IOGP Life Saving Rules at bpx energy

Introduction and Implementation

- This slide pack introduces the International Association of Oil and Gas Producers (IOGP) Life Saving Rules (LSR) and provides implementation guidance.
- LSRs define key actions for individuals to protect themselves and others from fatal or permanent injuries. These rules apply universally across worksites and are relevant throughout the industry.
- All individuals working on bpx energy locations must complete Life Saving Rules training prior to arriving on site. Training should be conducted by the Contract Company or assigned by the Contract Company in ISN.
- The LSRs are fundamental to ways of working at bpx sites.
- Contract Company personnel are expected to be knowledgeable of the LSRs and implement at the worksite by demonstrating how the LSRs apply to their work scope/task.
- Contract Companies are encouraged to adapt the contents of these slides to their organization and discuss how the LSRs apply to their work scope.
- The LSRs are most effective when organizations embed the LSRs in their processes and culture.
- Review how these rules can be applied to your processes including toolbox talks/safety meetings, pre-job planning, risk assessment, post-job reviews, and observation programs.

What are Life-Saving Rules?

Key actions to prevent fatal injuries during higher-risk activities

- Draw attention to the activities most likely to lead to a fatality
- Not intended to address all risks and hazards
- Focused on those things an individual has control over
- Rely on existing company systems being in place



Bypassing Safety Controls



Confined Space



Driving



Energy Isolation



Ground Disturbance



Hot Work



Line of Fire



Safe Mechanical Lifting

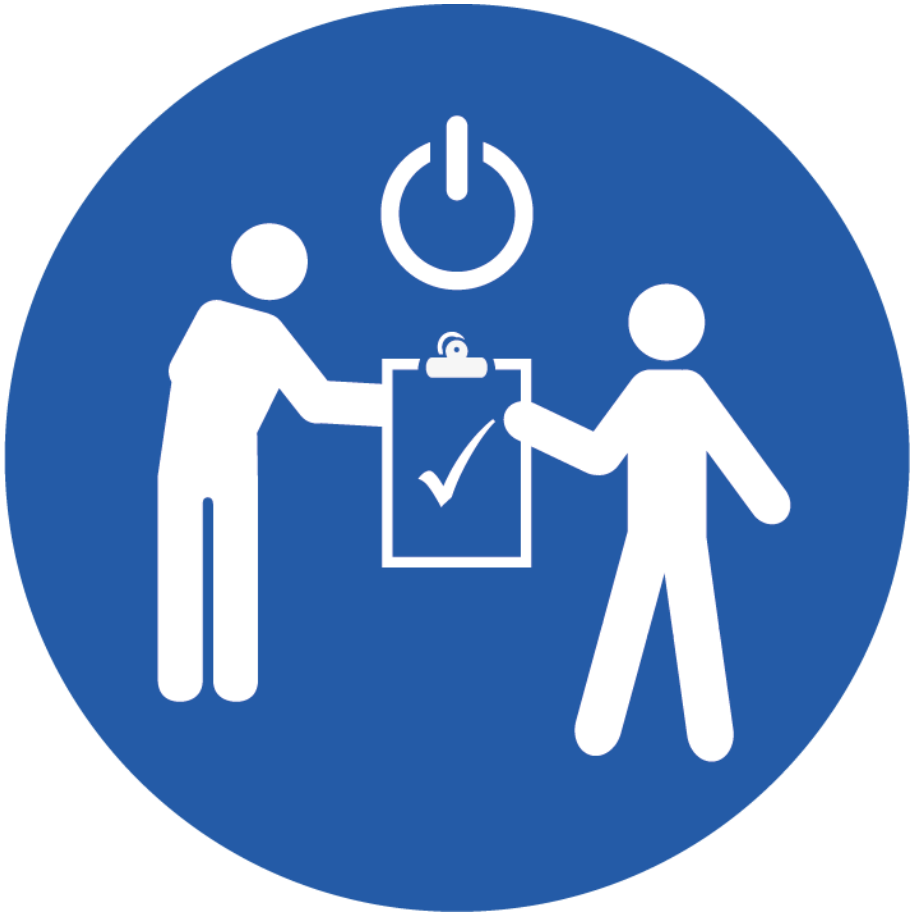


Work Authorisation



Working at Height

Bypassing Safety Controls



Obtain authorisation before overriding or disabling safety-controls

- I understand and use safety-critical equipment and procedures which apply to my task
- I obtain authorisation before:
  - disabling or overriding safety equipment
  - deviating from procedures
  - crossing a barrier

Bypassing Safety Controls: *Obtain authorisation before overriding or disabling safety-controls*



Case Study

A senior Operator who had just started his morning shift went to check the pig receiver station for the presence of a pig launched into the 13” gas pipeline (13 km, 1050 psi). As the pig transit time was highly variable (from few hours to days), it was local practice to repeatedly open the pig trap, the pig signaller was considered unreliable. Some 20 minutes later the pig trap closure shot forward. The ensuing blast resulted in the victim and a VSD skid (3300lbs) being propelled overboard. The victim did not survive.

