



WORK PERMIT SYSTEMS

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EUROPEAN INDUSTRIAL GASES ASSOCIATION AISBL



AVENUE DE L'ASTRONOMIE 30 • B – 1210 BRUSSELS

Tel: +32 2 217 70 98

E-mail: info@eiga.eu • Internet: www.eiga.eu

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EUROPEAN INDUSTRIAL GASES ASSOCIATION AISBL
Avenue de l'Astronomie 30 B 1210 Brussels Tel +32 2 217 70 98
E-mail: info@eiga.eu Internet: www.eiga.eu

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Amendments to 40/17

Section	Change
all	Reviewed, revalidated, updated where necessary
1	New reference added
2	New reference added
4	New reference added
5	New reference added

1 Introduction

Reviews of accidents both inside and outside of the industrial gases industry often reveal that at least one of the following causes have contributed to the accident:

- Hazards associated with a task were not adequately identified; and/or
- Appropriate prevention and protection measures were not properly identified and/or implemented.

There are many human factors that may increase the likelihood of these outcomes – this is not discussed in this publication but see EIGA's Human Factor Safety Information publications for more information:

Info HF 02	<i>Individual - "Training and Competence [1]"¹</i>
Info HF 04	<i>Task – "Design and Effectiveness of Procedures [2]"</i>
Info HF 05	<i>Task – "Maintenance Error [3]"</i>
Info HF 07	<i>Organisation - "Communications on Safety [4]"</i>
Info HF 08	<i>Task - "Alarm Handling" [5]"</i>
Info HF 09	<i>Task - "Fatigue from Working Patterns - Shiftwork and Overtime [6]"</i>
Info HF 10	<i>Organisation - "Managing Organisational Change [7]"</i>
Info HF 11	<i>Organisation - "Safety Culture [8]"</i>
Info HF 12	<i>Task - "Human Factors in Design [9]"</i>
Info HF 13	<i>Organisation - "Human Reliability [10]"</i>
Info HF 14	<i>Organisation - "Human Factors in Hydrogen Applications" [11]"</i>

The use of a work permit system to manage potentially hazardous work tasks (See 3.2.7) should ensure that risk is reduced to an acceptable level. This publication is intended to outline the key elements of a good work permit system.

A fundamental basis of European workplace and worker safety legislation is "risk assessment". (Health and Safety Framework Directive - Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work [12]).

For normal operating tasks and for foreseeable inspection and maintenance tasks, the employer has a general duty (which in many countries can also be a legal obligation) to provide written operating instructions and to document that sufficient measures are in place so that the risk associated with those foreseeable tasks is acceptable.

In addition to written instructions for normal operations and normal inspection and maintenance tasks, every good safety management system should also include a written work permit procedure to control potentially hazardous tasks.

¹ References are shown by bracketed numbers and are listed in order of appearance in the reference section

This publication describes the key elements of a robust work process (management system) to formally manage such tasks under a “work permit”.

It is important to understand that the completed work permit form does not in itself make a task safe; for a work permit system to deliver a safe work environment, everyone involved needs to understand how to complete their roles, execute their responsibilities properly, and be trained accordingly. Reference EIGA Doc 924 *Life Saving Rules* [13].

2 Scope and purpose

2.1 Scope

This publication is intended to identify key ingredients and best practices for a work permit system for work performed at an EIGA member company operating site.

The work permit system described in this publication is not intended to meet all requirements of other work situations such as member company employees performing work on customer sites or on construction sites. For a robust work permit system there should be at least two individuals involved together at the work site, the permit issuer and permit receiver. It is EIGA's view that lone workers should not be allowed to write a work permit for themselves. See EIGA Doc 249 *Lone Working* [14].

This publication also only concerns itself with the general work permit. Additional separate procedures and extra authorisations would normally be required for specific high-risk tasks such as; confined space entry, hot work, high voltage electrical work or tasks utilising notifiable radiation sources.

See EIGA Doc 44 *Hazards of Inert Gases and Oxygen Depletion* [15]

2.2 Purpose

This publication provides a general outline of the key elements of a good robust work permit process. It is intended to provide guidance to new/smaller member companies developing their own work permit systems and to provide elements for consideration when reviewing more established work permit processes.

Appendix A includes a list of the elements which EIGA would expect to see included on a company work permit form.

This publication is only a guideline for creating and implementing a work permit process, it is not intended to be the work permit procedure itself.

3 Terminology and definitions

3.1 Publications terminology

3.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should

Indicates that a procedure is recommended.

3.1.3 May and need not

Indicates that the procedure is optional.

3.1.4 Will

Used only to indicate the future, not a degree of requirement.

3.1.5 Can

Indicates a possibility or ability.

