

Safety Alert

Number: 18-16

Published: 13/06/2018

Subject: Machinery Failure

What Happened / Narrative

A vessel recently experienced machinery failure which had significant potential to result in a far more serious incident.

The vessel was standing by at location due to fog preventing operations. At 03:20 the high-level alarm on the forward bilge sounded. On investigation of the alarm, the forward bilge was found to be full of fuel oil. The fuel was seen to be spraying from the port main engine onto the engine room plates.

Why Did it Happen / Cause

On inspection the fuel oil secondary filter differential pressure sensor isolating valve on the port main engine had cracked and was causing the fuel spray. It was estimated that approximately 1m³ of fuel had been lost to the bilges.

The failure of the valve was caused by a combination of engine vibrations and the weight of the assembly acting on the male threaded section of the brass valve.

The pipe arrangement had been altered from the original set up due to pressure fluctuations interfering with the proper functioning of the sensor. The long-term impact of the alteration does not appear to have been properly assessed by the manufacturer prior to the alteration being made

Corrective Actions Taken / Recommendations

In response to the incident the following actions were taken;

- The brass valve fitting is to be replaced with a stainless-steel equivalent to provide additional strength to the arrangement.
- A deflector plate was added above the valve in order that in the event of any future failure, any fuel spray will be prevented from contacting hot parts of the engine.
- Support arrangements for the assembly were investigated but deemed impractical.

Incidents such as this should act as a reminder to apply the management of change process and give due consideration to the short and long-term consequences of changes implemented on board.

Many people viewing this change critically under a management of change, would question the long-term ability of the threaded section to support the weight of the full assembly. It is possible that this would have led to alternative solutions being considered and this high potential near miss being avoided.

At your next HSE meeting please review the Management of Change process, in particular in association with the following extracts from the procedure;

- Technology: Changes to technology, systems and tools. Introduction of new systems and programs.

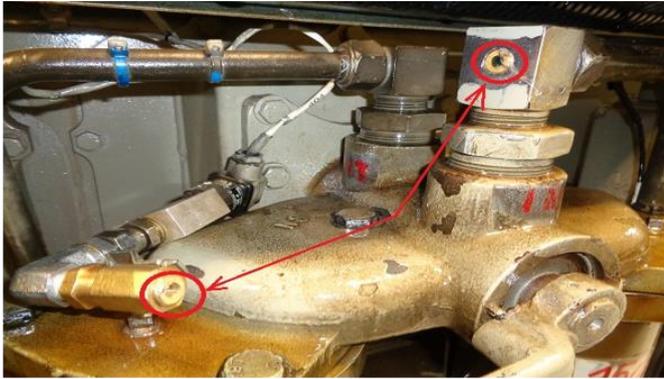
And the following considerations;

- The potential risks associated with the change.
- The arrangements to control the risks.
- Key safeguards which are in place to ensure HSE is maintained.
- The monitoring arrangements including the corrective action process.

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Photographs / Supporting Information



Failed connection as found by duty engineer



Connection after initial temporary repair



Deflector plate fitted to prevent fuel being sprayed onto the hot areas of the engine

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