Safety-critical controls include:

- **Equipment** (such as fire and explosion protection and mitigation systems, guards, interlocks, alarms and safety-critical monitoring equipment) whose purpose is to prevent a fatality or other major accident, limit the consequences of a major accident, or whose failure could cause or contribute substantially to a fatality or other major accident.
- **Procedures** that if not performed correctly or at the right time could result in a fatality or other major accident.

Confined Space



Obtain authorisation before entering a confined space

- I confirm energy sources are isolated
- I confirm the atmosphere has been tested and is monitored
- I check and use my breathing apparatus when required
- I confirm there is an attendant standing by
- I confirm a rescue plan is in place
- I obtain authorisation to enter

Confined Space: *Obtain authorisation before entering a confined space*



Case Study

Two Welders were working together to repair an external weld on a vertically orientated pipe spool. Following the completion of the repair, one of the welders placed a ladder inside the pipe spool and entered the pipe to inspect the weld repair. Upon entering the pipe they collapsed. The other welder went to try to rescue his colleague, entered the pipe and also collapsed. Both welders died.

A confined space, such as a vessel, tank, pipe, cellar, or excavation can contain:

- explosive gas,
- toxic or asphyxiating atmosphere
- or other dangers such: as energy releases, lack of oxygen, exposure to hazardous chemicals, things that can fall on you or crush you, or that you can fall from.

Authorised access keeps you safe.

Driving



Follow safe driving rules

- I always wear a seatbelt
- I do not exceed the speed limit, and reduce my speed for road conditions
- I do not use phones or operate devices while driving
- I am fit, rested and fully alert while driving
- I follow journey management requirements

Driving: *Follow safe driving rules*



<u>Case Study</u>

A third party vehicle was overtaking in an unsafe place.
It hit a Company vehicle head on.

Both vehicles were severely damaged in the crash. The company driver and passengers were wearing seatbelts and walked away from the crash. The driver of the other vehicle was not wearing a seatbelt and did not survive.

Both driver and passengers should take responsibility for each other's safety, for example by ensuring all occupants are wearing a seatbelt and the driver is not distracted or fatigued.

Fitness for duty means assuring that an individual can complete a task safely and without unacceptable risk to themselves or other. This includes not being under the influence of drugs and alcohol.

Energy Isolation



Verify isolation and zero energy before work begins

- I have identified all energy sources
- I confirm that hazardous energy sources have been isolated, locked, and tagged
- I have checked there is zero energy and tested for residual or stored energy

Energy Isolation: *Verify isolation and zero energy before work begins*



Case Study

A contractor employee was electrocuted when a new power pole was raised prematurely and contacted an energised overhead electrical line, conducting current through the pole's ground wire to a worker on the ground. The new power pole was being installed between two existing poles that held the energised overhead lines.

Energy isolation separates people from hazards such as electricity, pressure and energised equipment.

Energy isolation also provides protection from potential energy sources e.g. positioning valves to prevent tanks filling with materials due to gravity.

Any stored energy (hydraulic or pneumatic power, for instance) should also be released before the work starts.

Hot Work



Control flammables and ignition sources

- I identify and control ignition sources
- Before starting any hot work:
  - I confirm flammable material has been removed or isolated
  - I obtain authorisation
- Before starting hot work in a hazardous area I confirm:
  - a gas test has been completed
  - gas will be monitored continually

Hot Work: *Control flammables and ignition sources*

Case Study

Three contractors died and one contractor suffered serious injuries in an explosion and fire at an oil field. The contractors, were standing on top of a series of four oil production tanks. They were preparing to weld piping to the tanks when a welding tool likely ignited flammable vapours from the tanks.

Click to see a video produced by the CSB

Ignition sources are open flames or sources of heat that could ignite materials in the work area such as welding, grinding, smoking, torching, (un)loading of hazardous materials, internal combustion engines, chemical reactions, batteries, etc

Hot work includes any work that creates an ignition source performed in an area which has potential for hydrocarbons or flammable materials.

