

SASOLBURG & EKANDUSTRIA OPERATIONS

SAFETY HEALTH AND ENVIRONMENT

SO-SHE-LOG-015

SHE incident learnings log sheet

OME SHE Learning

Learning/SAP number	4611		
Operating Entity	Sasolburg & Ekandustria Operations: Midland Site, Cyanide		
Date of incident	3 February 2022	Severity of incident	Level 2 - Significant

Incident type	Occupational Safety	Process Safety	Environment	Product Transportation	Health	Security	Equipment Damage	PSF
	X	X	X					X

Relevant Life Saving Rules (LSRs)											
		X				X	X		X		

Relevant Process Safety Fundamentals (PSFs)											
			X	X			X				

Key Undesirable Event (KUE)	Loss of containment of toxic or flammable substances.
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Description of the incident	A service provider employee was exposed to sodium cyanide while erecting a scaffold below the recycle line of the Cyanide Crude Tanks.
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Compiled by Senior Manager: SHE Occupational Safety	Authorised by Acting Manager: SHE Systems& Continuous Improvement	Date	Revision
Will Smith	Louise Ravazzolo	13.01.2022	0

Add pictures



Underlying and root causes

Underlying causes:

- Following flushing of the pipeline, liquid dripping was perceived to be water from washing activities.
- The isolation valve, separating the transfer line and leaking pipeline, was leaking through.
- The isolation valve was not known to be leaking through, as the drain valve was found to also be blocked.

Root causes:

- No site verification was done when the leak was reported by the SP during PTW process or for touch and tag.
- Maintenance strategy for the isolation valve requires revision.
- Crystallisation in the drain line created a false indication that safemaking had been achieved as the line was blocked.

Key learning and control improvement recommendations

1. PTW issuers must understand the process of withdrawing/cancelling a PTRAs if conditions become too unsafe to continue. Site verification should always be done as part of PTW and the touch and tag processes. The PTW issuer (or qualified proxy) should respond to reported changes in plant safety conditions by conducting a site verification, specifically to establish whether a hazardous product is involved.
2. The PTW exemption lists must be consulted as an everyday tool to ensure all tasks are correctly classified. If the task is not stipulated as exempted, a permit must be issued until such time as the task is considered for and added to the exemption list (irrespective if the risk is deemed to be low).
3. Unknown leaks in a plant should always be treated as hazardous and sampling should be done before any leak is confirmed non-hazardous. Additional sampling must be considered when there are changes in conditions, extended time periods prior to, or between activities or where there are connections to hazardous chemical lines.
4. PPE requirements must be visually displayed by plants. Line supervisors must ensure that all employees working in the area are aware of all PPE types used in the area and their correct application. Plant Hazard Awareness should include specification and use of specialised PPE available in the area (e.g. gumboot types, chemical hood usage and tape up of acid suits). Management of change must be followed for changes in PPE and all stakeholders must be made aware/trained.
5. Managers and the Learning department should ensure that employees training needs are aligned with the available SOPs, WI and SSPs. Rules and initiatives in plants concerning less frequent occurrences should be captured in SOPs to ensure they are preserved, learned and practiced.
6. Production teams should scope, discuss and plan isolations and safe making for planned tasks based on best practices. Unproven isolation should never be used for work on hazardous chemical systems without the correct level of authorisation. Where there is a leak on a line connected to a live system containing hazardous material, positive isolation prior to maintenance, should be considered.
7. Service providers and employees should be reminded of the major hazards in the plant every time they visit, even though they may have attended the Plant Hazard Awareness session. Managers are encouraged to include an assessment of understanding in Plant Hazard Awareness training to check for understanding of plant specific emergency response.
8. Potential dead legs on drain points which can become blocked or crystallised during normal operation should firstly be identified on a list and then either be designed to prevent the blockage or a management strategy developed to account for the possibility of blockage during safe making activities.
9. Employees should take the time to observe their colleagues/service providers and stop tasks that appear unsafe. This should not be constrained to BBS observations only. All tasks where there are high risks of hazardous chemical exposure must be closely supervised.
10. KUE checklists are an additional tool to pick up deficiencies before incidents occur.
11. Emergency exercises must include plant/area identified KUE events (i.e. that plant specific phone call that you do not want to make) and should be sufficiently detailed to include completion of Area Emergency Action Plan checklists as well as First Aid/Decontamination/Hazmat procedures.
12. Plant owners should take the initiative to complete or assist service providers in completing the Injury Report Form (SIR002) for injuries involving chemicals in their areas, as they are subject matter experts on the hazardous chemicals the service provider was/could have been exposed to.
13. Service providers must report to the control room/permit office if they feel dizzy, fatigued or unwell. Never assume it is nothing serious. Plant owners must first consider any chemical exposure as a reason for a person feeling unwell.

To prevent future incidents, it is recommended that this incident learning is appropriately shared and implemented by relevant persons in your Operating Model Entity, where applicable.