mean for our workplace?
- c) Which Life-Saving Rules are relevant to this job?

4

Explain what you will talk about in this TBT:

- Red Danger Tape
- Yellow Tape
- Tagged Hazard
- Hard Barrier
- Emergency Access

THINGS TO REMEMBER

Main hazards:

- Missing grading
- Open holes in scaffold floors
- Holes for piping route
- Holes in walkways



Housekeeping



WHEN YOU ARE READY TO START

- 1 Introduce yourself
- 2 State the subject for this Tool Box Talk – **Housekeeping**. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

- 3 Questions to ask the group:
 - a) What can go wrong with housekeeping?
 - b) What does this mean for our workplace?
 - c) Which Life-Saving Rules are relevant to this job?
- 4 Explain what you will talk about in this TBT:
 - Do Not Block
 - Clean and Go
 - Cable Trees
 - Segregate and Recycle
 - Neat and Tidy

THINGS TO REMEMBER

- Tripping incidents due to poor housekeeping
- Dropped objects
- Private housekeeping stories: at home you would do your housekeeping so why not at work?



Line of Fire



WHEN YOU ARE READY TO START

- 1 Introduce yourself
- 2 State the subject for this Tool Box Talk – **Line of Fire**. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

- 3 Questions to ask the group:
 - a) What can go wrong in a Line of Fire?
 - b) What does this mean for our workplace?
 - c) Which Life-Saving Rules are relevant to this job?

- 4 Explain what you will talk about in this TBT:
 - Job Safety Assessment
 - 360 Degrees
 - Other Works
 - Right Gloves
 - Avoid Pinch Points

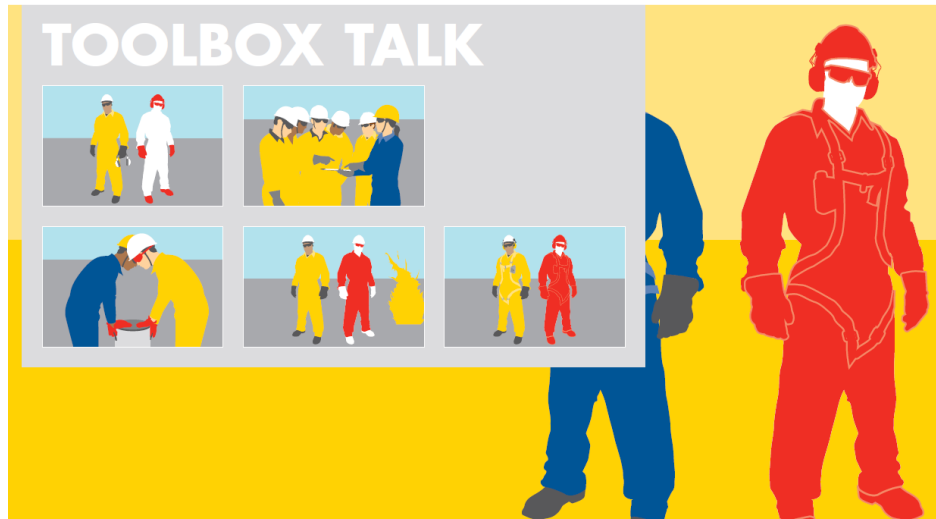
THINGS TO REMEMBER

- Severe incidents involving line of fire
- What is Line of Fire?

Line of Fire refers to those work situations where workers could be struck by a moving object which suddenly starts to move or releases its energy unexpectedly



Personal Protective Equipment



3

Questions to ask the group:

- What can go wrong with PPE?
- What does this mean for our Workplace?

4

Explain what you will talk about in this TBT:

Minimum Requirements

Assess Hazards

Right Gloves - Right Eye Protection

Check FRC Requirements

Adequate for the Job

WHEN YOU ARE READY TO START

1

Introduce yourself

2

State the subject for this Tool Box Talk –

Personal Protective Equipment. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

THINGS TO REMEMBER

- What is the standard PPE?
- What extra PPE do we have?
- Who takes care of the standard PPE?



Routine Life Tasks



3

Questions to ask the group:

- What can go wrong with Routine Life Task?
- What does this mean for our Workplace?
- Which Life-Saving Rules are relevant to this job

4

Explain what you will talk about in this TBT:

- Walking is Working
- Slips and Trips
- 3 Points of Contact
- Housekeeping
- Show Respect

WHEN YOU ARE READY TO START

1

Introduce yourself

2

State the subject for this Tool Box Talk – **Routine Life Task**. This is to ensure all of us are safe in this work. We are all responsible for the safety of everyone around us

THINGS TO REMEMBER

- Many things we do every day are a critical aspect of our safety on site and deserve special attention although they seem intuitive:
 - Walking
 - Using stairs
 - Housekeeping
 - Respect for colleagues

