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SAFETY ASSESSMENT FEDERATION

Guidance

In-service Inspection Procedures

Self-Contained Breathing Apparatus

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1. Situation

It is not uncommon for sites containing hazardous chemicals, to have their own emergency response teams based on site.

The emergency response teams generally have some form of self-contained breathing apparatus sets along with other relevant PPE.

Taking into account the Pressure Systems Safety Regulations 2000 (PSSR), these sets do form a pressure system as they contain a relevant fluid, and meet the requirements of the following description:

> *the pipework with its protective devices to which a transportable pressure receptacle is, or is intended to be, connected;*

There can be confusion as to whether the breathing apparatus sets require a Written Scheme of Examination (WSE), especially as there are two slightly conflicting statements with the PSSR ACoP Paragraph 113 (exerts below).

> *The following types of pressurised systems are likely to require a written scheme of examination:*
>
> *(h) the components of self-contained breathing apparatus sets (excluding the transportable pressure receptacle);*
>
> *The following pressurised systems are unlikely to require a written scheme of examination:*
>
> *(c) portable oxy-fuel gas welding sets;*

It could be argued that both systems are similar in nature as both have gas bottles, regulators, and flexible hoses. The only real difference being that one is air for breathing and the other a fuel source for heat.

It is also worth noting that in Schedule 1 Part 1 Pressure systems excepted from all regulations there is this exception:

(7) Any plant or equipment required by regulation 6(3)(b) of the Diving at Work Regulations 1997 and used or intended to be used during a diving project to which those Regulations apply.

2. Guidance

With the statements shown above it is often asked as to whether the breathing apparatus sets require a Written Scheme of Examination (WSE) as there are arguments for and against.

For inclusion within a WSE, consideration should be given to Regulation 8 Part 1 for what to include taking into account that a defect will give rise to danger.

> *(a) all protective devices;*
>
> *(b) every pressure vessel and every pipeline in which (in either case) a defect may give rise to danger; and*
>
> *(c) those parts of the pipework in which a defect may give rise to danger,*

Danger being:

> *"danger" in relation to a pressure system means reasonably foreseeable danger to persons from system failure, but (except in the case of steam) it does not mean danger from the hazardous characteristics of the relevant fluid other than from its pressure;*

With system failure being defined as:

> *system failure" means the unintentional release of stored energy (other than from a pressure relief system) from a pressure system;*

Using the definitions quoted above it would seem appropriate that breathing apparatus sets would probably require a WSE.

Consideration firstly should be given as to whether the air/gas bottle is classed as a transportable pressure receptacle, or not. If it is, then it is exempt from the regulations, if not it then falls under the PSSR and may require inclusion within a Written Scheme of Examination.

If it is deemed that system failure (i.e. regulator and hose only if bottle not included) will not give rise to danger to persons then a reasonable approach is not to have a written scheme and rely solely on the maintenance of the items to make sure they remain safe, as by their nature and use the items have regular rigorous maintenance/examinations with parts being replaced on a regular basis.

The owner/user needs to consider if the production of a WSE and subsequent examination in accordance with the WSE by a competent person will have any benefit above what is being undertaken in the maintenance.

If a WSE is to be produced it could consist of a visual examination of the component parts supplemented with a review of the documentation/certification supplied by a third-party maintenance contractor.

Interestingly “specific requirements” as stated in HSG53 Respiratory protective equipment at work, A practical guide are that:

> *29 In addition, you must ensure that reusable RPE undergoes thorough examination and, where appropriate, testing at suitable intervals. This should be monthly, or every three months if used less frequently. This will not only make sure the RPE protects the wearer but will also extend the life of the equipment and so maximise your investment.*

Maintenance is defined as:

> *90 Maintenance is a requirement for all RPE, except for disposable (single use) RPE, and should be carried out by properly trained personnel. Thorough maintenance, examination and tests should be carried out at least once a month. However, if the RPE is used only occasionally, an examination and test should be carried out before use and, in any event, the interval should not exceed three months. Emergency escape-type RPE should be examined and tested in accordance with the manufacturer’s instructions.*

Further reading:

HSG53 (Fourth edition, published 2013) Respiratory protective equipment at work, A practical guide.

BS EN 137:2006 Respiratory protective devices. Self-contained open-circuit compressed air breathing apparatus with full face mask. Requirements, testing, marking.

BS EN 12021 Respiratory protective devices. Compressed air for breathing apparatus