FUELS INDUSTRY
Association of South Africa

LEARNING FROM PUMP FIRE INCIDENT

2024

INCIDENT DESCRIPTION

- The shaft failure of a pump resulting in mechanical seal failure and Un-stabilised Light Oil (ULO) to released from the pump mechanical seal and ignited at the recycle pump. Extensive damage resulted due to the incident as the there was scaffolding build over the pump which made it difficult to extinguish the fire. The process alarms was ignored by the process controllers.

PHOTOS

INCIDENT ROOT CAUSE

Underlying cause

- No investigative action was taken by production when the alarm was activated on the console annunciator as flow returned to normal.
- Less than adequate mechanical maintenance and production inspections performed during the days leading to the incident.
- No motor undercurrent protection installed.

Physical cause:

- Insufficient tightening of the cap screws to ensure proper tightness of the taper coupling hub (Keyless type hub) to shaft to prevent slippage.

Root cause

- QCP less than adequate. QCP did not include critical torquing parameters as per coupling hub specification.
- MOC process not followed for changing from OEM to non-OEM hub design

INCIDENT LEARNINGS

- Ensure that the deluge nozzle spray path remains unobstructed during routine maintenance activities e.g., scaffolding erected for maintenance activities.
- Consider/evaluate undercurrent protection on pump systems where required.
- Always take appropriate action when annunciator alarms are activated.
- Ensure daily inspections (check sheets) are adequately performed by maintenance and production.
- Ensure torquing of coupling hub bolts with torque wrench as per supplier specification and that the requirements are incorporated in the QCP.

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Thank You

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