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Safety Alert 008 - ANP/SSM

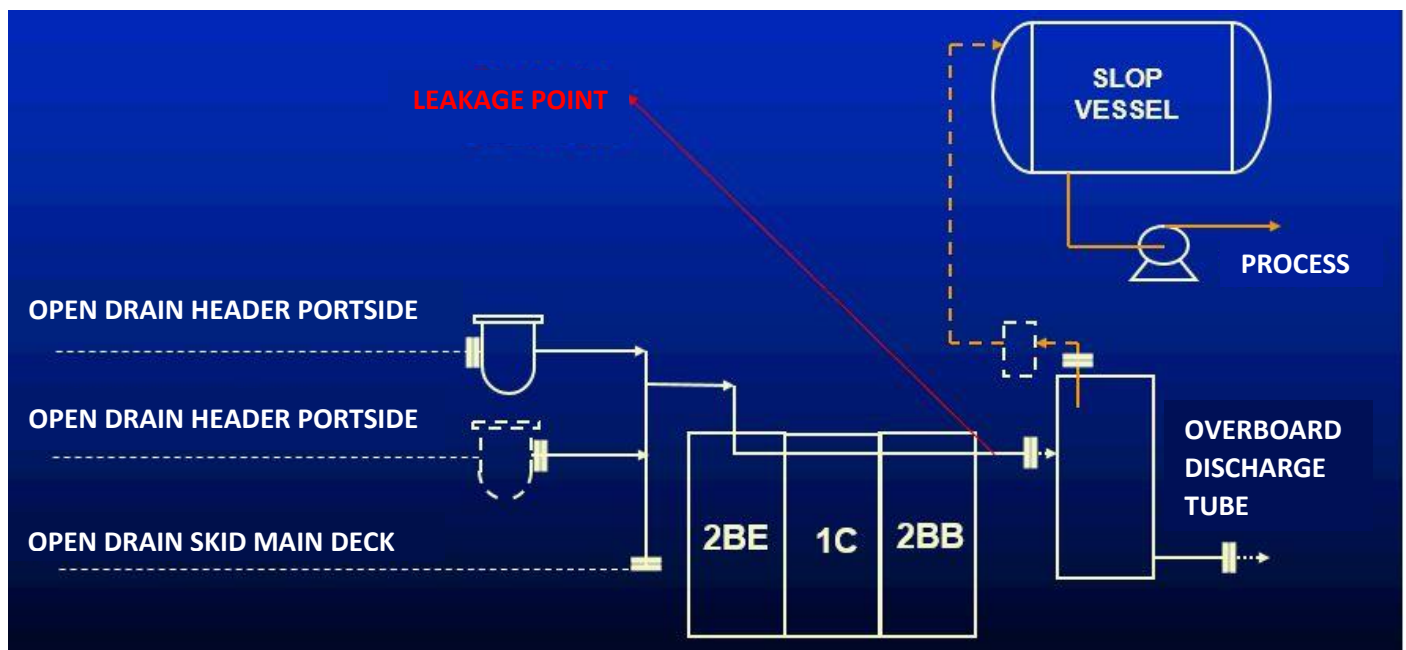
Oil spill into the sea due to leakage through a decommissioned drain line

The Superintendence of Operational Safety and Environment alerts the oil and gas industry and other stakeholders about an oil discharge to the sea caused by leakage in a decommissioned drainage line in an oil production unit.

What happened?

During a round made by technicians of the FPSO-type production unit, an oil slick was seen in the sea close to the unit. Afterwards, it was found that there was an oil spill in the sea due to oil leakage caused by loss of containment in a line belonging to the FPSO original open drain system, which passes cargo tanks.

This open drainage pipe is reminiscent of the ship's original design, which after conversion to a FPSO was kept in place but was deactivated and blocked at its ends. The overboard discharge tube was blocked by a valve and a spectacle blind. After this modification, the FPSO's open drainage piping was directed to the slop tank, as shown in the diagram below:



The oil stored in a cargo tank migrated into the deactivated pipe due to a hole in the empty pipe section that passes horizontally through the inside of the cargo tank, which was immersed below an approximately 1.5 m oil column when the tank was at its full capacity. The last inspection inside the cargo tank had not identified any damage to that pipe. Another hole in overboard discharge tube upstream the isolation valve allowed the leakage of oil into the sea.



After transfer of the oil inside the cargo tank, resulting in a lower oil level inside the tank, the leaking ceased.

Potential Consequences

The accident caused the leakage of about 300 liters of oil into the sea. If the oil stored in the tank had not been transferred to cease the leakage, this volume could have been considerably higher.

Identified Causes

- Failure in elaborating the management of change for the decommissioning of the unit's original open drainage system.
- Lack of inspection on decommissioned systems.
- Failure to identify the operational risks for the cargo and drainage systems.
- Lack of definition about the responsibility for inspecting lines inside tanks.

Lessons Learned

- Non-operational equipment must have the risks arising from the decommissioning process controlled through Management of Change.
- While the decommissioning is ongoing, piping and equipment that are out of operation must be included in the inspection plans to maintain an integrity level that guarantees the safe condition of the installations.
- Provide, in the decommissioning, adequate isolation plan and blockages for the lines, to avoid interconnection with other systems in the Maritime Unit, especially inoperative sections for overboard and open drainage system.

- Consider, in the applicable risk analysis and management of changes, the integrity conditions of the lines inside tanks and the associated risks, such as gas return to the deck, cargo transfer between tanks and oil leakage to the sea.
- Implement an integrity management routine (inspections and maintenance) for the pipes that pass inside the tanks.

Regulatory Framework

As per ANP Resolution 43/2007, Operational Safety Management System (SGSO) Management Practice 10, item 10.2.1, Facility Operator must: “Meet design requirements and consider rules, industry standards and good engineering practices in project planning, construction, installation and decommissioning”.

Item 12.2 states that “Facility Operator will be responsible for the identification and qualitative or quantitative risks analysis, as applicable, with the purpose of recommending actions to control and reduce incidents that compromise operational safety”.

SGSO item 13.2.1 states that “Facility Operator shall establish plans and procedures for inspection, test and maintenance, in order to seek mechanical integrity of its systems, structures and Critical Equipment and Systems. Such documentation shall comply with manufacturer’s recommendations, standards, and engineering practices”.

Regarding permanent or temporary Management of Changes to be proceeded in the installation, SGSO item 16.3.2 stipulates that the facility operator must establish and implement a procedure to manage changes that may affect Operational Safety, which must consider the assessment of hazards and the overall impact on activities, prior to the implementation of modifications.

Contact

For additional information about this Safety Alert, please contact the ANP Superintendence of Operational Safety and Environment at incidentes@anp.gov.br.