



Scaffolding Basic Awareness

All scaffolding should display either a red tag or a green tag.

- Red tag – Do Not Use
 - Normally used during scaffold erection/dismantling or whilst waiting for inspection or failed inspection
 - Only work allowed on a scaffold with a red tag is erection/dismantling by TRAINED SCAFFOLD ERECTORS
- Green Tag – Safe for use
 - Signed by scaffold erection supervisor and HMEL inspector
 - Means the scaffold is safe to use but only valid for 7 days. Then must be re inspected.
 - Tag should be placed near to the ladder going up from the ground level
 - Tag will also indicate weight limit (low, medium, heavy duty)

User Responsibility

- Before going on a scaffold you MUST check it has a green tag and it has been signed within the last 7 days
- Visual check – No damage, no obvious signs that scaffolding has being changed or altered.
- Working on a scaffold WITHOUT a valid green tag is a serious safety offence
- Only use ladder for access / egress, climbing on framework is prohibited.
- Do not carry equipment up ladders in hands, always tool belt or bag otherwise use rope with bag/box to lift tools and equipment. (both hands are required for climbing)
- To prevent dropped objects, housekeeping at height must be ensured at all times, tools and equipment needs to be kept in bags/containers to prevent from falling.
- Do not lean out of handrail
- Do not stand on scaffold handrails
- IN high wind, heavy rain or fog, the supervisor will make a decision as to if it is safe for work to continue.

Fall protection (full body harness, double lanyard)

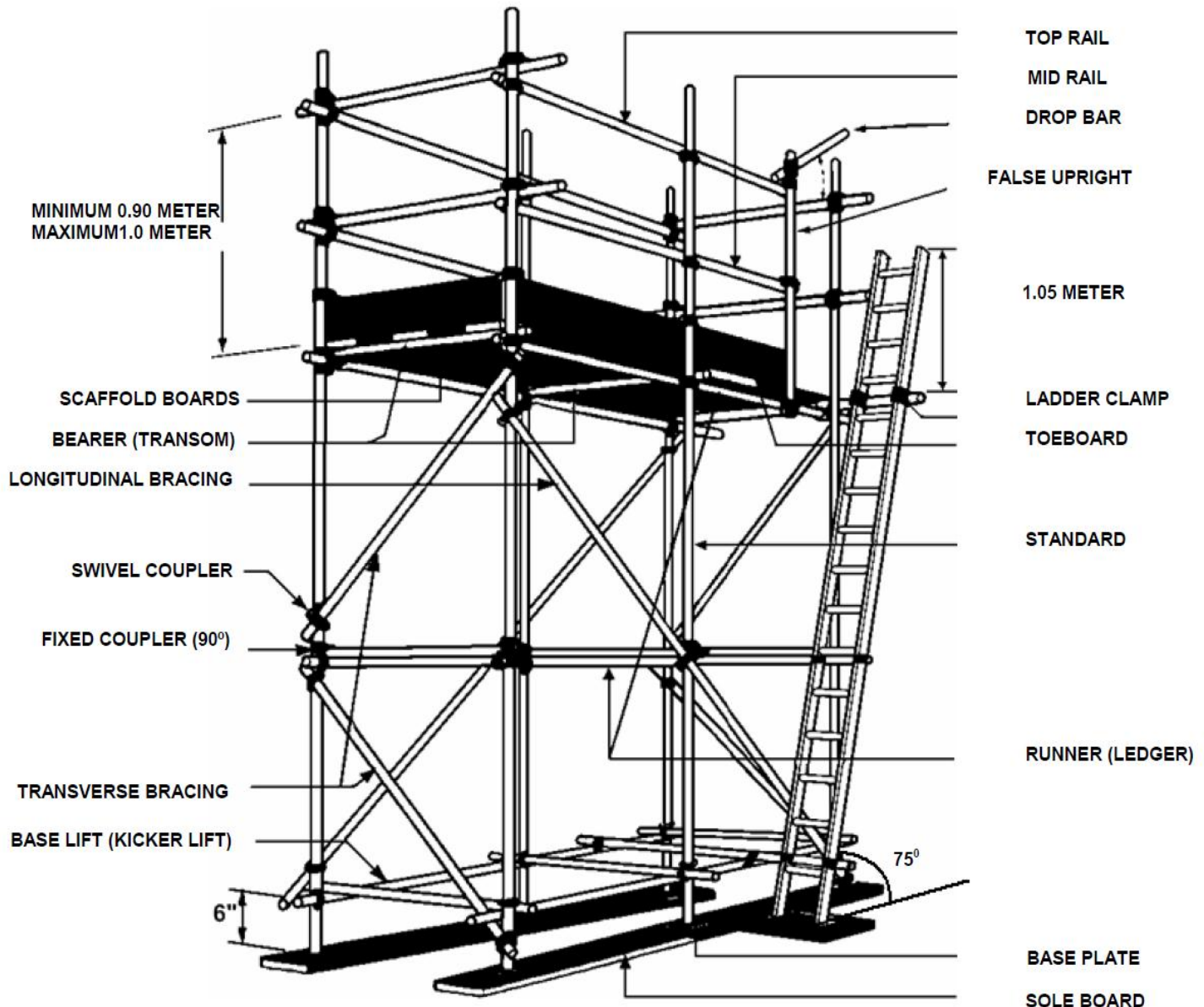
- All persons working on scaffold must wear full body harness.
 - The harness does not need to be hooked whilst going up/down ladders or if working on a scaffold platform which is completely enclosed with handrails and no danger of falling.
 - If there are any openings in the platform where a person has the potential to fall then the harness has to be hooked.

Trainers Notes

a Scaffolding Erection, Inspection and Dismantling Procedure No. -9111-000-HSE-006-00013 to avert the fall from height incident at our work location and we have 10 golden safety rules and Rule No.-2 is Work at Height. One of the largest causes of fatalities and serious injuries in the industry is failure to adhere work at height safety guidelines. It is therefore essential to have awareness on safe erected scaffold.

Scaffolding is a temporary structure which provides access working platform and can be used to support people, materials or equipment for job at height.

Know your Scaffold



Checks required to be carried out before working on scaffold-

1. Work Permit No.- 2. Scaffold Tag No.- 3. Location- 4. Checked By - Date of Inspection---

Sr. No	Check Point	Status
1	Base plate provided	Yes
2	Sole plate provided	Yes /N.A.
3	Has scaffolding area suitably barricaded during erection	Yes
4	Are the scaffolding is vertical and level?	Yes
5	Are the poles, runners and bearers of scaffolding are securely braced to prevent swaying displacement.	Yes
6	Is there a safe and convenient means of access? If ladder is used, is it rising at least 1 meter above the platform	Yes/No.
7	Are the grating places in order without gaps and secured properly?	Yes
8	Is every working platform is provided with toe guard and hand rail, top rail and drop bar?	Yes
9	Are the scaffolding erected as per load duty?	Yes
10	Are the green tag near access ladder is attached on scaffolding or not?	Yes
11	Is scaffold material used is defect free from bent, corrosion etc.?	Yes
12	If two pipes are connected, are they overlapped at least 600mm and min 2 clamps used.	Yes

Before erecting a scaffold, check the location for:

1. Ground conditions
2. Overhead electrical wires
3. Obstructions
4. Variation in surface elevation
5. Tie-in locations and methods
6. Potential wind loading conditions

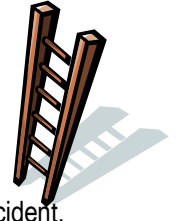
If you work on unsafe scaffold then hazards associated Scaffold are

1. Fall from height.
2. Dropping Object from height.
3. Electrocution from overhead electric cables.
4. Overloading
5. Hazards of moving vehicles nearby scaffolds.
6. Slip and trip hazard
7. Hot surface/ cold surface exposure due to damaged insulation over pipeline.

