# Safety Alert

**From the International Association of Drilling Contractors**

**ALERT 08 – 43**

## RIG FIRE OCCURS WHILE RIG IS IN SHIPYARD FOR MODIFICATIONS

**WHAT HAPPENED:**

**Rig Status:** A rig was in the shipyard for upgrades, and one project involved extending a 1.5 inch diesel fuel line to the top of the living quarters to supply fuel to the emergency generator. The new fuel line was connected to the fuel line that supplied the crane.

**Fire Event:** A crewman on a nearby rig noticed a small fire start on top boards of a small scaffold erected on the port-forward side of the living quarters. It quickly migrated outboard toward the port side and accelerated at a high rate. The fire dropped to the deck below and immediately engulfed that area and continued to accelerate on the walls of the living quarters. The fire spread to the shell of the emergency generator and to the hose-storage platform. The fire went from a small size to engulfing the side of the living quarters in less than two minutes. When it became apparent that the fire was raging on the port side, the fuel pump was shut off. It is estimated that 50 gallons of diesel spilled. Fortunately a 15 to 20 mph wind was blowing from starboard to port across the rig. The first attack on the fire was within four minutes but the shipyard fire main was too small and did not have sufficient pressure. Effective fire fighting did not take place until about six minutes after the fire began. At this time several explosions from the jack house occurred. The fire was out in fifteen minutes. The local fire department arrived on scene after sixteen minutes.

**Damage Assessment** (No injuries.) Major damage to the outer shell of por-tside quarters—structure, insulation, and wiring was destroyed. Damage to the jacking system: Cover plates warped. New bearings and seals were required. There was damage to the emergency generator room and equipment.

**WHAT CAUSED IT:**

**Causal Factors:**

1. The welder who installed the valve to the fuel line tack, welded it in place, but did not complete the welding of the valve to the fuel line since he intended to readjust it and weld it completely in place the next day.
2. As it was quitting time, the welding crew picked up their tools and left the rig.
3. **They did not notify anyone of the work status**.
4. Their welding machine was left running with welding leads attached.
5. Following their departure, a check was made to ensure the line was installed and the valve on the end was closed. **It was not recognized that the valve fitting was only tack welded.**
6. Later, the crane needed to be refueled so a call was made to have the diesel pump turned on.
7. There were no isolation valves in the fuel line, therefore all the lines were charged resulting in **diesel under pressure sprayed from the tack-welded fitting onto the top deck and down the sides of the quarters onto the main deck.**
8. Since ignition started on the scaffolding about halfway up the wall of the quarters, it is suspected that a smoldering rod or energized welding lead triggered the fire.

**Other Factors:**

- No JSA was written by the shipyard or the rig crew for hot work or refueling.
- No lock-out or tag-out procedure applied to the fuel service line.
- No verification of shipyard fire main capacity.
- There was no hot work permit approved by the OIM for the job being performed by the shipyard crew.
- Welding machines were left running with the live leads in the area of the fire. The welding leads were not properly insulated with wiring exposed and were left connected to an unattended welding machine.

**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.**


**Issued December 2008**

- Unsecured fittings on the fuel line were created by the shipyard workers.
- Failure to communicate the status of the work at the end of the day. No formal handover procedure was used. (same scenario as in Piper Alpha disaster)


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**CORRECTIVE ACTIONS: To address this incident, this company did the following:**

- The crew involved with the task along with their supervisor is to write a JSA prior to each job.
- The OIM is to ensure that all work permits are approved by prior to any work with the rig crew being informed prior to any work on any fuel lines.
- Welding machines are not to be left running while unattended and welding leads are to be in good condition.
- Work site is to be checked prior to leaving the job site to ensure housekeeping and communications of the job status with unfinished work tagged.
- When work is being done on fuel lines, the fuel pumps are to be locked and tagged out.
- Company personnel are to work to improve communications between the rig personnel and shipyard construction personnel.
- As part of this effort rig management is to hold morning meetings so that both rig and shipyard personnel know what each other will be doing.
- Rig supervisors are to ensure proper controls are in use when fuel is bunkered or being transferred. Involve RSTR to verify proper controls are in place.
- Rig management is to hold fire drills even when the rig is in the shipyard.

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**Issued December 2008**