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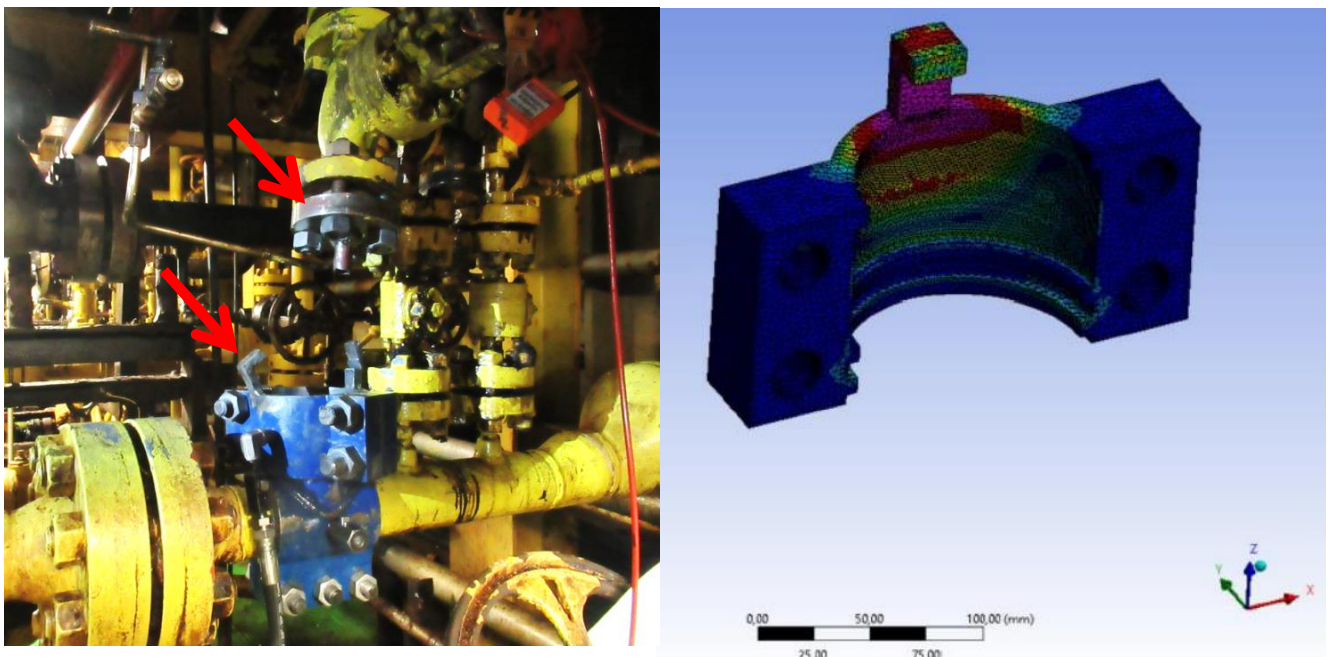
## *Alerta de Segurança 018 - ANP/SSM*

### *Gas-lift line rupture followed by gas leak*

This Operational Safety and Environment Superintendence alerts the oil, gas industry and other stakeholders about gas-lift line loss of containment followed by gas leak.

### *What happened?*

To resume operations of a production well, an engineering solution was proposed: repair a discontinuity in a gas-lift line by installing a clamp. During the installation of this device, manufactured by a specialized company, it was found that it was not properly dimensioned. To complete the device installation, an adjustment and welding of new interlocked clamp was carried out on board. During its commissioning, this new anchorage system did not withstand the efforts during the operational test, performed with gradual pressurization of the 3" line of gas-lift, using natural gas, to monitor possible leaks. After 5 hours of testing, at the level of 120 bar of pressure, the loss of watertightness occurred, with the rupture of the gas-lift line and release of almost 1670 kg of natural gas.



Figures 1 and 2 – Anchorage failure points

### *Potential consequences*

As a potential consequence of the gas released during the event, a fire scenario could have occurred if there were a combination with ignition source in the area. However, it was managed by the platform's emergency response team, which mitigated the potential risks associated with this event.

## Identified causes

- Adjustment performed onboard to allow device installation without Management of Change (MOC);
- Failure to not detail the procedure for carrying out the operational tests;
- Low risk perception since repair type selection, field adjustments and the execution of clamp commissioning;
- Inadequate design for device manufacturing (clamp);
- Failure in contractor management: needed to perform a QA/QC of the clamp before its use and failure to receive the adjusted design;
- Failure to depressurize the GL line.

## Lessons learned

- Do not manufacture or modify parts onboard, including metallic clamps, without qualified professional approval, project, and material quality certificate/traceability.  
Note: the recommendation arising from the investigation of the explosion accident occurred on 02/11/2015 at FPSO Cidade de São Mateus CDSM\_R35 – "Do not *manufacture on board parts, including rackets, that require material quality certificates*".
- Consult MOC procedure for any process and/or equipment change needed onboard;
- Consider the associated risks and control measures before performing functional tests with process fluids – Check the possibility to use non-flammable fluids (e.g.: inert gas | water) and other available engineering solutions.
- Repair selection shall consider reliability and proper risk management.

## Regulatory Framework

According to SGSO technical regulation annexed to ANP Resolution No 43/2007:

Item 12.6.4 - evidence that the risks were systematically evaluated during the phases of design, construction, commissioning and operation, as well as before deactivation.

Item 13.3.2 - ensure that the operating procedures, manuals or any other document relating to the Installation, its systems, structures and equipment are accessible to maintenance personnel (employees or hired), when applicable.

Item 13.3.5 - address any deviation from project specifications through the requirements of change management practice.

Item 16.2 - establish the changes in operations and facilities that must be evaluated and managed so that the risks arising from these changes remain at acceptable levels.

Item 16.3.2 - assess hazards and overall impact on activities before the implementation of modifications.

## Contact

For additional information regarding this safety alert, please contact ANP's Operational Safety and Environment Superintendence at [incidentes@anp.gov.br](mailto:incidentes@anp.gov.br).