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Process Safety Beacon

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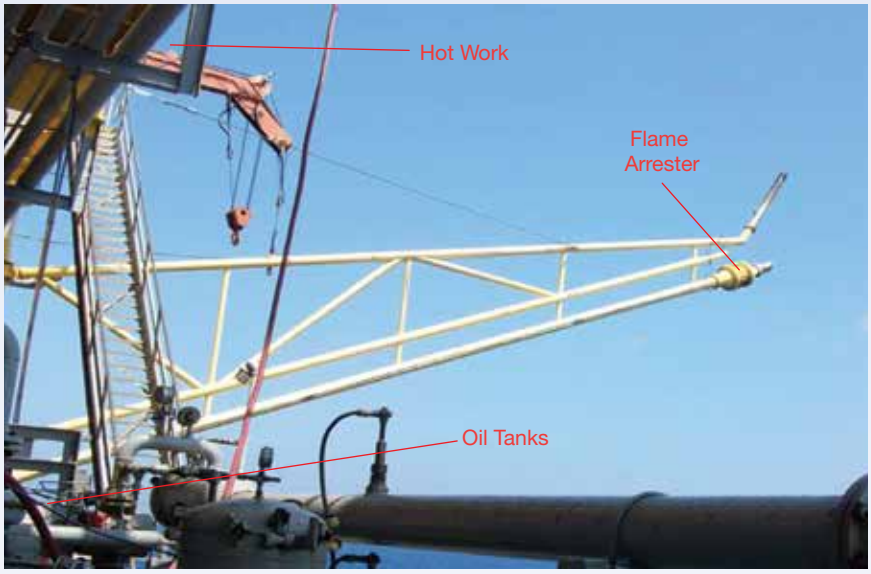
## Plugged Flame Arrester Causes Explosion

In Safety Alert No. 290 (Oct. 2010), the U.S. Dept. of the Interior's Bureau of Ocean Energy Management (BOEM) explains an incident in which an explosion ruptured two oil tanks on an offshore platform. The explosion caused about $500,000 worth of damage and approximately 1,200 gal (4.5 $m^3$) of oil to spill into the sea. Before the incident, maintenance workers had been doing hot work approximately 12 ft (3.7 m) above the oil storage tanks that ruptured.

The BOEM incident investigation found that:

- The tank's flame arrester was corroded and plugged with deposits. Because the flame arrester was not maintained, the tank could not vent through the flame arrester as intended, and instead vented through a sample hatch. During the hot daytime hours, vapors exited the tank through the hatch, and during the cool nighttime hours, air entered through the hatch.
- A sign on the flame arrester indicated that it should be periodically serviced for safe operation. However, it had never been serviced.
- The flame arrester was installed at the end of a flare boom and could not be easily accessed for inspection or maintenance.
- The oil tanks were not blanketed with inert gas, or protected from fire, sparks, or other potential ignition sources during hot work, as required for tanks on offshore oil platforms by the U.S. Code of Federal Regulations 30 CFR 250.113(a).




## What can you do?

- On land or water, flame arresters are important safety devices. Make sure that flame arresters in your plant are inspected and maintained as recommended by your plant engineers and the manufacturer.
- If a flame arrester or other important safety device is located where inspection and maintenance is difficult or impossible, report the problem to management so it can be corrected.
- Many regulations, industry guidelines, and company policies require equipment containing flammable or combustible material to be located a minimum distance from welding/hotwork or from the point of impact where slag, sparks, or other burning materials could fall. If moving the equipment is impractical, the equipment must be protected with flameproof covers, inerted, or shielded with metal or fire-resistant guards or curtains.

***Flame arresters need inspection and maintenance!***