To safe guard from fall hazard use fall protection system.



Trainers Notes



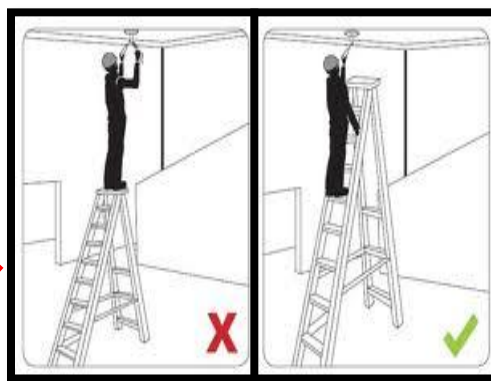
Using of unsafe ladder and unsafe usage of ladder have been observed inside the refinery and resulted in accident/incident.

Ladder with inspection tag and green band shall only be used inside refinery.

Always maintain 3 point contact while climbing the ladder.

It is the responsibility of user to do a Visual inspection/pre use check on condition of ladder before every use.

Use of Unsafe Ladder	Unsafe Usage of Ladder
- Defect in ladder. Ladder without inspection tag. - Ladder wobbles due to missing feet /rubber pads or not being correctly pitched/ tied. - Missing, damaged or worn anti-slip feet/pad. - Crack in the rungs or stile of the ladder, loose screws / rivets. - Missing, broken, rotating or weakened rungs. - Missing or damaged tie rods/locking arrangements.	- Overstretching. - Slipping or loosing your footing. - Items struck in shoe sole such as grease, oil, dirt etc. - Mud, grease or oil either on the rungs or the stiles. - Carry loads that could cause loss of balance and falling. - User not maintaining three point contact. - Working from top step with no hand rail.



- ✓ Fall from height and usage of damaged equipment are one of the biggest cause of fatalities/serious injuries / incidents in industry. So we need to ensure all equipment used is safe.
- Ladder shall be used for short duration jobs and light work.
 - Action will be taken against any person seen using unsafe ladder.
 - If needed please contact Safety dept. for further advice.

Ladder- Basic awareness

- All ladders used in site shall have an identification tag.
- All ladders to be inspected, when passed inspection a green band will be placed on the stile.
- If ladder fails inspection it will be tagged with a DO NOT OPERATE tag, and taken to the Fire station quarantine area.

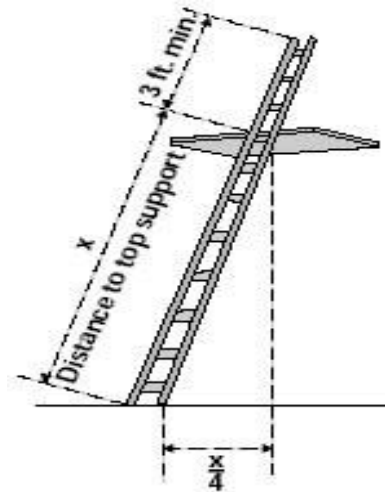
User Responsibility

- Only use ladders that have ID tag and that display green band.
- Always carry out visual inspection of the ladder prior to using it. If the ladder is damaged, it must be removed from service and tagged “DO NOT OPERATE” until repaired or discarded, defects to look for as follows:
 - Crack & defects
 - Missing of rungs
 - Missing of antislip rubber pads
 - Free of oil, grease, mud and other slipping hazards
- Use ladders only on stable and level surfaces and secured to prevent accidental movement.
- All ladders used to access an elevated surface must be extended at least one meter /3 rungs above the access point.
- Only one person shall be permitted on a ladder at any one time.
- It is unsafe for personnel to carry tools & equipment on ladders.
- Secure ladders against slipping by tying at the top. Alternatively secure at the sides or at the foot.
- Never place a ladders where there is danger from opening doors, moving vehicles, overhead cranes or electricity lines
- Keep areas clear around the top and bottom of ladders.
- Do not move, shift or extend ladders while in use.
- Use ladders equipped with nonconductive side rails/glass fibre if the worker or the ladder could contact exposed energized electrical equipment.

- Face the ladder when moving up or down.
- Always maintain a 3-point (two hands and a foot, or two feet and a hand) contact on the ladder when climbing.



3 Point Contact



- The proper angle for setting up a ladder is to place its base a quarter of the working length of the ladder from the wall or other vertical surface
- Only use ladders and appropriate accessories (ladder levelers, jacks or hooks) for their designed purposes.
- Do not use a self-supporting ladder (e.g., step ladder) as a single ladder or in a partially closed position.
- Be sure step ladders are fully open and locked before climbing them.
- Do not carry objects or loads that could cause loss of balance and falling.
- Do not stand on the three top rungs of a straight, single or extension ladder.



Basic Awareness on PPEs

We have six Mandatory PPEs used in the Refinery.

- Safety Helmet, Safety Goggles/ glasses, Ear Plugs / Muffs, Gloves, Safety Shoes, coverall.

Additional specific PPEs such as safety harness, respiratory protection must be worn as per the need and requirements of permit / task.

Managers and contract supervisor's responsibility:

- PPEs to be provided to all workers and replaced when damaged.
- All PPEs supplied must meet minimum requirements.
- All workers must be trained to use the PPEs.
- All PPEs should be IS/EN approved.

User Responsibility:-

- Responsible to wear the mandatory PPEs during work and take care of their own PPEs.

1. HEAD PROTECTION

- Safety Helmet must be used at all the times where work is going on.
- Exception:- is for walking on roads, inside the workshop except for people involved in operations of over-head cranes.
- Chin strap must be used at all times.
- Helmet must be marked with company name.
- Replace helmets if any cracks/damage is observed.

2. FOOT PROTECTION:-

- Safety shoes/ boots must be worn while entry into ISBL area.
- Safety shoes must not be torn and sole must be in good condition.
- Safety shoes if damaged needs to be replaced.

3. **EYE PROTECTION**

- It is mandatory to use safety goggles/glasses in the plant area.
- The safety goggles/glasses must be scratch free.
- Do not use black glasses during night time.
- Chemical splash goggles face shield to be used while working with chemicals.
- Replace the safety goggles/glasses if damaged.

4. **HAND PROTECTION**

- Hand gloves must be used to protect from cuts, burns, abrasions, chemical contacts etc.
- However specific types of hand gloves must be used for specific tasks involved.
- Replace the hand gloves if damaged or contaminated.

5. **HEARING PROTECTION**

- High noise areas have been identified in the plants with warning signs.
- Ear Plugs / ear muffs or both must be worn in high noise area.
- Replace the ear protection if damage.

6. **COVERALL**

- Persons entering the process area should wear coverall, or HMEL approved uniforms which cover the body including full length sleeve and pants.
- Coverall made of Nylon or any similar material should not be used.

Golden Rule 1**Basic awareness of Permit to work system. (Trainers Notes)****Why do we need a permit to work system?**

- Control of non-routine jobs (e.g maintenance jobs) to carry out safely.
- Establish communication between various departments involved during the maintenance task.
- Authorization to carry out the job in an area.
- OISD-105 requirement

Main control system for maintenance jobs:

Permit to work is the only tool to have a control on the non-routine tasks carried out in the plants. Permit to work system is our main system to control hazards from maintenance work and other non-routine tasks. For it to be effective, the requirements of the permit system must be followed at all times. As per the procedure, the following control measures must be followed:

Control measures to ensure safety in a permit to work system:**Forms & Authorization:**

- Permits are to be issued/ requested only by the Authorized signatories as per the procedure.
- Accurate description of the work to be carried out. Specific details to be mentioned. Clear and complete description.

