



Tank Storage Association
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Safety Alert

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Tank Storage Association

Subject:

Failure of flexible hose during discharge of a ship

Issue

A rubber marine cargo hose failed during the discharge of the vessel on 2nd June 2015. The hose failure resulted in approximately 4 tonnes of Heavy Fuel Oil (HFO) being lost into the sea. The oil spill was kept within a small area and was swiftly remediated.

The nature of the failure was that the "hose tail" at the jetty manifold end of the hose was ejected from the rubber hose itself. A full bore failure resulted, the hose did not burst. Investigations revealed that the hose was 17 years old. The hose was suitable for the duty, and was compatible with the product being transferred, and the temperature and pressure. It was being inspected and tested by a 3rd party hose specialist company on a 6 monthly basis.

Learning

The inspection and test performed did not align with relevant good practice for hoses of this type, and the tests were not sufficiently rigorous. An important test to check against a key retirement criteria was not being performed.

Guidance suggests that the hose should probably have been retired at around half of its age at failure, irrespective of the hose condition

Recommendation

Verify that your use of third party expertise and all inspection and testing of flexible hoses complies with relevant good practice.

References

The following references set out relevant good practice

1. Mechanical Integrity : Use of third party expertise on high hazard sites:
<http://www.hse.gov.uk/comah/guidance/mechanical.pdf>
2. The Use of External Contractors in the Management of Ageing Plant – CDOIF:
<http://www.hse.gov.uk/aboutus/meetings/committees/cif/cdoif-external-contractors-managing-ageing-plant-230315.pdf>
3. The mechanical integrity of plant containing hazardous substances - A guide to periodic examination and testing (SAFED IMG 01 / EEMUA 231):
<http://safed.co.uk/technical-guides/pressure-equipment/>
4. Energy Institute publication "Guidance for the management and use of flexible hose assemblies" 2nd edition, February 2011
<https://www.energyinst.org/home>
5. BS 1435-2:2005 Rubber hose assemblies for oil suction and discharge services. Recommendations for storage, testing and use.
6. ISGOTT - International Oil Tanker and Terminal Safety Guide, 5th Edition, 2006 ISBN: 1 85609 291 7

Distribution:

UK Petroleum Industry Association
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Process Safety Forum