

PROCESS SAFETY FUNDAMENTALS



Engagement questions using IOGP's Process Safety Fundamentals (PSF)

IOGP has prepared engagement questions for each of the ten Process Safety Fundamentals. The questions are designed to engage with the principles (bullet points) in each of the PSFs and can be used in existing leadership verification activities in the field or at task level.



We respect hazards

- We improve our understanding of process safety hazards at our location and our roles in controlling them.
- We are vigilant about the potential impacts of uncontrolled process safety hazards.
- We discuss process safety hazards before starting a task.
- We bring forward process safety hazards to be included in activity risk assessments.

Related questions

- What are the overall major accident risks in the facility?
- What are the major accident risks you're potentially exposed to during your current task?
- What is your part in controlling the process safety hazards at the facility?
- How do you ensure you and your work team understand the potential impacts of uncontrolled process safety hazards?
- How do you determine which process safety hazards apply in risk assessments?
- How would you respond if someone disagreed with your views on likelihood or consequence during a risk assessment?
- What are the relevant process safety hazards that need to be discussed in the toolbox talk before work starts?



We sustain barriers

- We discuss the purpose of hardware and human barriers at our location.
- We evaluate how our tasks could impact process safety barriers.
- We speak up when barriers don't feel adequate.
- We perform our roles in maintaining barrier health and alert supervision to our concerns.
- We use an approval process for operations with degraded barriers.

Related questions

- What barriers are you relying on during this task?
- Does this current task rely more on hardware or human barriers? Do you feel that they are adequate to manage the process safety hazard?
- How could this current task impact or impair barriers? Are we defeating any process safety barriers while performing this procedure? How is the gap being managed?
- Are there any barriers you're relying on during this task that you're concerned are inadequate? Have you informed your supervisor? What additional safeguards have you identified to manage this concern?
- Are there any barriers you're relying on during this task that have a history of failing? What is your planned response in the event it happens again? How will you know if they have failed?
- Are there any long-standing "approved" degradations that you may encounter during this task? What is your plan for managing their impact on your work?
- Do you believe that the risk assessment accurately reflects the current status of the barriers? What is the current status of the barriers?



We watch for weak signals

- We proactively look for indicators or signals that suggest future problems.
- We speak up about potential issues even if we are not sure they are important.
- We persistently explore the causes of changing indicators or unusual situations.

Related questions

- What are some of the weak signals or indicators that you could look for during this task? Do other team members know about these weak signals?
- Have you established any boundaries for the signals or indicators that would result in an immediate stop of the job? What are the alarms, readings or signals that could indicate something is going wrong?
- What are the critical steps in your task that, if wrong or fail, could result in future problems?
- Where would you expect "feedback" during your task to know you're progressing successfully? Where would you expect "feedback" during your task to know that something is not going to plan?
- Do the procedures that you are using specifically require the activity to stop/pause at any stage until appropriate "feedback"/confirmation that a step in the process has been accomplished successfully has been received, before moving onto the next step in the activity?



We recognise change

- We look for and speak up about change.
- We discuss changes and involve others to identify the need for management of change (MOC).
- We review the MOC process for guidance on what triggers an MOC.
- We discuss and seek advice on change that occurs gradually over time.

Related questions

- Has anything changed since you last performed or trained on this task? What are the changes?
- Are there any recent changes to the site which may impact the task? What are they and what is the response plan for your task?
- Are there any MoCs associated with the task you're completing today? What impact could they have?



We stop if the unexpected occurs

- We discuss the work plan and what signals would tell us it is proceeding as expected.
- We pause and ask questions when signals and conditions are not as expected.
- We stop and alert supervision if the activity is not proceeding as expected.

Related questions

- What would cause you to stop this task immediately?
- What are the signals to confirm the task is proceeding as expected? What are the signals that may mean something is not going to plan?
- What are the go-no go check-ins associated with this task to ensure it's proceeding as expected?
- Who can you speak to when signals and conditions are not as expected?
- Are there any points in the task that require a sign-off by a supervisor or check by a second person? Is the person aware of this requirement?



