



FUELS INDUSTRY
Association of South Africa

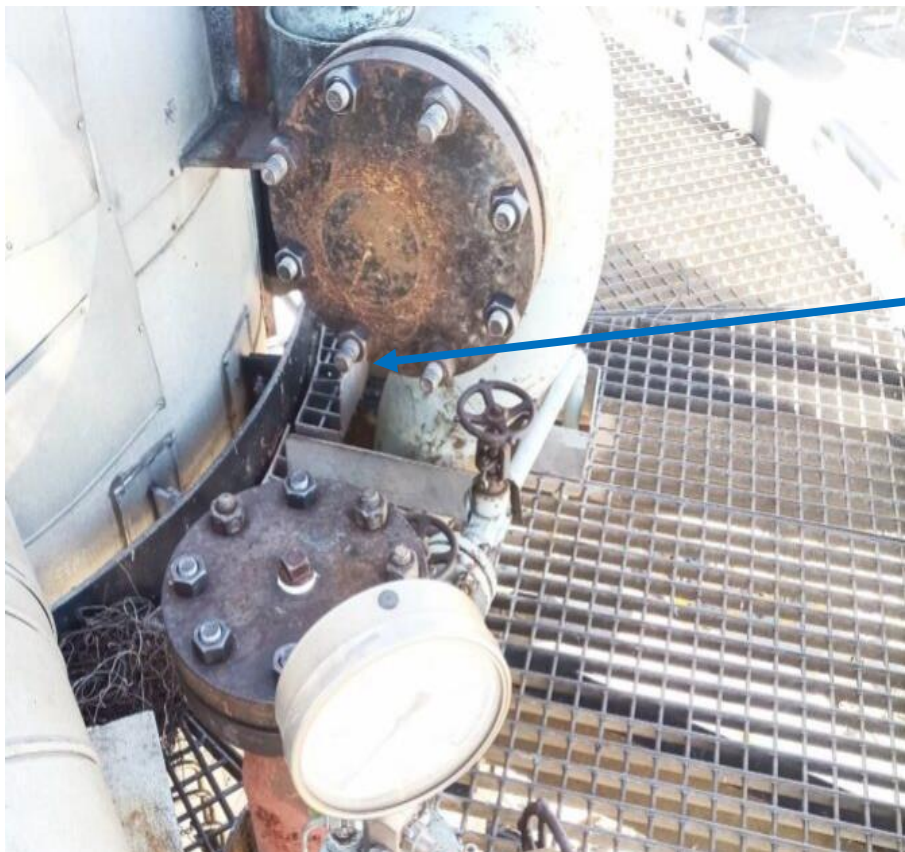
Sasol – Exposure to gas. June 2024

2024



INCIDENT DESCRIPTION

Description of Incident: Two service provider mechanical fitter employees were exposed to some fumes while installing an end blank on a pipeline where a pressure safety valve (PSV) was removed.



Position of PVS that was removed.



INCIDENT UNDERLYING AND ROOT CAUSE

Management leadership and supervision:

- The preparation of permits in advance is not enforced, which could have allowed for adequate time to prepare permits and ensure adequate safe making measures.
- There is inadequacy in the practices followed for shutdown front-end loading (FEL). Representation of different disciplines during validation sessions was lacking, and as a result safe making blanks were missed in the plan.

Ineffective implementation of procedure:

- It is the practice in the area to only request authorising manager approval when installing blanks on the flare header. Once the flare header blanks are installed, any work inside the battery limit is not considered to require authorising manager approval.
- Inadequate application of the blank list philosophy. Blank lists are approved for maintenance work to continue with lines on the document left blank/unfilled, where some safe making blanks are not actioned (open/closed)

Rule, process or procedure not followed:

The permit was prepared only considering the safe making on the inlet side of the PSV. The outlet side of the PSV was neither blocked in nor isolated from the flare header.

- The area safe making checklist was utilised to verify safe making before the permit was issued. It indicated that the equipment was isolated from the process, however, the PSV was not isolated from the flare system.



INCIDENT UNDERLYING AND ROOT CAUSE

Management system and administration:

Frequent safety discussions should be conducted on the consequences of injuries when working with high-risk tools in order to prevent team members from developing a lower risk perception on the use of high-risk tools.

Safety climate and team norms:

- The SOP and decommissioning checklist were insufficient as they did not include safe making of the unit.
- A safe making plan was not in place to align the safe making requirements between disciplines, which led to the flare system not being isolated for removal of the PSV.

Poor team culture in terms of operational discipline:

- It is noted that there is overall a poor team culture relating to operational discipline in that:
 - A lack of ownership exists from management on first level of assurance, verification of critical controls, application of blank list, shutdown planning, enforcement of first line break principle, updating of procedures and checklist.



INCIDENT LEARNINGS

- Ensure that equipment is isolated from the process on both ends before execution of maintenance activities., depressurised and purged with nitrogen. Remove a vent or drain end blank/plugs and ensure the system is LEL free before opening flanges.
- If “zero” LEL in the piping cannot be achieved, use an air line mask when opening flanges. Consider the wind direction and barricade the area.
- As part of the first line break procedure, a production standby should be present in the work area when process equipment containing hazardous material is opened for the first time. This is to ensure continuous risk monitoring and that necessary actions are taken should there be an unexpected release of hazardous material.
- Decommissioning checklist should include safe making actions to be followed by the safe maker. Production area managers must ensure that the checklists are kept up to date with the latest information.
- Detailed alignment between the foreman and the area manager on how to make the system safe in a form of a safe making plan and this should be included in the shutdown program to adequately allocate resources and time.
- The blank list shall be used in the approved format and may not be altered in any way after approval. Not installing all the safe making blanks and leaving the lines on the document open is seen as deviating from the approved blank list.



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Thank You

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