Line of Fire



Keep yourself and others out of the line of fire

- I position myself to avoid:
  - moving objects
  - vehicles
  - pressure releases
  - dropped objects
- I establish and obey barriers and exclusion zones
- I take action to secure loose objects and report potential dropped objects

Line of Fire: *Keep yourself and others out of the line of fire*



Case Study

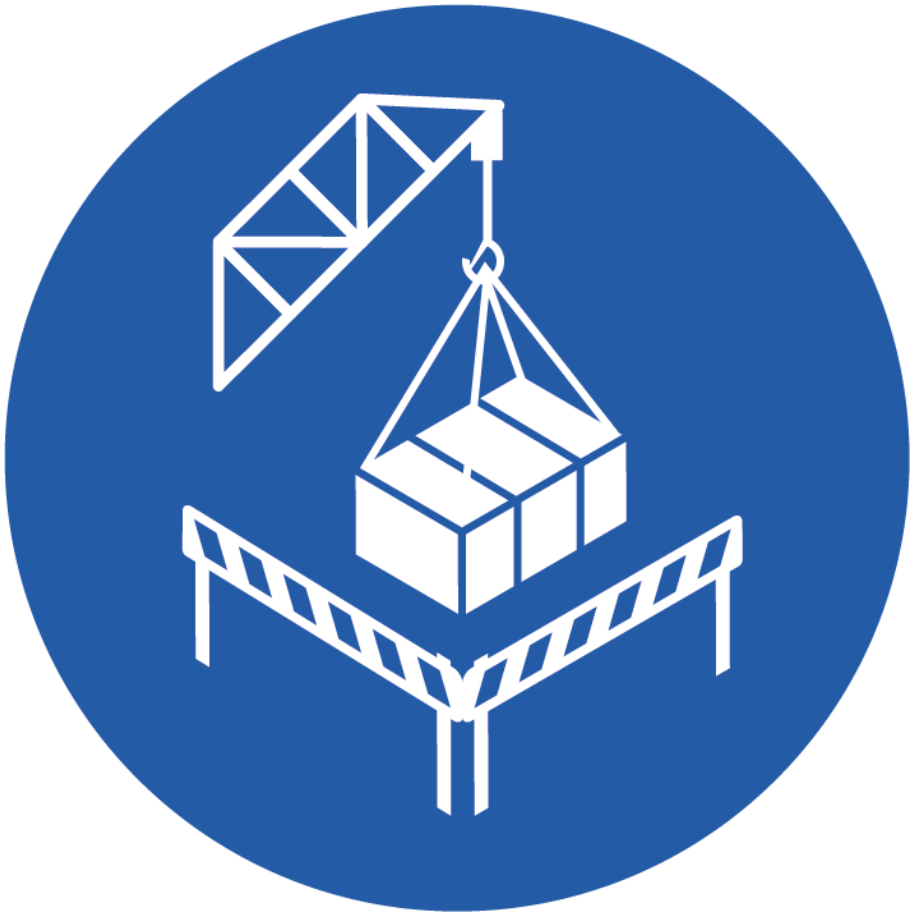
A truck used for transporting workers, water and equipment was parked at a worksite with the engine still running. During a break, workers approached the truck to get water. All workers but one return to their work. This worker had collected sand bags from the truck and was preparing the bags for use while sitting next to the truck. The driver did not notice him, and without performing any walk-around, started the truck, fatally running over the worker.

Line of fire hazards are not always obvious or constant, and can be introduced as the task progresses.

At all times individuals continually monitor their surroundings and position themselves to avoid being in the line of fire. This includes ensuring you are visible to vehicle drivers and equipment operators.

Individuals recognise when they create a line of fire hazard and put others or themselves in the line of fire.

Safe Mechanical Lifting



Plan lifting operations and control the area

- I confirm that the equipment and load have been inspected and are fit for purpose
- I only operate equipment that I am qualified to use
- I establish and obey barriers and exclusion zones
- I never walk under a suspended load

Safe Mechanical Lifting: *Plan lifting operations and control the area*



Case Study

A crew was pulling out the pump and tubing from a water well to move it to another well. The pipe joints were pulled out directly by connecting the auxiliary hook of a crane with the lifting sub on the pipe joint. As the bottom side of a pipe joint was placed on the ground, and while the top portion was still being lowered, the lifting sub with tubing got disconnected from the crane hook. The pipe fell towards the well where a worker was standing and connecting another lifting sub, fatally injuring him.

A suspended load is an object that is temporarily lifted and hangs above the ground, it can fall on you, or swing and crush you.

Lifting operations need to be planned and performed by competent personnel using certified equipment that has been inspected and is fit for the specific lift.

To protect people around suspended loads and any lifting operations, access should be controlled through physical barriers and exclusion zones.

Work Authorisation



Work with a valid permit when required

- I have confirmed if a permit is required
- I am authorised to perform the work
- I understand the permit
- I have confirmed that hazards are controlled and it is safe to start
- I stop and reassess if conditions change

Work Authorisation: *Work with a valid permit when required*



Case Study

A terminal process system was pressuring up at the final stage of whole plant shut down for maintenance, a gas leakage was found around the door of a Refrigeration Unit filter. Two Mechanics were informed to fix it. After the filter was depressurised by one of the duty operators, they started working on the filter without authorisation from the site management. While the Junior Mechanic was loosening the bolts under the instruction of the Senior Mechanic, the door burst open fatally injuring the Senior Mechanic.