We apply procedures

- We use operating and maintenance procedures, even if we are familiar with the task.
- We discuss the key steps within a critical procedure before starting it.
- We pause before key steps and check readiness to progress.
- We stop, inform supervision and avoid workarounds if procedures are missing, unclear, unsafe, or cannot be followed.
- We take time to become familiar with, and practice, emergency procedures.

Related questions

- What is the procedure you're using for this task? Have there been any updates since you last used it? How do you know it's the most current?
- What are the key steps in this task? What makes them the key steps?
- Are there any known "workarounds" used in this task? What is the issue? How can the procedure be updated (prior to executing the task) to reflect how work actually occurs?
- What are the emergency responses and procedures that may apply if something doesn't go as expected with the task?



We stay within operating limits

- We discuss and use the approved operating limits for our location.
- We escalate where we cannot work within operating limits.
- We alert supervision if an alarm response action is unclear or the time to respond is inadequate.
- We obtain formal approval before changing operating limits.
- We confirm that potential for overpressure from temporary pressure sources has been addressed.

Related questions

- What are the key operating limits for this task? What is the response if these operating limits are exceeded during the task's execution?
- Are there any key alarms that may be activated during this task that need to be actioned? What is the response to these alarms?
- What are the impacts to the relief system if there are any changes in line-ups associated with the task?
- If temporary equipment is being connected to the process that has the capacity to exceed system operating limits; has this been identified and are these risks being managed?



We maintain safe isolation

- We use isolation plans for the specific task, based on up-to-date information.
- We raise isolation concerns before the task starts and challenge when isolation plans cannot be executed.
- We check for residual pressure or process material before breaking containment.
- We monitor the integrity of isolations regularly and stop to reassess when change could affect an isolation integrity.
- We confirm leak-tightness before, during, and after reinstating equipment.

Related questions

- What is the isolation plan for this task? Is it unique to this task?
- Have all associated work teams reviewed and signed off on the plan?
- Are there any locations of concern in the isolation plan for this task? What is the plan to manage these?
- Can positive confirmation on isolation (no residual pressure or material) be confirmed prior to breaking containment during this task? What is this plan?
- What could change the integrity of the isolation?
- Are there stop points during the task to ensure the integrity of isolations in key locations in the facility? What are these points?
- Is there a leak-tightness confirmation included in the reinstatement of equipment associated with this task? Who is performing the confirmation?



We walk the line

- We use up-to-date documentation (e.g., Piping and Instrumentation Diagrams) that accurately reflect installed systems and equipment.
- We physically confirm the system is ready for the intended activity (e.g., valve positions, line up of relief devices, etc.).
- We alert supervision to identified documentation and readiness issues before operation.

Related questions

- What is the documentation you're using for this task? Does it have up to date documentation, reflecting all installed systems and equipment?
- Where are the points of confirmation in the facility to ensure the system is ready for task execution?
- Are the points of confirmation in the facility to ensure the system is ready physically confirmed in the field? Whose role is it to make this confirmation?
- Are there any other readiness checks that need to be completed prior to execution of the task?



We control ignition sources

- We identify, eliminate, or control the full range of potential ignition sources during task risk assessments and during job preparation and execution.
- We minimise and challenge ignition sources even in "non-hazardous" areas.
- We eliminate ignition sources during breaking containment and start-up and shutdown operations.

Related questions

- What sources of ignition are possible in the facility while executing this task?
- Could the task you are performing introduce ignition sources to the facility? What controls are in place to prevent this?
- Are there simultaneous operations which could introduce an ignition source during your task or at critical points?
- Is the area where the task is being conducted restricted during critical procedures? How do people know?
- If a release occurred, how far could the flammable gases disperse, what areas could these reach and what would be the effects?