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Agência Nacional
do Petróleo,
Gás Natural e Biocombustíveis

Safety Alert 007 - ANP/SSM

Oil spill into the sea during offloading operation

The Superintendence of Operational Safety and Environment is issuing this safety alert to notify the oil and gas industry and other stakeholders about the occurrence of oil spill into the sea during offloading operation.

What happened?

During the activity of oil transfer from the FPSO to a shuttle tanker, there was a rupture of the fuse-screws of the QRF (Quick Release Flange), part of the IHTP system (Inboard Hose Termination Piece), between the reel and the offloading hose, leaking oil into the sea. The IHTP was originally formed by the QRF + butterfly valve.

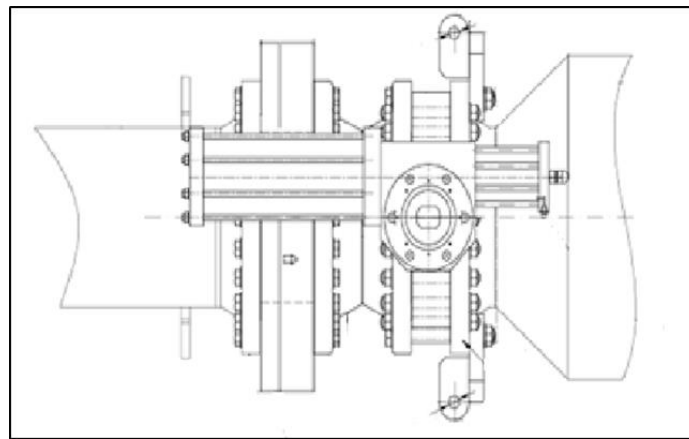


FIGURE 1 - Complete IHTP system before the change (removal of the butterfly valve)

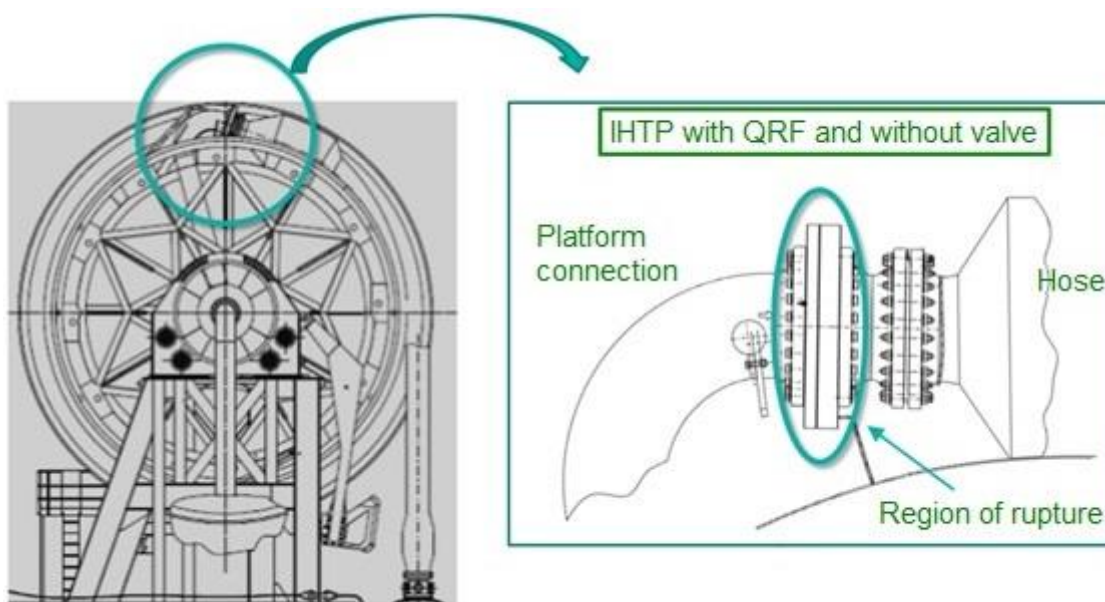


FIGURE 2 - Schematic of the offloading reel and detail of the IHTP System after butterfly valve removal, maintaining the QRF (Quick Release Flange).

Potential Consequences

Failure of the offloading system can lead to accidents with impact on the environment and / or damage to property. Additionally, leaks of hazardous products inside the plant can cause fire scenarios.