Work authorisation is more than just a person in charge signing a Permit to Work form: it is seeking and having authorisation to start, resume, or hand-over a task.

The person in charge of the work confirms that it is safe to start, that controls are in place and effective and the task can be performed as planned.

If anything changes during the work, stop and reassess.

Working at Height



Protect yourself against a fall when working at height

- I inspect my fall protection equipment before use
- I secure tools and work materials to prevent dropped objects
- I tie off 100% to approved anchor points while outside a protected area

Working at Height: *Protect yourself against a fall when working at height*



Case Study

A derrick person was working on the derrick board of a rig. After taking a break, the individual climbed back up to the derrick board and did not attach his fall protection device after unhooking from the climb assist. The worker grabbed the first stand of pipe with the tail rope which helped keep his balance as the elevators were being sent up to attach to the pipe. When he released the tail rope, he lost his balance and fell 90 ft. to the rig floor, where he was fatally injured.

Working at height outside a protected area (such as an elevated work area not enclosed by hand rails) requires the use of approved fall protection equipment secured to an approved anchor point. Other considerations for working at height include ladders, work over water, rope access, floor openings, access hatches, and inspection pits. Floor openings should be protected with physical barriers to prevent falls.

Preventing objects from falling from height and using physical barriers below working area keeps you and people working below you safe.

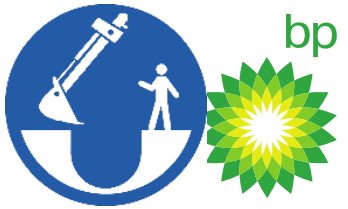
Ground Disturbance (Additional bpx LSR)



Obtain authorization before commencing any excavation

- I confirm all underground utilities are identified, marked, and verified
- I obtain authorization and ensure only trained personnel perform or supervise
- I establish barriers, implement trench protection, and maintain safe access
- I ensure a safe distance is maintained between excavations, equipment, and overhead hazards

Additional Guidance for Ground Disturbance Life-Saving Rule (LSR)



1. Confirm All Underground Utilities Are Identified, Marked, and Verified

- Conduct utility locates using approved detection methods before excavation.
- Cross-check utility maps, permits, and historical site data.
- Use hand digging or hydro-vac techniques to verify utility locations.
- Maintain communication with utility owners for additional confirmation.

2. Obtain Authorization and Ensure Only Trained Personnel Perform or Supervise

- Secure required permits before starting any excavation.
- Confirm all workers have the necessary training and certifications.
- Designate a competent person to oversee excavation activities and ensure a rescue plan is in place.
- Conduct pre-task safety talks to align all personnel on hazards and controls.

3. Establish Barriers, Implement Trench Protection, and Maintain Safe Access

- Clearly mark work zones with barriers, signage, and exclusion zones.
- Use trench protection systems (shoring, sloping, or trench boxes) for stability.
- Ensure proper access and egress, such as ladders, ramps, or walkways.
- Inspect excavations regularly, especially after weather changes or soil movement.

4. Ensure a Safe Distance Is Maintained Between Excavations, Equipment, and Overhead Hazards

- Identify and respect minimum clearance distances from overhead power lines.
- Position heavy equipment away from excavation edges to prevent collapses.
- Use spotters when operating near underground and overhead hazards.
- Monitor and enforce safe working distances throughout the project.

How should I use Life-Saving Rules?



Toolbox talks & Safety meetings

Can we learn from incidents that involved a Life-Saving Rule not being followed?



Pre-job planning

- Are we doing any work today involving a Life-Saving Rule?
- How can we follow the Rule from start to finish?
- What needs to be in place?
- Is everything in place, and in good working condition?



Last minute risk assessment

- Have I done all the Life-Saving Rules actions?
- Is everything as we discussed in the pre-job planning?
- Are there any Line of Fire hazards or ignition sources we didn't identify?



Post-job reviews

- Did we take all the actions associated with the Life-Saving Rules?
- What went well? What didn't go well?
- Anything to note for the next time we have to this perform task or work in this area?



Observations & walkabouts

- Do you see anyone performing work where a Life-Saving Rule is relevant?
- Are they following the Rule?
- Yes? Great, recognise it!
- No? Intervene!



Intervention

- Intervene or stop the work if a Life-Saving Rule is not being followed

Work does not start until we are all aware of the Life-Saving Rules and can confirm we can follow them throughout



We are all authorised to intervene or stop work if we are in any doubt about the safety of an activity or we can't follow the Rules

When the Life-Saving Rules are followed, we all get to return home to our friends & family safely



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Confined Space



Driving



Energy Isolation



Ground Disturbance



Hot Work



Line of Fire



Safe Mechanical Lifting



Work Authorisation



Working at Height