Few example of incomplete job description:

- × PM Job.
- × Pump checking.
- × Cutting & welding.

- **Site visit:** By both the requestor and issuer to discuss the work to be done.
- **Checklists:** Ensure that any checklist along with the permit is filled completely.

JSA & Effective communication

- **Job safety analysis:** Carry out the joint JSA.
- JSA contents shall be relevant to the task carried out.
- Ensure that all the job relevant points are covered in the JSA.
- List of control measures required for safety during the work.
- **Effective communication to workers:** Ensure that the workers are briefed of the Job identified hazards and the controls required eliminating these hazards.
- **Tool Box Talk:** Supervisor /or maintenance in-charge to lead the tool box talks specific to the task. JSA form may be used for the tool box talk.

Permit close out

- Complete sign Off before equipment is returned to service.
- Sign off by the permit requestor, issuer & Field engineer.
- Important to mention the job status. Complete/ incomplete.

Gas testing

- To be carried out only by the AGST-Authorized gas safety testers.
- Frequency of gas tests to be decided during the JSA but not more than 2 hrs. for Hot jobs/ confined space entry jobs.
- In case required, it may be carried out on a continuous basis.

Relevant procedures:

- Permit to work procedure.
- Safety districts and ownership of facilities.
- LOTO (Lock out, Tag Out) procedure.
- Excavation procedure.
- Confined space entry procedure.
- Work at height procedure.
- Lifting & rigging procedure.
- Procedure on radiography.
- Scaffolding procedure.

Some key points:

- No maintenance work starts without a valid permit.
- Job can only be started once the Field engineer fills the field checklist and signs.
- Permit copy shall be available at site.
- Approving authority as per the procedure.
- All closed copies of the permits shall be returned back to the issuer after job completion.
- Issuer to maintain a record of closed permits/ checklists for at least 03 months.

Tool Box talk

What is a permit to work? (Ask the workers)

A formal written authority or permission to undertake a maintenance activity which is designed to protect personnel working in hazardous areas or activities. It identifies key hazards and control measures.

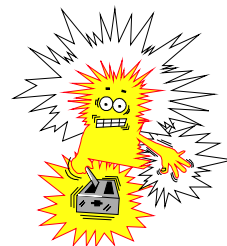
Permit to work system is for the protection of YOU and your colleagues as well as others who may be affected by the works.

Workers need to know:

- No job starts without a valid work permit.
- Workers are aware of the contents of the permits, any potential hazards and the precautions taken or to be taken.
- Only start the job when the field engineer has filled the permit checklist and signed.
- Permit copy shall be available at the job site.
- Carrying out work without a valid permit is a serious safety offence.
- Additional PPEs specified in the permit / Job Safety Analysis must be used.
- Job shall be carried out under the supervision of the supervisor and permit requestor.
- Ensures that everybody involved observes all the conditions of the permit.
- If things go wrong or the situation changes notify the authorized person at once.
- Upon receipt of a permit, check the work location to ensure that no problems have been overlooked before starting the work.
- Upon completion of the work, ensure that the area housekeeping shall be carried out.



Basic Awareness on Electricity



Electricity is silent, invisible, and potentially fatal. Due to improper handling with electrical items, many cases have been observed inside the refinery and resulted in accident/incident, so it deserves the utmost respect.

The most common and serious electrical injuries occur when electrical current flows(form of electron) through the human body. This happens when a person touches an energized line/part. The electrical energy is looking for the shortest path to the ground, and it will pass through the body to the feet to reach it. When this occurs, a person's heart and lungs are frequently damaged by the electrical energy.

Basic Do's & Don'ts when working with electricity.

- **Do's:**
 - Visual checks of plugs, sockets and cables prior to use – if any damage is identified then remove from service and report immediately.
 - Ensure if any cable joins are required then utilize proper connector blocks, not just insulating tape.
 - Visual check of electrical equipment that is to be used
 - Ensure the inner insulation of cables should never be visible – the outer insulation should extend into plugs and equipment and fully utilize cable grips.
 - Ensure LOCK-OUT TAG-OUT If required to work on electrical equipment
 - Verify equipment is isolated using electrical tester before starting work
- **Don't:**
 - Use naked wires in sockets
 - Touch any electrical equipment if not trained or authorized to do so.
 - Don't use electric current distribution panels without protected and metal part without earthing.
 - Overload electrical sockets – one plug per socket!
 - Don't wear any rings, watches or other materials which could conduct electricity while working on or in electrical cabinets/distribution boards.
 - Don't use electrical circuits without ELCB of 30 mA rating.
 - Use water on electrical Fire



This symbol indicates that the device is double insulated



Never ever take electricity for granted, and never assume a circuit is dead.

Basic Awareness on Electricity (Trainers Notes)

Types of electrical hazards



primary hazards

electric shock

electric burns

- (i) Joules burns
- (ii) Fire and explosions

Causes of electric shock & fires

- ☞ Persons coming into contact with live conductors
- ☞ Accidental contact with energy part of equipment
- ☞ Insulation failure
- ☞ Equipment failure
 - ☞ Poor maintenance
 - ☞ Wrong work methods (overloading, make shift wiring etc)
 - ☞ Substandard materials & workmanship
 - ☞ Un-authorised personnel
 - ☞ Lack of training & knowledge
- ☞ Short circuit
- ☞ Spark from loose contacts
- ☞ Mechanical damages
- ☞ Loose connections
- ☞ Heating of conductors, coils & equipments
- ☞ Combustible materials near by
- ☞ Incorrect fuses
- ☞ Wrongly set protective devices
- ☞ Spark near flammable liquids, gases & vapours

Control methods

- ☞ Approved methods and procedures
- ☞ Segregation of electrical equipments and flame proof equipments
- ☞ Use of intrinsically safe circuits such as hand lamps / low voltage & small motors to driving instruments
- ☞ Adopting standard codes of practice and use of equipments
- ☞ Allowing only competent persons to work in the electrical system

Burns

Contact burns

- ☞ Coming in contact with live conductor
- ☞ Accidental contact with energised metallic part

Flash / arc burns

- ☞ Arc burns received from flash over (while working with hv)
- ☞ Switchgears
- ☞ Panels
- ☞ Transformer installations
- ☞ Short circuit arcing
- ☞ Burning of minerals

Methods of protection

- ☞ Following indian electricity rules & work procedures
- ☞ Licensed and authorised persons for electrical works
- ☞ Approval from electrical inspectorate before installation energised
- ☞ Periodical maintenance of installation and equipments
- ☞ Proper replacement of damaged cables and equipments
- ☞ Low voltage
- ☞ Earthing
- ☞ Double insulation
- ☞ Current sensitive - tripping devices
- ☞ Marking & warning
- ☞ Observance of ie rules and regulations
- ☞ Use of personal protective equipments
- ☞ Training & education
- ☞ First aid & fire fighting

How to protect / methods of protection against electrical accidents / injuries

- ☞ Proper o/l protection
- ☞ Proper o/l setting
- ☞ Flame proof motors
- ☞ Regular / periodical inspection
- ☞ Regular maintenance
- ☞ Maintenance of earth pits
- ☞ Lightning protection

Earthing

Earthing means the conductor connection provided between any equipment / apparatus / service lines to the earth electrode with an extremely low electrical resistance. The earth electrode is a conductor of gi/ci pipe plate/rod buried underground surrounded by general mass of earth.



