

Safety Alert: 15

Date: April 2021

Filter Maintenance – care with metal castings

This safety alert is shared in order to promote learning and improve safety. You should seek appropriate guidance regarding the relevance, accuracy, and completeness of this alert to your circumstances prior to implementation.

Theme

Plant - Assets - Plant & Equipment (Operations & Maintenance)

Issue

As part of scheduled maintenance, terminal operators carried out removal, visual inspection, and cleaning of a diesel loading bay filter.



Filter in position

After completion of the scheduled maintenance the filter was re-installed. Additional force was applied with a copper hammer to ensure the filter lid was tightened and no leaks were present. As no vehicles were loading at the time of the maintenance activity, the loading pump had been shut down, however the line had been pressurised to complete a service test; this caused the cast-metal lid of the filter to fail resulting in a leak of approximately 308 litres of diesel. The site Emergency Shutdown (ESD) was immediately activated by staff, initiating the bay isolation valve (BIV) closure, and the area was made safe. The spill was contained on site.

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Filter broken casting

Learning

When leaks are detected after planned maintenance, there can be a temptation to use additional force to tighten filter lids to stop the leak. This filter lid is designed to be hand tightened only.

Risk assessments and maintenance procedures for planned maintenance activities on filters should emphasise the reasons for following manufacturers guidelines, in this instance hand-tightening only.

- Filter seals should be assessed to ensure that a leak-free seal is made using the manufacturers guidelines. Seals should be replaced if this is not the case.
- Filter lids should be examined for signs of damage.

Consideration should be given to understanding why a system or component is not functioning as designed before taking inappropriate action.

Further Resources

Reference should be made to individual manufacturers specification and instruction sheets for the correct operation and maintenance of filters.

In addition, the sensitivity of cast iron to pressure pulses and over-pressurisation from volatilising liquor internally is a known hazard and all precautions should be taken to prevent this.

Pipework design should never allow the isolation of plant which may become pressurised in an uncontrolled manner.

The Process Safety Forum has been set up to provide an industry association platform whereby initiatives, best practice, lessons from incidents and process safety strategy can be distilled and shared across sectors, to influence our stakeholders (including the Regulators), and to drive the process safety management agenda. The Process Safety Forum consists of representatives from across industry, refer to the website for details.

The website is www.p-s-f.org.uk