Identified Causes

After investigation, the main causes were identified:

Management of Change

- Lack of management of change to evaluate the execution of the offloading hoses pull in procedure with instructions different from the supplier's manual;
- Lack of update of the project HAZOP after change, removing the low pressure lock safeguard (valve) due to the urgency in getting back to operations;
- Failure on the disclosure of the corporate guidelines on IHTPs removal;
- Lack of definition of responsibility in IHTP maintenance.

Management of Documents

- Failure in IHTP supplier documents, such as: naming conflicts for IHTP set (valve and QRF), lack of recommendation for inspection and maintenance and absence of alert regarding equipment maintenance, including the position in which the IHTP should be kept on the reel.

Project

- No requirement for fusible screws surface finishing and interlock for the correct position of the reel for offloading.

Emergency Management

- Failure to predict the emergency scenario of leakage due to spurious QRF failure.

Workforce Training

- Failure in the IHTP system training by the supplier;
- Lack of application of Verification of Conformity with Procedure (VCP) in the Contractor regarding the offloading and pull in procedures.

Procedure

- The facility procedure did not foresee the monitoring (surveillance) at the offloading station on the side of the FPSO, differently from the corporate standard. Additionally, there was a monitoring failure by camera at the control station.

Lessons Learned

In order to avoid similar occurrences, it is recommended:

Management of Change

- Evaluate, review and disseminate the training material of the management of change procedure;
- Perform diagnosis on the management of change process, in order to establish clear and specific instructions to carry out activities safety.

Risk Management

- Evaluate the scenario of rupture of the hose, identifying safeguard in the HAZOP for low pressure, with automatic blocking action.

Management of Documents

- Check for the existence of an inspection / maintenance / test recommendation in supplier documents for equipment similar to IHTP.

Project

- Verify the existence of interlocking and automatic blocking of the offloading system;
- Assess the existing safeguards for automatic blocking, in the Stationary Production Units, for situations of high and low pressure and ensure operation;
- Re-evaluate the use of quick-release hoses on the side of the FPSO and evaluate the need of issuing guidelines for the scope of the recommendation of withdrawing the IHTP systems.

Workforce Training

- Verify the training control system for employees working in the offloading activity;
- Evaluate periodic systematic of Verifying Compliance with Procedures (VCP), retraining, if applicable.

Regulatory Framework

ANP Resolution 43/2007, Operational Safety Management System (SGSO):

- Management Practice 3, item 3.3.5: *“The following types of training must be considered: 3.3.5.3 Specialized Training - Required for the workforce designated to perform specific activities related to this Technical Regulation. This training must be conducted as part of the implementation of the operational safety management system and with periodic recycling”.*
- Management Practice 3, item 3.3.4, the Facility Operator will be responsible for: *“Establish the qualification and training necessary to carry out the activities in the operating procedures”.*
- Management Practice 5, item 5.3.2, the Facility Operator will be responsible for: *“Ensure that all contractors that provide services to the Facility: a) have employees trained in the Safe Work Practices of the Facility”.*
- Management Practice 10, item 10.2.1, the Facility Operator must: *“Meet design requirements and consider rules, industry standards and good engineering practices in project planning, construction, installation and decommissioning”.*
- Management Practice 10, item 10.2.2, the Facility Operator must: *“Identify, during the design, construction, installation and decommissioning phases, the rules, standards and good engineering practices related to Operational Safety matters”.*
- Management Practice 10, item 10.3, the Facility Operator must establish a system so that: *“All aspects that may introduce risks to Operational Safety are properly considered in the Facility project and in its subsequent revisions in the design, construction, installation and decommissioning phases”.*
- Management Practice 12, item 12.2: *“The Facility Operator will be responsible for the identification and qualitative or quantitative analysis of risks, as applicable, with the purpose of recommending actions to control and reduce incidents that compromise operational safety”.*
- Management Practice 15, item 15.2.1, the Facility Operator will be responsible for: *“Prepare, document and control the operational procedures for the operations that are carried out in the Installation, with clear and specific instructions for carrying out the activities safely, taking into account the operational specificities and the complexity of the activities”.*

- Management Practice 16, item 16.3.2, the Facility Operator will establish and implement a procedure to manage changes that may affect Operational Safety. The procedure must consider: *“The hazards and activities overall impact assessment, before implementing changes”*.

Contact

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