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**SAF**EW**OR**K

# Process Safety Essentials

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FW-112 - WAH-539

SE-4" - DAA-068



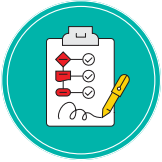
# Safety

**We never compromise on safety. We look out for one another and stop work if it's not safe.**

Our ambition is to prevent all fatalities, occupational diseases and injuries at work.

Mitigating risk is at the heart of our safety management approach. We seek to achieve this through SafeWork.

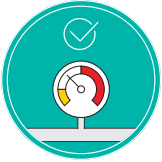
Our SafeWork framework is risk-based, focusing on eliminating fatalities and serious injuries by identifying the hazards that can result in fatal incidents and developing life-saving behaviours and protocols to target them.



We apply procedures

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We operate safe processes

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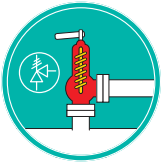
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We maintain equipment integrity

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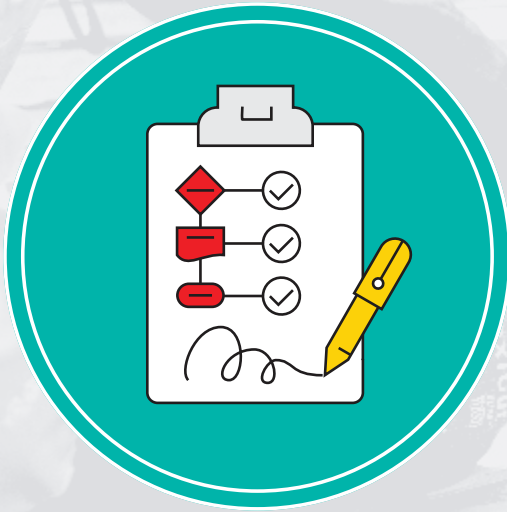
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**We report process safety hazards and incidents**

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# We apply procedures



## We apply procedures

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- ▶ We follow fit-for-purpose, up-to-date, clear and concise operating and maintenance procedures.
- ▶ We have procedures for start-ups, shutdowns, normal operations and emergencies.
- ▶ We discuss the importance of following all documented steps of a critical procedure before starting a task.
- ▶ We escalate if procedures are missing, unclear, unsafe or require workarounds.
- ▶ We practise our emergency procedures.

# We operate safe processes





## **We operate safe processes**

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- ▶ We follow the approved safe operating limits for our processes and understand the consequences of deviation.
- ▶ We ensure all of our personnel are trained and competent.
- ▶ We respond to and manage process alarms.
- ▶ We proactively look for indicators, signals and trends that suggest problems.
- ▶ We know the status of our processes, plant and equipment both in the field and in the control system.
- ▶ We know how to respond in abnormal situations.

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# We maintain equipment integrity

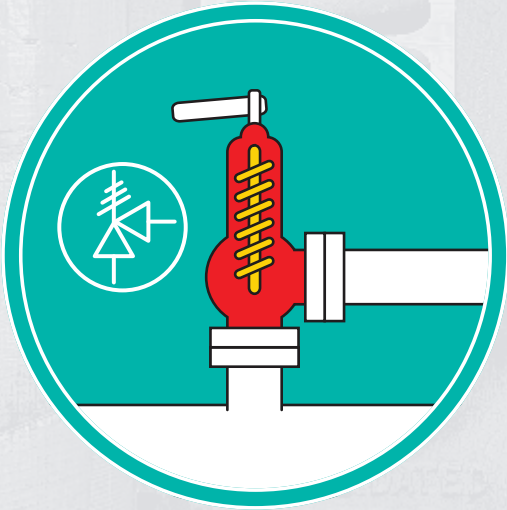


## **We maintain equipment integrity**

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- ▶ We know and understand the hazards contained in our plant and equipment.
- ▶ We design, operate and maintain our equipment to contain hazardous substances and energies using engineering Standards, Codes, Regulations, specifications, manuals and Procedures.
- ▶ We maintain our equipment to be fit for service.
- ▶ We regularly inspect the physical condition of plant and equipment in the field.
- ▶ We prioritize maintenance of plant and equipment containing hazardous substances or energies and safety critical systems and equipment (e.g. pressure safety valves).
- ▶ We ensure that engineering controls are in place, available, reliable and functional.