HMEL Golden Rules for Safety



Golden Rule 7-Driving Safety

Daily over 350 people die on Indian roads and many thousands are injured, most of which are easily preventable by following road safety traffic rules and regulation. Even within our refinery site where we have had a number of driving accidents including serious injuries in spite of mandatory speed limit of 25 kmph.

Key requirements include:-

Speed Limits: Strict adherence to maximum speed limits	    
Vehicle capacity: should only carry the number of passenger it was designed for.	
Seat Belts: wherever fitted, to be worn by all occupants both at Front & Rear seats. Always wear your seat belts, no matter how short or routine is your trip.	
Driver has to drive only when he is fully fit to drive.	
Mobile phone: Do not use whilst driving. It distracts your concentration. Don't even use speaker phone while driving.	
Helmet: Use ISI marked safety helmet while driving a two wheeler. Helmet compulsory for pillion rider as well. Secure your helmet with a chin strap.	
Spark arrestor: Use spark arrestor for Diesel driven vehicles inside the refinery.	
Safe distance: Keep safe distance between two vehicles. (3 Seconds rule)	
Break Journey: Take sufficient breaks for rests during long drives.	
Do not drink and drive. Do not drive under the influence of drugs or alcohol.	

Head Restraints: Attached or integrated into the top of each car seat to limit the rearward movement of the adult occupant's head relative to his torso in a crash, so as to reduce the danger of any injury to the cervical vertebrae.	 Proper Position
Avoid eating while driving. Always keep your eyes on the road and your hands on the wheel.	
Fog: Drive with head lights with low beam and fog lights ON. Always keep in lane. Use markings on the road as a guide. Maintain distance between vehicle in front & your vehicle. You should be able to stop in the distance you can see.	
Sun Shade Screen: DO NOT use Sun Shade Screen on front and rear wind screen glass while driving	

Vehicle Checks

 **Vehicle should be fit for purpose and weekly/daily safety checks to be completed as required:**

✓ Engine oil level	✓ Brakes (system, fluids)
✓ Cooling water (radiator)	✓ Check spare tyre and tool kit
✓ Indicator lights	✓ Check fuel level.
✓ Hazard lights	✓ Check your head rest.
✓ Tyre Condition/ Pressure	✓ Keep vehicle documents with you; driving license, vehicle registration , insurance and for Refinery Gate entry -Security car pass

It is better to lose one minute in life than "life" in one minute.



WHAT TO DO IN AN EMERGENCY

This talk could be called 'What to do if you discover a fire' but there are certain things you need to do and know before you discover a fire.

A well-organized site will have a Fire Safety Plan and appointed Fire safety Personnel. Make sure you know your role & responsibility in this plan.

Preparing yourself for any emergency we should keep in mind about following points:-

- Know the emergency exits
- Keep the exits clear from obstructions & clearly marked
- Exits must never be locked
- Respond immediately on hearing alarm
- Do not run, walk swiftly
- Don't use the lift, go down the stairs

AS YOU DISCOVER AN EMERGENCY (Fire, Liquid or Gas leak)

- Warn people who may be in immediate danger by shouting
FIRE ... FIREFIRE. OR DANGER...DANGER...DANGER.
- Raise the alarm by one of the following methods:-
 - Operate Manual CALL Points (Break Glass)
 - Intrinsically Safe Phone/ IP Phone.
 - Walkie Talkie (tetra set)
- Speak slowly and give clear instruction and location of incident.
- Shut Off machinery (if safe to do so)
- In case of Fire, if trained and you are not at risk, extinguish the fire using portable fire fighting appliances.
- Always make sure you use right type of fire extinguisher (e.g. Do not use water or foam on electrical Fire)
- Make sure you have clear escape route at all times.
- Evacuate the area to the nearest assembly point.
- Do not use lift during fire emergency, always use staircase.
- Do not be panic, wait for assistance & follow instructions.

- Wailing siren sound is an indicator of emergency.
- Carefully listen to Public address announcement & follow the instructions.
- Suspend all the hot jobs when fire siren is sounded during a major fire.

The emergency message is communicated in the following manner

- Call EMCR on Tetra UHF system or IP phone or breaking the glass of nearby MCP. The IP phone no of EMCR (Fire control room) is 2222.
- Reporting by Walkie Talkie (by operating emergency button)
- **Inform shift Console Supervisor/ plant shift Incharge /Shift Superintendent at main control room.**
- Caller to confirm the accuracy of the message (location of emergency) as repeated by F&S personnel
- Wait for acknowledgement from Fire & Safety department personnel

You hear the emergency siren or Fire alarm.

Building Fire alarm.

- Persons should evacuate the building via the nearest route and report to the assembly point. (lifts must NOT be used).
- Remain at assembly point till roll call has been taken and further instructions given.

Refinery Emergency siren

- If the emergency siren is activated (wailing tone for 2 minutes), this informs all that an incident has occurred within the refinery, but not necessarily in the area you are in.
- Listen for messages via the public address system (PA), this will be used to inform persons of the incident and further action required.
- If informed to evacuate, please make way to assembly point, do not leave this area till roll call has been taken and you have been given further instructions.
- In the event of gas or vapour cloud, take note of wind direction and evacuate in a cross wind direction.



Basic awareness on Equipment Isolation.

Golden Rule No. 4

Equipment Isolation

A key basic safety rule is to isolate the hazards before working on any equipment.

- Electrical equipment
- Moving machinery
- Pipes & equipment containing hydrocarbons & other service.
- Hydraulics.

Hazards: Electric power, hydraulic, pneumatic etc.

- At its simplest level this may just be unplugging the equipment or turning it “OFF”.

Examples;

- Don't change a wheel on a grinder whilst it is still plugged in.
- Don't clean trapped material in a lawn mower whilst it is running.
- Don't put your hands near moving parts whilst equipment is running. (e.g: we had an accident in the canteen when a worker puts his hand in a running Dough mixing machine)
- Incident with the moving fan belts.

For any work requiring a permit to work, we have a formal system of isolation-LOTO (Lockout & Tag out)

- Any persons required to do isolations will be trained on this procedure.
- If you are doing maintenance work or work involving electrical, process lines, hydraulic or mechanical energy, you should only start work once you are sure the equipment is appropriately isolated;
- Permit to work in place.
- Tags on valves.
- Tags on the LCS.
- **Bump Test/ kick start:**

To ensure that the electric motors are isolated, the bump check is carried out by pressing the “Start” button on the LCS before starting the job. This is jointly done by the field operator along with the maintenance supervisor. After confirmation, “Do Not Operate Tag” is displayed on the local panel.

- If in any doubt, ask your supervisor.

Other equipment

We need to ensure that all equipment is considered. E.g.

- We had an incident whilst somebody was doing a painting job near a fin fan and at the same time the fan was switched ON.
- Potentially serious near miss on the tank farm area where a contractor discovered that the Mixer motor he had been given a permit for was still live despite the permit saying it was isolated. The contractor worker performed the Bump check prior to starting the work.

Lock out: The placement of locks on an energy isolating device (such as switch, a circuit breaker or a valve) ensuring that the energy isolating device and equipment being controlled cannot be operated until the lockout device is removed.

Tag Out: A prominent warning device such as a Tag attached to an isolating device used to prohibit personnel from operating or removing that device.



