

10-01a

**INCIDENT:** Failure of pipework on Gross Overload Protection (GOP) hydraulic system on Bruce East Crane

**TYPE OF INCIDENT:** DAFWC injury

**BUSINESS UNIT:** Bruce/Harding, North Sea SPU

**LOCATION OF INCIDENT:** Bruce Drilling Platform

**COUNTRY:** United Kingdom

**Tr@ction No:** 2010-IR-3428730

**DATE OF INCIDENT:** 11th March, 2010

**BRIEF ACCOUNT OF INCIDENT:**

On the evening of Friday 11th March 2010 a Crane Operator sustained injuries following an energy release on the crane hydraulic panel of the Gross Overload Protection (GOP) system. The Crane Operator had completed his pre-start checks and noticed that the accumulator pressure on the GOP hydraulic system was lower than normal. He opened the GOP cabinet, located at the top of the crane, connected up a gas cylinder located adjacent to the panel and began to charge up the accumulator with what he assumed to be nitrogen. The cylinder contained oxygen gas, which spontaneously combusted with the hydraulic fluid in the GOP system resulting in a catastrophic failure of the GOP charging pipework.

The Crane Operator received burns to his arms and face and there was extensive damage to the GOP cabinet.



**WHAT WENT WRONG?:**

- The Deck Crew did not identify that the gas cylinders selected, removed from the gas bottle store and transported to the worksite (earlier that evening) contained oxygen and not nitrogen.
- The Crane Operator did not check the content of the gas cylinder and used a cylinder containing oxygen for recharging operations.
- The Crane Operator did not plan the recharge operation in advance therefore did not obtain an authorised Work Control Certificated (WCC).

**SUMMARY OF KEY LESSONS LEARNED:**

- Gas Bottle Storage Areas should be compliant with UKCS-SOP-013 (Gas Bottle Management) requirements for 'Storage of Cylinders'; the monitoring protocol in the document should be used as reference.
- Gas cylinders stored in Gas Bottle Storage Areas should be identified correctly with clear, visible labelling and correct colour coding, as per EN 1089-3.
- All personnel involved in transporting, handling and using compressed gas cylinders must be competent to do so and have attended a BOC gas bottle familiarisation training course.
- All personnel involved in recharging operations must understand and comply with the WCC and risk assessment requirements for accumulator and damper recharging operations.
- Before use, final checks should be carried out by the user to ensure cylinder containing correct gas type and pressure is to be used.
- Local procedures for gas cylinder storage, transportation and handling should be reviewed to ensure alignment with UKCS-SOP-013.

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