# We sustain safety critical equipment

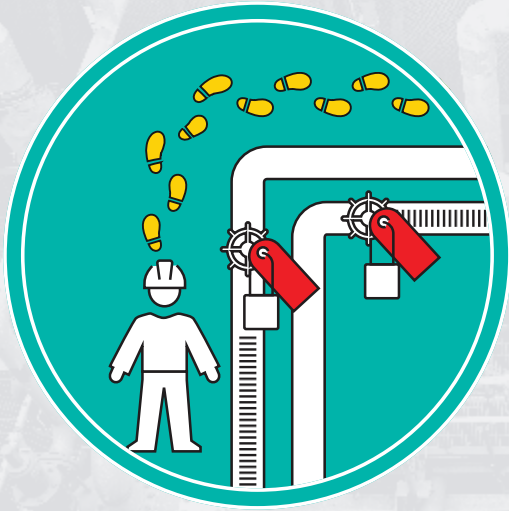


## **We sustain safety critical equipment**

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- ▶ We identify our fatal and catastrophic hazards and the safety critical systems and equipment required to prevent and mitigate incidents.
- ▶ We have unique identifiers in our maintenance management systems for safety critical equipment with appropriate maintenance plans and records.
- ▶ We maintain, test and calibrate safety critical systems and equipment on a scheduled basis.
- ▶ We escalate the degradation or failure of safety critical equipment.
- ▶ We only operate degraded safety critical equipment temporarily and after risk assessment, approval and sign-off.

# We walk the line



## We walk the line

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- ▶ We use up-to-date documentation (e.g. P&IDs) that accurately reflects installed systems and equipment.
- ▶ We label our plant and equipment accurately and clearly in the field.
- ▶ We physically verify that processes and equipment are ready for the intended activity (e.g. valve positions, drains, line-up of relief devices, etc).
- ▶ We conduct scheduled and informal operator walkarounds.
- ▶ We bolt up and tension our equipment, pipes, joints and flanges to specification before start-up.
- ▶ We follow equipment start-up and shut-down procedures.

# We control ignition sources





## We control ignition sources

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- ▶ We avoid hot work whenever possible and consider alternative methods.
- ▶ We have designated hot work areas on site.
- ▶ We use work permits for hot work based on proper hazard identification and job safety analysis.
- ▶ We drain, flush, or purge equipment to remove flammable/explosive materials or gases prior to conducting hot work.
- ▶ We monitor the atmosphere and the environment when we conduct hot work.
- ▶ We always maintain a fire watch after hot work.

# We recognize and manage change



## **We recognize and manage change**

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- ▶ We have a clear definition of what constitutes change and what process(es) are used to manage change.
- ▶ We obtain formal approval via a Management of Change process before changing anything.
- ▶ We manage change at our location via a process that includes approvals to proceed, stakeholder engagement, risk assessment, implementation, communication and close-out activities.
- ▶ We have processes in place to manage permanent changes, temporary changes and emergency changes, as well as bridges and overrides.
- ▶ We do not make quick, ad hoc changes in the field.

# We closely attend to open drains and critical transfers



## **We closely attend to open drains and critical transfers**

- ▶ We design and install our equipment such that it is impossible to put the wrong material into the wrong tank.
- ▶ We do not leave an open drain or critical transfer unattended.
- ▶ We verify the integrity of the connections made for critical transfers and their ongoing status during the transfer.
- ▶ We wear the appropriate PPE during critical transfers.
- ▶ We maintain situational awareness during critical transfers.

# We conduct thorough shift handover



## **We conduct thorough shift handover**

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- ▶ We conduct our shift handovers face-to-face.
- ▶ We record information clearly and concisely in the shift logs.
- ▶ We have a clearly defined set of information to be covered in each handover, for example, permits, equipment changes, incidents, plant status.
- ▶ We discuss temporary and emergency changes and monitoring actions.
- ▶ We use checklists to hand over start-ups or shutdowns over multiple shifts.

# We report process safety hazards and incidents





## **We report process safety hazards and incidents**

- ▶ We manage and report on any loss of containment of hazardous substances or energies.
- ▶ We classify events and near misses following process safety incident classification criteria.
- ▶ We identify and address the root causes of process safety incidents.
- ▶ We report on challenges to, deficiencies in and failures of process safety critical systems and equipment.
- ▶ We learn from experience, not just our own.

# Notes

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