Basic Awareness

Working with Chemicals

- ✚ At H MEL Refinery we handle a large number of chemicals, many of which are hazardous such as flammable, toxic or corrosive.
- ✚ It is important that these chemicals are handled correctly to avoid injury and illness.
- ✚ For most of the chemicals used in bulk at the refinery we have produced one page MSDS (Material Safety Data Sheet)- called the CSIS (Chemical Safety Information Sheet). These have the following sections
 - ✓ Common Synonyms (alternative name).
 - ✓ Appearance and Odour.
 - ✓ Personal Protective Equipment's.
 - ✓ Key Hazard Data.
 - ✓ First Aid Measures (Inhalation, Eyes, Skin, swallowing).
 - ✓ Emergency /Spill Controls.
- ✚ Please ensure that you are aware of this information before handling the material.
- ✚ For other chemicals read the label or MSDS before working with the chemicals.

Routes of entry into body for chemicals: - Inhalation or Ingestion, or skin contact.

Precautions while Use of Chemical:

- ✓ Do...Follow manufacturer's instructions for proper use, storage, and disposal.
- ✓ Do... Wear the correct PPE-spec over goggles, face shield, PVC/nitrile gloves while working with chemicals. Do not use cotton gloves while handling chemicals.
- ✓ Do....Know all emergency procedures and equipment.
- ✓ Do...Always read labels and CSIS/MSDS prior to use.
- ✓ Do...Make sure all chemical containers are properly labeled
- ✓ Do...Always wash up your hands after using chemicals.
- ✓ Do...Ensure operation of safety shower/Eyewash basin.
- ✓ Do...Clean up spillages immediately.

- × Don't mix different chemicals- Reactions may occur.
- × Don't inhale, drink or ingest any chemicals.
- × Don't Store chemicals near heat or flames.
- × Don't smell or taste a chemical to identify it.
- × Don't eat, drink, or smoke while using hazardous chemicals in workplace.
- × Don't dip your hand into a chemical even when wearing gloves
- × Don't store chemical containers where they could fall and get damaged.



Incident & Near-Miss Reporting

Introduction

During refinery operation, it is required to have in place adequate control measures to prevent any type of incident/accident. In order to achieve this it is essential that all incidents, accidents, near misses, unsafe acts and conditions are reported so as to enable us to develop and implement adequate control measures to prevent any further occurrences.

To achieve our goal of ZERO ACCIDENT it is responsibility of all employees to report all incidents & take part in investigation for the incidents to avoid the same in future.

Accident/Incident reporting

All accidents/incidents, minor or major shall be immediately reported to the Safety department. This can be done by completing the *H MEL accident/incident notification report*.

What is Unsafe Act / Condition and Near-Miss (Discussion)

Ask the team for examples of simple unsafe act / condition and near-miss, they have experienced and how these can be prevented. Discuss this amongst the team.

Near Miss, unsafe acts/conditions reporting

Near misses and unsafe acts/conditions can be reported by either entering directly into the SAP system or by completing a *H MEL Near-Miss/Unsafe Act/Unsafe Condition report card*. These report cards and drop boxes can be found in numerous locations around the refinery.

STAR reporting

A “STAR” (Stop, Think, Act, Review) reporting system has been introduced to minimize incidents and motivate individuals to stop and for think about the task to be performed for a minute, prior to execution. STAR reporting is like a dynamic risk assessment where we don't require any document in execution stage.

The following are the common hazards associated with accidents.

Slip / trip / fall	Electricity
Fall from height	Static Electricity
Falling / flying objects	Noise
Access / egress	Vibration

Wrong / Poor tools	Faulty equipment
chemicals	Radiation
Dust / fumes	Poor lighting
Vapours	Adverse weather
Hydrogen Sulphide	Confined spaces
Release / Spillage	Lifting operations
Temperature (hot / cold)	Work by others
Fire / Explosion	High pressures
Moving vehicles	Human error
Moving / rotating machinery	Violation / unsafe behaviour

Common control measures considered for accident/incident prevention:

Procedures for task being carried out – are they in place and do I understand what they require? Are they adequate?

Planning – has enough planning and preparation been done?

Personal protective equipment – do I have the right PPE?

Respiratory protection – do I need to consider this?

Equipment – Do I have the right tools and equipment? Is it in good working order?

Competence – do I have the right training / experience for task?

Permit to work – is one needed?

Supervision – does my supervisor know what I am doing?

Teamwork – does all the team have a common understanding of the task?

Communications – How will I communicate to others in the team / working nearby? Radios, handover, logs, barricading etc?

Emergency procedures – are they in place? Do I know them?



Basic awareness on lifting operations (Trainers notes)



Introduction

What do we mean when we say “**Lifting & Rigging Operations**”?

Every type of lift has a set of risks that need to be managed if the lift is to be undertaken in a safe and efficient manner.

To give a clear focus on this issue, we all as a team have to follow safe procedure of Lifting & Rigging Operations.

Hazards during lifting operations

- Unauthorized people
- Overhead power line electrocutions
- Crane failure
- Rigging failure
- Overloading
- Weather
- Falls

Responsibilities of Lifting Supervisor

- Ensure that all existing accessories are regularly inspected, properly maintained and stored correctly;
- Ensure all inspected and re-certified equipment is marked with the relevant colour code, and that the ID No's on gear conforms to that on certification;
- Ensuring that the Crane Operators are certified for all crane operations;
- Suspending crane operations in the event of a general alarm or emergency.
- Is responsible for ensuring load transfers are correctly planned and rigged for lifts on. For routine lifts he may delegate this responsibility to the Rigger Foreman.
- The lifting slings or chains are correctly secured to the load;
- Equipment is clearly identifiable and inspected (e. g. types/capacity/ID numbers etc.);
- Each item marked with current colour code;
- All rigging gear without valid certification is kept in a segregated location, clearly labelled, not for use/quarantined, and cannot be used (tied-up by chain and pad lock awaiting the certification).

- Every 6 months for lifts & hoists, 12 months for all other lifting equipment (by 3rd party authorized firm).

He shall ensure that every lifting operation is properly planned by a competent person, appropriately supervised and carried out in a safe manner

Lifting operations using cranes, hoists or other mechanical devices can only be performed if:

- A risk assessment and a lifting plan have been prepared for the operation. The lifting equipment and method must be selected by a qualified person;
- The weight of the load is known and falls within the safe working load for the equipment to be used;
- The operators are fully trained and qualified. The cranes and other lifting equipment must be operated by trained workers;
- The lifting equipment's safety devices are in good working order;
- An identification system (color code or equivalent) is used to certify that the lifting accessories have been inspected at regular intervals;
- The lifting devices and accessories such as slings and shackles have been visually inspected before use;
- The lifting area has been barricaded;
- The signal man must be present at working Location

During Work

- Do not walk or stand under a load while lifting is taking place.
- The load must be securely slung and properly bundled.
- The moving load must be controlled at all times.
- Do not Perform Lifting activities during Bad Weather.

What do Employees/Operators needs to know?

- Proper equipment operator instructions.
- Load limits and capacities of each payload.
- Safe Rigging practices.
- Operator inspection requirement at the start of each shift.
- Equipment inspection and maintenance at regular intervals.



Basic Awareness on Excavation

Introduction Openings on any surface are either made for any below-ground Construction / Maintenance activity or have developed due to the erosion of subsoil and the consequent collapsing of the paving above. Working inside these excavations / openings is potentially hazardous and accidents associated this activity are preventable with proper planning and safe execution.

Accidents associated with excavations happen generally due to:

The injuries sustained due to collapse of excavations are usually crushing injuries caused by the sheer weight of the collapsing material. A Cubic Meter of earth weighs over 1.5 Ton.

