

Oil production riser gas ignition

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What happened?

During recovery of a 10" oil production riser at an FPSO, gas in the riser bore ignited and a smoke cloud was seen on deck in the vicinity of the shear cutter. The vessel Master was on the bridge and saw the occurrence. Crew were working nearby on the horizontal lay system (HLS) and work platform removing buoyancy modules and inner clamps.

The pre-cut subsea hog bend slit on the riser was below the work platform at this point; hot work was being carried out approx. 1 metre above to remove retaining bands. Three crew were forward working with a forklift and positioning buoyancy modules into open top containers, when a noise was heard on deck.

There were no injuries and no damage to equipment.

What were the causes? / What went wrong?

Our Member's analysis brought the following results:

- **Underlying cause:** A slit was completed to mitigate an identified hazard, however it also introduced a new hazard that resulted in current incident. This hazard was not identified in HAZID or HAZOP & Risk Assessment sessions onshore. New elements were introduced to the procedure without identifying the new risk. When introducing new elements to a procedure, all consequences (if any) must be investigated.
- **Immediate cause:** Ignition of gas in riser bore with smoke exiting at shear cutter end due to spark from hot work being carried out at the HLS platform – opposite end.
- **Root Cause:** Slit in riser outer sheath through into riser bore allowed air ingress and gave a path for any hot sparks to ignite any residual gas in the riser bore.

Actions

Members may wish to refer to:

- Gas Release From Pipeline During Diving Operations
- Near Miss: Gas Release From Subsea Pipeline
- Fire In Incinerator Exhaust Gas Manifold

- HSS001 *Guidelines for management of change*

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