gas safety UK Client Update (April 2001)

Please circulate to all colleagues who need to be advised or made aware

FOCUS ON FIXED INSTALLATIONS (Manifold Systems)

In accordance with:
LEGISLATION: HASAWA (1974); the Pressure Systems Safety Regulations (2000); the Management of Health & Safety at Work Regulations (1992); the Provision & Use of Work Equipment Regulations (1992); the Workplace (Health, Safety & Welfare) Regulations (1992) and the Health & Safety (Safety signs & Signals) Regulations (1996).

Ask yourself the following questions:
1. Does your site have any installed manifold systems supplying gas from either cylinders or liquid cylinders via fixed pipework?
2. If so, has this been installed in accordance with requirements set out in:-
GUIDANCE:
(a) BCGA CP4 (Industrial Gas Cylinder Manifolds & Distribution Pipework / Pipelines (Excluding Acetylene). NOTE; this covers the following gases:
OXYGEN, ARGON, NITROGEN, HELIUM, CARBON DIOXIDE, HYDROGEN, METHANE & MIXTURES OF THESE GASES.
(See the suggested weekly check procedure below).
(b) BCGA CP5 (The Design & Construction of Manifolds Using Acetylene Gas to a Maximum Working Pressure of 25 bar (362 lbf/in2)).
(c) BCGA CP6 (The Safe Distribution of Acetylene in the Pressure Range 0 - 1.5 bar (0 - 22 lbf/in2)).
(d) BCGA CP 8 (The Safe Storage of Hydrogen in Seamless Cylinders Etc.).

3. Does the system conform to the Pressure Systems Safety Regulations 2000?

4. Does the system undergo periodic inspection and maintenance in accordance with a Written Scheme of Examination? (See BCGA CP 23 for guidance; The Application of the Pressure Systems & Transportable Gas Containers Regulations 1989 to Industrial & Medical Pressure Systems Installed at Customer Premises: 1992). *(See the suggested annual checks below).*

Suggested Weekly Check

Each week check that:

* the equipment looks to be in good order, is being used correctly and that all necessary equipment is fitted
* the manifold framework and chains are in good condition
* the pigtails are in good condition
* valves shut off and reopen correctly

* the regulators identified for the gas(es) and pressure(s)
* the system is operating normally and no defects have been reported
* the manifold house or area is clean and is not being used as a general store

Suggested Annual Check:

At least once a year check that:

* any repairs or modifications have been carried out in accordance with the appropriate Code
* any changes near the pipework do not affect operation or safety
* the pipework is properly marked in yellow ochre and carries the name of the gas
* the system is free from leaks by testing at the designated operating pressure
* the filters are in good condition and are not blocked.

E.G. Maintenance in Accordance with the Written Scheme (According to BCGA CP 23):

* Connections hose(s) (non-metallic lined) - replace every 5 years & record replacement.

* Copper or copper alloy pigtails - external examination every year. Anneal if work-hardened or replace; fit new seals and make records up to date.

* Stainless hoses - replace every 5 years and record.

* Process relief valves - every 6 years; examine, replace & record.

* Flame arrestors - replace every 5 years with a new unit & record.

* Pressure regulators - replace every 5 years with a new unit & record replacement.

* Distribution system pipework - annual examination and pressure test.

TRAINING

PERSONNEL OPERATING MANIFOLDS MUST BE PROPERLY TRAINED.

Have all personnel been fully trained in the safe & correct operation of the manifold system(s) and what to do in the event of an emergency?
Has all such training been entered in the appropriate training log?

GENERAL MANIFOLD SAFETY

Is the manifold sited outdoors or in a manifold room which:

(a) has suitable access?
(b) is well ventilated?
(c) has appropriate warning notices?
(d) if heated, is preferably heated by steam or hot water?
(e) is equipped with safe & suitable electrical equipment?

Are there posted operating procedures for the system?
Are all valves suitably labelled?
Are isolation valves fitted at strategic points & readily accessible should an emergency occur?
Is the pipework adequately supported (see section 6.2 & 6.3 of CP 4).
Are those parts of the system(s) which are subject to periodic replacement identified for such replacements by means of tags or similar?
Is the manifold area being used as a cylinder store? If yes, the manifold area should only contain sufficient full cylinders to replenish one bank.
Are there any ‘empty’ cylinders in the manifold house? If so, empty cylinders should always be removed to the appropriate area of the cylinder store following changeover.
Are gases of different hazard types appropriately segregated? (ref. GN2; CP8; CP18)

Is there suitable and readily available fire fighting equipment for the manifold area?
Is the manifold area clean & free from combustible material (inc. oils, greases), sources of heat & ignition etc.?
Is the system adequately earthed (as appropriate to the gas) and separated from adjacent electrical systems?
Are the correct tools for cylinder changeovers and a safe means for leak detection provided?
Is the manifold area located away from;

* doors, windows, drains, ducts, cellars & other substances in store etc.?

If you need any help or advice on this month's topic please feel free to give me a shout.

Best regards, David Bayliss.
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Footnote:

How's this for a crushing blow? Maybe it's not such a good idea to shovel cylinders up using a JCB!