

Process Safety Forum

The Process Safety Forum consists of representatives from UKPIA, TSA, CIA, OGUK and NIA

Process Safety Alert 001

Issued on:

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Issued by:

Process Safety Forum

Subject:

Valve Seal Compatibility with Gasoline/5% Ethanol Mix (E5) on Fuel Loading Racks at Terminals

Issue

Two recent incidents on fuel loading racks at terminals have resulted in the loss of containment of product (E5).

Loss of product was due to the failure of the Flow Control Valve (FCV) to close completely once the target volume had been reached. Note in both incidents, the FCV acted as both the metering valve and the automated shutoff valve.

In one instance it was seen that the 'O' ring seals used on the FCV had failed, in the second case, an 'O' ring seal on the Normally Open solenoid (which closes the FCV) had failed.

At least one of the incidents was probably caused by product attack on the 'O' ring.

Learning

The Management of Change process prior to the changeover did not adequately identify the risk of product attack from the new material and the need for ongoing inspection to confirm any assumptions made.

Verify the suitability of the 'O' ring seals used in both FCV and associated solenoid valves for compatibility with E5. This review should be done in consultation with the valve and seal manufacturers.

As part of ongoing maintenance procedures, ensure that 'O' ring seals are inspected for signs of product attack.

Other non-metallic components of the system should also be examined for compatibility with E5.

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Further
Consideration

Where the FCV is used as both the metering valve, and the automated shutoff valve, consideration should be given to performing a risk assessment to determine if independent automated shutoff valves are required.

Distribution:

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