- Shoring was not installed where required.
- Shoring failed because it was not frequently inspected or maintained.
- Workers moved beyond the shoring protection.
- Ignorance of underground utilities
- Vehicle / traffic movement very near to the excavation.
- Workers re-entered excavations without inspecting the walls or shoring after rain fall.
- Debris, construction materials and equipment were stored too close to the edge of the excavation.
- Failure to erect barriers around an open excavation.
- Excavation without a banks-man / signal man.
- Working near the HT lines with heavy equipment's.
- Improper access/egress, damaged or missing ladders or no ramp.
- Workers attempting to jump over excavations.
- Throwing materials down to those working within an excavation – Always use a bucket and rope to lower the tools down.

Requirements for Excavation:

- Excavation requires a 'permit to work' from the area-in-charge and a Tool box talk on job.
- Follow the area drawings and clearances have to be obtained from Electrical / Instrumentation / IT and HSE Departments before beginning the excavation, to ensure that underground and overhead utilities and services do not suffer any damage due to the excavation.
- All excavations must be barricaded with solid barriers and identified with signage, before the excavation work starts.

- Trenches more than 1.2 meter deep are treated as 'Confined Spaces', requiring an appropriate 'permit to work'. The trenches should have adequate and safe means of exit (such as ladders, steps or ramps) at no more than 8 meter of lateral travel.
- Use cable / pipe detector and trial pit while doing excavation.
- Manual excavation, if underground services.
- Workers must wear suitable garments marked with high-visibility material.
- Do not permit workers to go underneath the loads of lifting or digging equipment.
- Workers must be protected with individual lifelines and harnesses in bell-bottom excavations.
- Workers must not work in excavations in which there is accumulated water. The water should either be pumped out or adequate safety precautions should be taken.
- Stability of soil shall be checked before start the job.
- The sides of all excavations more than 4 feet deep must be sloped / battered and shored.
- If the soil is loose, shoring may be required for depths less than 4 feet also.
- The shoring should extend to the bottom of the trench and about 12 inches above the top edge.
- Excavations in clay also need as much protection as excavations in loose earth.
- Store excavation debris, equipment and other materials at least 3 feet away from the edge of the excavation.
- Warning signs, warning tapes shall be provided around excavation. Deep excavation should have hard barricade.
- A competent person must make daily inspections of excavations, adjacent areas and the health and condition of the shoring material, especially after every rainfall.
- Walkways or bridges are needed for crossing over all excavations. Walkways or bridges over excavations greater than 4 feet deep require standard guardrails.
- Back fill excavations upon completion. Progress from the bottom of the trench when removing support-system members. Remove the support systems as you backfill the trench.





Basic Tool Box Talk on Confined Space Safety

H MEL had developed a confined space permit and entry procedure No. -9111-000-HSE-006-00006 to avert the confined space incident at our work location.

Confined space is defined as a location that is an enclosed or partially enclosed space that is not primarily designed or intended for human occupancy

- a) Has a restricted entrance or exit by way of location, size: not be less than 40 cm X 30 cm for rectangular opening and 40 cm in diameter for circular opening. (As per Punjab Factory Rule-64).
- b) Can represent a risk to human being due to any of the following factors:
 - I. its design, construction, location or atmosphere
 - II. the materials or substances in it
 - III. work activities being carried out in it, or the
 - IV. mechanical, process and safety hazards present

For eg. Process vessels, storage tanks, columns, boilers, pipes, ducts, sewers, which carry process fluids or gases, Any excavations of a depth of 1.2 meters or above, entry onto tank floating roof, when the roof is 3 mtrs or more down from top of tank.

As per the procedure we have to check the following things before confined space entry.

SI No.	Checklist Points for Confined Space Job	Responsibility
1.	Confined Space Permit correctly filled, gas testing by AGST and Signed by Approver-2 not below the designation of Chief Manager	Permit Requestor/Issuer
2.	Medical check-up of the clean shaved entrants and attendants from refinery OHC. In no case beard and turban person is allowed to work inside confined space.	Permit Requestor
3.	As per job requirement gas testing frequency is to be set and to be done by AGST. If any chance for environment change is envisaged provide continuous gas monitoring system.	Permit Issuer & Receiver
4.	Tool Box Talk along with rescue procedure to be discussed on hazards mentioned in JSA to all the entrants and attendant/standby person.	Permit Requestor
5.	Electrical equipment's used inside confined space shall be flameproof.	Permit Issuer & Receiver
6.	All inlets and outlets to the confined space to be blinded and tagged properly including flare line connection to confined space.	Permit Issuer
7.	If Mechanical Ventilation is provided inside confined space then it should be flameproof. Personal Oxygen meter to be provided with entrant. Temperature inside the confined space is to be maintained normal as ambient.	Permit Requestor
8.	If oxygen concentration is below 19.5 % then airline apparatus to be used by the entrant.	Permit Requestor
9.	If fall hazard exists, full body harness along with lifeline to be provided to entrant which has to be monitored by attendant.	Permit Requestor
10.	Non sparking tools to be used in confined space as per job requirement.	Permit Requestor
11.	Nitrogen hose shall be strictly kept away from the vicinity confined space.	Permit Issuer
12.	Signature of entrant and attendant to be done on attendance sheet	Permit Requestor/Issuer
13.	During lunch hour and break in job , cover/barricade the manhole and display "DANGER-CONFINED SPACE –ENTER BY PERMIT ONLY" board.	Permit Issuer
14.	Provide communication means like IS phone, Walkie talkie etc for entrant and attendant.	Permit Issuer
15.	Confined space job to be strictly carried out under supervision of both Requester and Issuer	

All the above mentioned safety measures are mentioned in our confined space entry procedure and work permit system, in spite of that most of violations were observed in confined space jobs which may lead to loss of human being. This is full responsibility of the Permit Requestor, Permit Issuer, Field Engineer, Attendant, Approver-I and II to comply all the above mentioned points and H MEL Safety procedure and make the confined space job safe. Let us all join hands together to make our workplace safer.

"CONFINED SPACES YOU SHOULD CARE - ALWAYS WEAR SAFETY GEAR"



Major Confined Space Incident



Incident -1 at CPP- (UB-1)

Job- UV scanner testing job inside the Utility Boiler (UB-1) was started by Technician using the v on his left forearm.

Main Causes of Incident-

- Technician turned gas on and tried to ignite the gas torch with the igniter, but the igniter did not work, he tried it again, but still did not work, he told that it took him five or six attempts with the igniter before it worked, during this period of time gas valve of the cutting torch was open and gas was flowing. It was at this point when the igniter worked and there was a flash Fire and he got minor burn on his left forearm.

Lesson Learnt from this Incident.-

- He can do the job by using simple torch instead of Welding torch ignition and without exposed to hazard.
- No positive isolation that is no blind provided for refinery fuel gas line supply to Utility Boiler.
- No positive isolation that is no blind provided for HSD fuel line supply to Utility Boiler.
- The isolation provided for this job was achieved only by closing the valves and locked. When asked about blinding of these lines to concerned person , he replied that it is time consuming job.

Incident-2 Motor Spirit (MS) Vapor Inhalation by cleaner at Tank No.-554-T-03C of MS tank in Tank Farm Area No.-17 .

