



Safety Alert

From the International Association of Drilling Contractors

ALERT 98-07

Potential for Fire: Air Compressors

WHAT HAPPENED:

A semi-submersible MODU experienced a fire and explosion in its machinery equipment space due to an internal fire in a screw-type air compressor. A static electricity spark from the separator element in the reservoir tank ignited the fire, which burned away the rubber seals on the discharge line. The line separated, discharging an oil/air mixture. The fire then ignited the oil spray that had been discharged into the Machinery Space.

The explosion was probably caused by the oil/air vapor in the machinery space being ignited spontaneously by the fireball discharging from the blown line. Once ignited, the fire caused damage to surrounding areas. The fire was extinguished immediately although it took approximately five (5) hours to secure the area for safety, restore power, and resume drilling operations. There were no injuries.

CORRECTIVE ACTION:

1. Conduct thorough maintenance checks of electrical and mechanical air compressor system on a regular preventative maintenance program.
2. Review the manufacturer's standard maintenance procedures and guidelines regarding air compressors. Pay particular attention to separator element care and installation. Incorporate any manufacturer's safety instructions into maintenance work packs.
3. Inspect all electrical connections, coils, solenoids, all wiring, control panels, and control circuits to ensure sound electrical integrity.
4. Mechanical inspection should include all relief valves to ensure they are certified.
5. Inspect the integrity of all the safety circuits. Test each one, ensuring the compressor shut-down on each circuit.
6. Verify high temperature shutdown function.
7. Inspect oil line hoses and connections for cracks or any deterioration from age/exposure. If oil line connections have rubber joints/flexmaster couplings, ensure that these joints and the clamps are in good condition. Open them for inspection. Fit restraints to all flexmaster couplings.
8. Ensure that manufacturer-recommended oil/lube is being used in the compressor.
9. Inspect equipment in the vicinity to identify potential sources of ignition. Repair or remove any equipment that might cause mechanical abrasion. Make sure electrical equipment is properly installed and in good condition. If any internal combustion engines are in the vicinity, ensure that the exhausts are in good condition.

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.

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