

Step Change Safety Alert Template

STEP CHANGE IN SAFETY



Alert Title

Minor hydrocarbon release leading to ESD during turbine start up

Incident Date

26th October, 2012

Summary

During turbine start-up sequence the load gearbox HVAC was called to initiate and almost simultaneously there was indication of gas heads in alarm. Two gas heads in high-high alarm on the turbines initiates a class zero ESD, which took the platform into full shutdown, blow down and took main power offline.

Incident Consequences

Hydrocarbon Release

Cause of Accident or Incident

Uncontrolled Release of a Flammable Gas or Liquid

Location

Fixed Installation

Activity

Production Operations

Description of What Happened

During the start-up sequence, there was an indication of gas detection against multiple detectors. No gas had been called for by the start-up sequence, however subsequent closer inspection of the diffuser gasket between the turbine exhausts and load gearbox confirmed deterioration & damage.

This had provided a leak path for un-combusted purge gas to migrate into the load gearbox compartment from the turbine exhaust whilst the diesel purge sequence was executing. This in turn allowed for migration of the purge gas into the HVAC extract duct where it was vented to atmosphere and towards the nearby gas detectors. The release itself was very minor.

Specific Equipment

Turbines

Lessons Learnt

- Existing gasket specification & inspection regime may not be robust enough to prevent re-occurrence.
- Emergency systems functioned exactly per design in the event of gas detection in this area.

Task Description:

Routine start-up of turbine following completion of pre-start checks

Recommendations

- Apply specialist sealant to the gasket to prevent deterioration in the interim, pending overhaul of machine during Q1 2013. Overhaul specifications include installation of gaskets with improved resilience.
- Instruction in place so that when turbines are offline & prior to a restart, the status of the diffuser gasket & surrounding area will be checked and remedied where appropriate.
- Investigate potential alteration of timings of the purge gas sequence for gas fired starts to shorten the sequence and reduce the amount of un-burned purge gas passed into the exhaust chamber.

Contact Details:

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