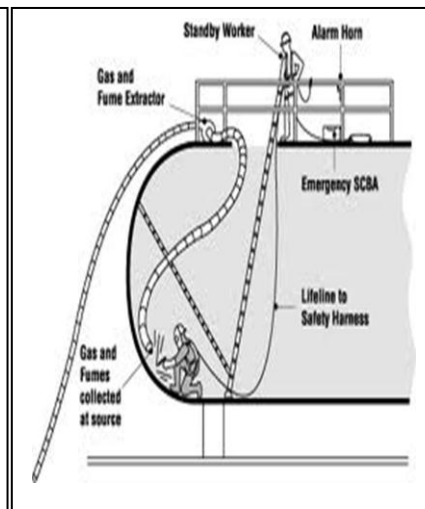
Job- Oil cleaning job on tank roof because of pontoon leakage.

Main Cause of Incident.

- Unskilled persons were involved in this job.
- Cleaner has open the pontoon manhole which was not mentioned in Permit

Lesson Learnt from this Incident.-

- Lack of Supervision-Never start Confined Space Entry Job, in absence of Supervisor and attendant.
- Tool box talk on JSA , hazards associated with the work to be done before starting of job.
- Before starting job PPE's mentioned in JSA and permit to be made available at work location.
- Skilled workers to be used for confined space entry job.
- In all Confined Space entry permit sign of Approver-2, i.e., Chief Manager to be done
- For confined space entry job, never allowed beard and turban person as an entrant and attendant.





Basic Awareness

Working at Height

What is working at height?

Any work to be performed at a height of 2 meters or above from the ground level where a person is standing is defined as work at height. Even a job being carried out below the ground level is classified as work at height. (Eg: Work in an excavated area is a work at height).

For jobs at more than 2 mtr. height, where there is no permanent platform, the job requires a permit to work along with a work at height checklist.

Working at height includes working on:-

- Ladders
- Rooftops
- Scaffolds
- Mobile Scaffolds
- Mobile Elevated working platforms
- Erection of a scaffolding
- Pipe racks
- Towers /columns (In between working platforms, where there is no direct approach)
- Exchanger Banks
- Heater/Boiler stacks
- Flare stack/ structure
- Fragile Roofs
- Communication towers
- Gantries for Tanker trucks /Rail wagons loading operation.
- Truck roof top sheeting.
- Window cleaning at height. (Using a Rope)

Avoid; working at height if possible

Prevent; should you have to work at height, prevent falls.

Minimize; what happens when someone falls,

Fall arrest system (Last resort)

The major hazards to consider when working in an elevated position are:

Falling, and Dropping objects onto people below.

Dropped Objects

- Any object dropped from height can cause serious injury or death if it falls on somebody below
- Even a bolt or hand tool dropped can be very serious
- Wherever possible tools should be fastened by lanyard to ensure it doesn't fall if dropped
- We should avoid working at different levels on a scaffold or structure and we should barricade off the area under where people are working at height – this way if something does fall it is less likely to hit somebody as it falls.
- Good housekeeping at height is essential – loose objects left at height can easily be kicked or knocked causing them to fall

When it is necessary to work at height, ensure that any precautions are taken to prevent anyone falling and to prevent anything being dislodged or dropped onto

Work at heights is safe providing you use a proper means of access and take the necessary precautions to prevent falling.

- Never climb the structure of the plant.
- Never use the bucket of a loading shovel or the forks of a forklift truck as a means of access
- Never work at any place unless there is safe footing, or at any place from which you could fall a distance that could cause harm. Always consider the use of handrails and toe boards, fencing and other equivalent protection. Also, ensure you are wearing a safety harness attached to a suitable anchor point.
- Never climb on a scaffold having a RED tag.

Fall Protection

Fall arrest:

- Consists of ;
- Lanyard
- Anchorage Point
- Full Body Harness

They should

- Be inspected prior to use
- Be protected against being cut or abraded
- Be attached to an anchorage at height and not at the same level.

Carrying tools to worksites at height

The workers should carry their tools in a secured bag/pouch. Their hands should be free to maintain the 3-point contact while using the ladder.

Heavy tools / materials like big wrenches, spanners, heavy blinds, blind flanges etc. are to be lifted by a suitable winch or a secured chain pulley block to the designated level.

Abnormal weather conditions

Work at height jobs shall be suspended during harsh weather conditions like stormy winds, rains and thundering & lightening.

Welding / Cutting jobs at Height.

It should be ensured that the sparks flying out from welding/Cutting jobs are contained properly to avoid their falling on adjacent pipes / vessels & at ground.

General Do's & Don'ts for working at height

Do's.....

- ✓ Do a visual inspection of work at height equipment before each use.
- ✓ Provide protection from falling objects
- ✓ Make sure equipment used for work at height is well maintained and inspected regularly.
- ✓ Area barricading at the ground while working at height.
- ✓ Carry tools / tackles securely at height.
- ✓ Make 3-point contact while ascending or descending a ladder.
- ✓ Only one person should use a ladder at any one time.

Don'ts.....

- ✗ Use a ladder horizontally as a working platform.
- ✗ Use a wooden/ Bamboo ladder.
- ✗ Lean or overstretch.
- ✗ Work on incomplete scaffold.
- ✗ Make any modification/ alterations to the standard work at height equipment.



Guards & Barricading Basic Awareness

What do we mean when we talk about guards and barricades?

Ask for some examples

Ask - Why do we need guards and barricades, what are they for?

The purpose of guards or barricades is to prevent persons from coming into contact with specific hazards; this is achieved by placing a physical barrier around the hazard to prevent person's access to an area or moving part.

Guards

Guards are generally found on machines or equipment; they are designed to fully cover moving parts and prevent persons from been able to make contact the moving part without having to first remove the guard.

Ask - Where would you find a guard ?

Some common answers should include:

- Drive shaft from electrical pump
- Drive belts
- Drive shaft on tractor gully sucker

Barricading

Barricades are physical barriers used to prevent persons access to specific areas, this can be temporally for a short duration or permanently. Barricades can be in many forms, the following is an example:

- Pre moulded ridged plastic barriers
- Movable barriers on wheels (similar to what police use on road)

- Constructed out of scaffolding
- Pre-cast concrete sections which stand together (making a wall)

Ask - Where would you find a barricade?

Most common answers should include:

- Around and excavation
- Area where radiography is in progress
- Where scaffolding is being erected
- Restricted areas
- Where lifting is in progress (crane lifting a load)

Guards and barricades are there for a purpose, that purpose is to protect **YOU** from harm!

Every ones responsibility

- Never remove a guard unless authorised to do so
- Do not use machine / equipment if guard is missing
- Report any damage or missing guards
- Do not take short cut through barricaded areas, walk round.
- Do not enter barricaded areas unless you are authorised to do so
- Do not remove barricades unless told to do so
- Even if you think that it is safe and no work is going on REMEMBER guards and barricades are there to protect YOU follow the rules!



Tool Box Talk on Star Process



Introduction:

STAR is introduced to minimize the incidents and motivate to the individuals for thinking about the job prior to execution. STAR reporting is like a dynamic risk assessment where we don't require any document in execution stage.

What you understand when we say STAR /Star reporting?

A new initiative to get employees and other workers to think about the task they are about to carry out and ensure all the appropriate control measures are in place and being followed. Then once they have completed the task to review the outcome and if necessary suggest how it could be done better in future.

The aim is particularly to get people thinking about health and safety but we want also suggestions for any improvements to the way tasks are carried e.g. improvements to the environment, procedures, quality and productivity.

Concept of STAR

Follow the steps while carrying out something new, unfamiliar or with significant hazardous job. The concept of STAR card is –

Stop

- Take a few seconds to consider the task you are about to carry out

Think

- What are the hazards
- What procedures are involved
- What equipment are you going to use
- What other work is going on in the area
- What could go wrong
- What control measures do I need?

