Estates and Facilities Alert

Action

Ref: EFA/2011/003 Issued: 17 October 2011
Gateway Reference: 16777

Device

VIE (Vacuum insulated evaporator) Main storage vessel for bulk medical oxygen supply.

Problem

- Uncontrolled release of liquid oxygen from a vacuum insulated evaporator (VIE).
- Apart from the risk to patients the release of oxygen in significant quantities presents a significantly increased potential for the ignition of flammable materials if ignition sources are present.
- This might apply to personal clothing of those working near the oxygen release.

Action

- Ensure policies and procedures are in place
- Ensure resilience of the Medical Gas Pipeline System .

Action by

- Managers and other responsible staff.
- Managers and staff responsible for the procurement, supply, maintenance and asset management of the VIE and MGPS

Contact

The healthcare providers Authorised Person for (MGPS)

Problem

1. There has been an uncontrolled release of liquid oxygen from a vacuum insulated evaporator (VIE) installed at an acute hospital in Wales. This resulted in the loss of approximately 7000 litres of liquid oxygen over a 45 minute period. The discharge was observed on CCTV cameras. If the CCTV had not been present the discharge may have gone unnoticed until the low level alarm activated for the system.

2. The hospital involved with this incident implemented their emergency procedures, including calling the fire and rescue service to attend the oxygen release.

3. Due to the resilience of the oxygen system, the Healthcare provider did not experience any loss of supply to the hospital departments.

4. The hospital undertook an investigation into the leak together with BOC who own and operate the VIE on this site. The investigation concluded that during filling procedure of the VIE on this occasion, moisture ingress had accumulated inside the intake valve between the inner face of the valve seating and the bottom of the valve spindle. As a result, when the liquid oxygen was introduced into the valve the trapped moisture was frozen.

5. On completion of the liquid oxygen filling procedure, the valve was closed but due to the ice formation the valve disc did not seat correctly on the inner seating face of the valve. As the valve warmed the ice melted which allowed the liquid oxygen to back feed from the VIE to atmosphere.

Action

6. This EFA should be brought to the attention of the Designated Person (MGPS) the Authorised Person (MGPS), competent persons (MGPS) and the Estates /Facilities Manager. In particular the Healthcare body should ensure that in the event of a similar occurrence happening on their site that they are confident that they have the following policy and procedures in place to ensure that:-

    - the resilience of the supply meets the requirements of *Health Technical Memorandum 02-01; Medical gas pipeline systems* (HTM 02-01) i.e. **ALL** medical gas systems should comprise of three sources of supply identified as ‘primary’ ‘secondary’ and ‘reserve’.

    - the medical gas policy is revised to include procedures to cover emergency incidents such as an uncontrolled release from a VIE.

    - all Authorised Persons (MGPS) and competent persons have clearly labelled schematic diagrams of VIE System

    - VIE installations have valves clearly labelled

7. Emergency procedures should be regularly tested to ensure they are appropriate for the purpose and contain updated information regarding contact details, emergency telephone numbers and relevant supporting information etc.

Suggested Onward Distribution

- Risk Management,
- Estates Directors,
- Facilities Directors,
- Primary Care organisations,
- Fire Advisors,
- Office Managers

Contacts

If you require further information please contact John Tidball on 029 2031 5517 or e-mail: john.tidball@wales.nhs.uk. Your local BOC office may also be able to advise.

Additional information for England

The above sections of this Alert were compiled by NHS Wales Shared Service Partnership - Facilities Services and distributed nationally without modification.

Action required by this alert should be **underway by: 21st November 2011**

Action required by this alert should be **completed by: 23rd January 2012**

Enquires should quote reference number EFA/2011/003 and be addressed to:

Defects & Failures
Department of Health
Estates & Facilities Division 3N09
Quarry House,
Quarry Hill,
Leeds LS2 7UE
Mb-defects&failures@dh.gsi.gov.uk

HOW TO REPORT DEFECTS & FAILURES

Defects and failures relating to non-medical equipment, plant and buildings should be reported to the Department as soon as possible. Advice on what needs to be report can be found in DH (2008) 01. Defect and failure reporting is an on-line only reporting facility, available on the NHS Information Centre website at www.ic.nhs.uk

This Alert can be found on the following websites
http://www.dh.gov.uk and https://www.cas.dh.gov.uk