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Safety Alert 23 : Engine Room Fire on MODU in Australian waters

What happened?

An engine room fire occurred recently onboard a MODU in Australian waters. The fire alarm activated when an engine room heat detector was triggered. The control room operator checked the engine room, saw the fire and raised the general alarm with public address announcements. Lube oil spray in the engine room triggered a motion sensor which in turn caused the engine room closed circuit TV system to record the incident from the time the lube oil spray began and before the lube oil ignited.

The muster check was completed, the engine room was shut down, the space was sealed and the CO2 was applied within 10 minutes of the fire being detected. This procedure was in accordance with recently issued company procedures. No attempt was made to initially fight the fire by hand.

The flooding of the engine room with CO2 was effective in extinguishing the fire. Boundary cooling was achieved using a fixed deluge system on the engine room roof and fire hoses from the rig fire water systems. The area was inspected after one hour and the fire was declared to be extinguished. The space was ventilated and the atmosphere tested before the fire team entered to inspect the area. There were no injuries.

This prompt action resulted in no escalation to the fire, therefore damage to the engine room and its equipment was not sufficient to prevent the rig from returning to normal operations.

What went wrong?

The cause of the fire was lube oil spraying from a disconnected lube oil pipe fitting onto a hot exhaust pipe. The engine room has four generators. Three generators were running and one had been shut down by the mechanic to carry out work on some small oil leaks. Each engine was fitted with a lube oil priming pump system that operates separately from the engine systems. This pump was set to operate for five minutes every hour. The mechanic had a lube oil pipe coupling disconnected on the engine when it was time for his meal break. When he was away, the lube oil priming pump cut in. Lube oil from the disconnected coupling sprayed onto the deckhead above an adjacent generator which was running. Lube oil dripped onto the hot exhaust and ignited, starting the fire.

Key Lessons:

- There was no pre-job planning or job safety analysis carried out for this task. If the job had been discussed and planned beforehand between the Mechanic and his supervisor, the Chief Engineer, the Mechanic's lack of knowledge of the lube oil priming system may have become apparent. Supervisors should satisfy themselves that their crews are competent to carry out the tasks given to them.
- There were no signs or instructions provided on the equipment or the engine control panels to indicate that the lube oil priming pump was on a separate circuit from the engine. The

provision of the lube oil priming system had been a recent modification. Sufficient information and instructions should be provided for the safe operation of any equipment. This is a clear example of failing to complete a Management of Change process; the actual installation of the lube oil system was completed satisfactorily, but the associated changes to safety management systems were not completed.

- This incident highlights the importance of emergency response for various scenarios. Practice makes perfect.

Facility operators, and persons in charge of work activities for the relevant stage of the life of the facility, should review their work practices and the handover arrangements to ensure that the facility is safe (will be safe) and without risk to health.

Contact

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and quote Alert 23.

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