Act

- Ensure all the appropriate control measures are in place
- Carry out the task

Review

- At the end of the job review what has happened?
- Were there any problems?
- How could the task be done better?
 - To make it safer (people and environment)
 - To make it easier
 - To give better productivity
 - To give better quality

Following are hazards to be considered for STAR reporting.

Slip / trip / fall - Fall from height, Falling / flying objects, Poor tools, Chemicals, Dust / fumes, Vapors, Hydrogen Sulphide Release / Spillage, Moving vehicles, Human error, Violation / unsafe behavior etc.

Examples of Common measures considered for STAR reporting:

Procedures for task being carried out – are they in place and do I understand what they require?

Planning – has enough planning and preparation been done?

Personal protective equipment – do I have the right PPE?

Respiratory protection – do I need to consider this?

Equipment – Do I have the right tools and equipment? Is it in good working order?

Competence – do I have the right training / experience for task?

Permit to work – is one needed?.

Supervision – does my supervisor know what I am doing?

Teamwork – does all the team have a common understanding of the task?

Communications – How will I communicate to others in the team / working nearby? Radios, handover, logs, barricading etc?

Emergency procedures – are they in place? Do I know them?

STAR reporting drop box are placed at following locations:

MCR / SRR-2-CDU & VDU / SRR-8-MS Block /OMS control room/ Administration building, Laboratory /Workshop /FCCU-Porta Cabin/ SRR-9 -SRU

STAR reporting procedure

Wherever possible the person making the suggestion will be involved in implementing any improvements.

After receiving the filled cards, evaluation and follow up will be done jointly by safety representative, area safety manager and unit in charge.

Quarterly recognition will be given for the best implemented suggestions.

Benefits of Star Reporting System Implementation to the company-

1. Unsafe condition inside the plant will be minimized.
2. Accident rate will be minimized and thus safety performance will be improved.



Avoiding Incidents Whilst Moving Around The Work Place

Introduction

Simple slip, trip and fall accidents are one of the biggest categories of accidents. Many of these occur whilst people are moving around the work area as part of their routine tasks. As with other types of accidents most are easily preventable by following some simple rules

Discussion

Ask the team for examples of simple slip, trip and fall accidents they have experienced and how these can be prevented. Discuss this amongst the team

Example Accidents

Once the team have discussed their examples give the examples below

- In January 2013 we had a person who tripped whilst going down a set of stairs at the crude receiving terminal. This was also an LTA
- In June 2013 a worker cut and twisted his ankle when his foot fell down a gap in the gratings on a drain channel
- On the 2nd September 2013 we had a lost time in the off sites area when a worker was walking up a set of metal stairs on a dyke crossover platform. The person stumbled and fell forward causing a fracture to his lower leg. The person has had to have an operation to pin his leg and this is now a lost time accident (LTA)
- On the 3rd Sept 2013 somebody hit his head on the door of a site bus whilst getting off
- On the 4th Sept 2013 a person slipped on spilt material in the PPU warehouse. This was only a minor injury but could have been more serious

Prevention Measures

- **Ensure good housekeeping**
 - If you are doing a job ensure work area is left tidy at the end.
 - If you see poor housekeeping report it / correct it
- **Be aware of the hazards around you**
 - Look for anything you could slip or trip on as you move around
 - Look for uneven gratings/pit covers and gaps / holes or slopes
 - Look for raised items such as OWS funnels
 - Look for obstacles that could hit your head or other body parts

- Focus on where you are going – avoid other distractions like using phones, walky talkie, reading etc. whilst moving
- If an area is flooded be extra cautious as there could be a hole or drain etc. that is hidden under the water
- **Focus on a safe route not the shortest route**
 - Go round obstacles rather than climbing or stepping over them
 - Avoid having to duck under pipework and equipment
 - Avoid areas where vehicles are moving around
 - Don't walk under areas where people are working overhead
- **Use safety aids / signs where provided**
 - Hold handrails particularly when going up and down stairs
 - Take note of warnings signs & barricading
 - Follow any marked safe walkways / identified routes
- **Ensure you footwear is in good condition**
 - Worn or badly fitting shoes causes accidents – replace if needed
 - Ensure laces are tied properly. If they come loose then stop immediately and tie them
- **Avoid carrying heavy or bulky items which may obstruct view or affect your ability to move freely.** If needed get another person to help
- **Take extra care in areas with low illumination**
 - If light bulbs are out or illumination levels low then report it
 - Take a torch if needed
 - Don't wear dark / tinted safety glasses / goggles in low light areas
- **Remember the STAR principles at all times**
 - Stop – Think – Act – Review

Note – A separate awareness talk is available for people using ladders / stepladders



Basic Awareness of Fire & Safety Critical Equipment's

What do we understand when we talk about Fire & Safety Critical Equipments?

Ask For some examples of safety critical equipments ?

Fire & Safety Critical Equipments like:- Fire Extinguishers , Fire Hydrants , Fire Hose , Fire Hose Boxes , BGU (Braking GLASS Units) , Detectors, LEL Meters, BA Set Trolleys HC detectors in units Etc.

Ask – What is the purpose of Fire & Safety Critical Equipments ?

The purpose of this critical equipments is that to protect & save the property ,human lives & control losses during emergency .

Ask-When & How to operate this fire & Safety Critical Equipments ?

- Fire extinguishers :-
 1. Not all fire extinguishers are the same.
 2. Use the proper class of fire extinguisher *only* on fires it was designed to extinguish.
 3. Know where fire extinguishers are located and what class they are.
 4. Number 1 goal = Safety. Only attempt to extinguish small fires!
 5. Never put a used fire extinguisher back in place. Have it recharged , Call or inform to fire department.
 6. Fire extinguishers must be easily accessible at all times!
 7. Must not be obstructed by boxes, chairs or other miscellaneous items.
- Fire Hydrants:-
 1. Do not use Fire water without information of Fire department.
 2. Do not Use Fire water for gardening purpose or civil job purpose.
- Fire Hose :-
 1. Do not use Fire water Hoses without information of Fire department.
 2. Do not Use Fire water Hoses for gardening purpose or civil job purpose.
 3. Do not remove the fire water hoses from its designated places i.e Hose Boxes.
- Fire Hose Reel:-

1. Do not use hose Reel for cleaning & housekeeping purpose.

- BGU :- Breaking Glass Unit :-

1. Do not operate/ horseplay with BGU (Breaking Glass Unit).
2. BGU is one of the communication media with the fire department during an emergency.

- LEL Meters ,Multi Gas detectors:-

1. LEL meter is used for gas detection & monitoring purpose during vessel entry or any other critical job like:- flange joint leakages of hydrocarbon pipelines etc. .
2. Multi Gas detector is used for gas detection and the measuring the volume of hydrocarbon vapours in percentage.

- B A Set Trolley:-

1. It is used for the purpose of vessel entry & highly toxic gas contaminated area or low oxygen levels.
2. Only use if trained to do so

- Fire Protection facilities is provided for your safety & Loss prevention & control ,please take it seriously.

- Every Ones Responsibility :-

1. Do not Remove the Fire Extinguisher from its designated location.
2. If a Fire extinguisher is required as a result of JSA or for hot work, DO NOT use equipment out on plant, speak to Fire tem who have load equipment they will loan you for duration of the task. After completion of task please return to Fire station.

Never play with any Fire and safety critical equipment,

IF ANY FIRE OR SAFETY CRITICAL EQUIPMENT IS DAMAGED IT MUST BE REPORTED IMMEDIATELY.