3.2 Technical definitions

Some wording used in this publication is commonly used with different meanings (e.g. risk, permit, control, routine). To be clear within this publication, the intended meaning of the terminology for this document is defined below.

3.2.1 Control

To actively manage the risk. It does not mean to look and check.

3.2.2 Energy isolation (LOTO)

Set of measures which ensure that workers are protected from the consequences of energy release from equipment, machines or installations (whether electrical, chemical, hydraulic, mechanical, thermal, pressure etc.).

3.2.3 Harm

Any injury to people or damage to property or negative impact on the environment.

Harm is the result of a potential hazard actually being realised.

3.2.4 Hazard

Any aspect of the task or the surroundings which has the potential to harm the person performing the task and/or others nearby and/or result in damage to equipment, property or the environment.

3.2.5 Issuer

Person who is authorised to act as the responsible “owner...in control of” the plant area where work is to take place. They are the person who will give permission for work to proceed once appropriate risk prevention measures (safeguards) are agreed and implemented, by “issuing” the work permit.

3.2.6 Normal work

Tasks which are repeated without change in procedure. Normal work presumes that the task is performed in a controlled or unchanging low risk environment by competent workers.

Normal work tasks are discrete and therefore do not require special co-ordination of activities between different groups of workers such as separation in time or space, or additional precautions such as barriers, in order that the work is performed safely.

Normal work tasks shall be managed by means of written instructions and risk assessment in accordance with national legislation and company procedures and do not usually require work permit.

3.2.7 Potentially hazardous work

In this publication, potentially hazardous work is used as an umbrella term for work where there is a (company) mandated requirement or benefit to control the safety of the task under a permit to work, whether or not a written procedure exists. This does not include normal work (see 3.2.6).

Potentially hazardous work could typically include:

- hot work such as welding,
- working at height e.g. erecting/dismantling scaffolding,
- working on live (energised) systems; including breaking into process equipment, line opening, or high voltage electrical switchgear inspections,
- confined space entries such as; internal inspection or repair of a pressure vessel,
- excavation (digging work) and work inside excavated spaces such as trenches,
- override (inhibit) of protective systems; such as fire detection or protection systems,
- hot work in ATEX zoned areas,
- work near or over water where there is a potential for drowning,
- work involving mobile cranes/lifting,
- maintenance involving hazardous materials (e.g. corrosive or toxic substances).

3.2.8 Receiver

Person who accepts the work permit and its conditions in order to perform the work safely themselves, or with a team for which they are responsible.

3.2.9 Risk

Combination of the probability of the initial event and the severity of the consequence(s) being considered.

3.2.10 Risk prevention and mitigation measures (safeguards)

Measures taken (prescribed) to reduce the probability of any hazardous event occurring and/or to minimise any consequent harm.

NOTE Safeguards can be technical (hardware) or organisational (rules, procedures).

Examples of organisational controls might include; control of ignition sources, atmospheric monitoring, proper energy isolation, lock-out tag-out, stand-by man with fire extinguisher (fire-watch), barricading a work area, provision of safe access for work at height such as scaffolding, and work planning.

3.2.11 Safeguards

See risk prevention measures.

3.2.12 Site manager

Person who has overall duty and authority to ensure that the company work permit system is implemented and effective at the site.

3.2.13 Task performers

Group of workers under the control of the permit receiver who work with them to complete the work authorised under this work permit.

3.2.14 Task risk assessment

An assessment of the hazards of each step of a task, including the required safeguards. This is the responsibility of the employer who is "expert" in that task. A task assessment will usually be limited to the task itself and therefore would not identify and address hazards from the surroundings, but should include any recovery from emergency situations associated with the task, for example exiting from an excavation.

Sometimes very generic task risk assessments are provided by contracting companies, which list all possible external hazards but are not specific to a particular work environment.

Where external companies are contracted because they are the experts in a specific task, then the task risk assessment should be provided by the contractor and used as an input to the work permit process.

3.2.15 Work permit control centre

Single nominated location where copies of open permits are available, in order that plant operation teams have a clear overview of work in progress.

3.2.16 Work permit or work permit form

Document used to identify the work being authorised, the potential hazards and required safeguards. It shall be reviewed by the work permit issuer and work permit receiver before being signed and issued.

The company should develop a form which adequately structures and documents the identification of hazards, potential consequences and precautions required so that the work can be performed safely.

Conceptually the form may be paper or electronic, but it is fundamental that a legally-recognised signature is added by the permit issuer and permit receiver.

3.2.17 Worker

Company employees as well as contractors. It includes supervisors and all levels of management. See also EIGA Doc 118 *Safe Management of Contractors* [16].