

## Introduction

Industrial Radiography is a justified practice of ionising radiation because it brings substantial benefits to society with regard to the assessment of the integrity of industrial installations, e.g. vessels or pipelines that are pressurised or contain hazardous chemicals.

Nevertheless industrial radiography, and especially site radiography is regarded to be one of the potentially most dangerous applications of ionising radiation, if it is not carried out according to high radiation safety standards.

The operating organisation bears the prime responsibility for the safety of industrial radiography. Management should exercise leadership in developing and maintaining a safety culture throughout the entire organisation.

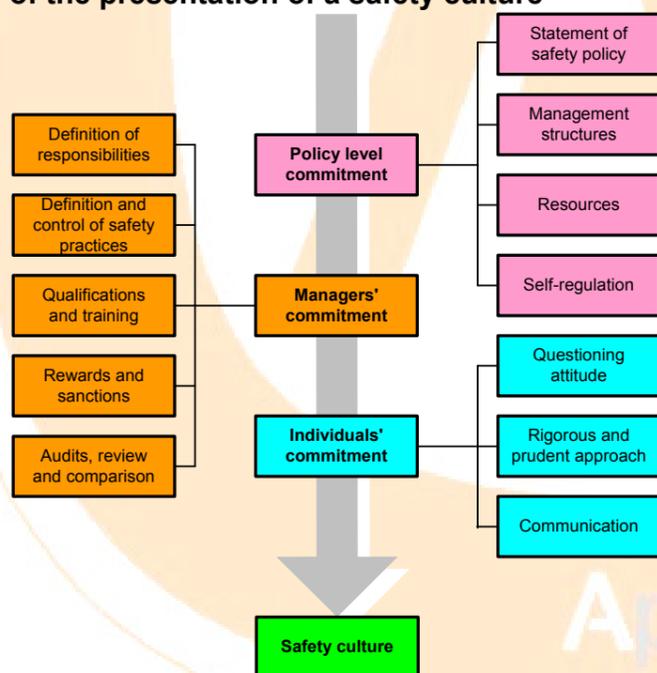
## Definition of safety culture<sup>[1],[2]</sup>

The safety culture of an organisation is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine commitment to, and the style and proficiency of, an organisation's health and safety management.

Organisations with a positive safety culture are characterised by communications founded on mutual trust, by shared perceptions of the importance of safety and by the efficacy of preventive measures.

Safety culture has two general components. The first is the necessary framework within an organisation and is the responsibility of the management hierarchy. The second is the behaviour and attitude of staff at all levels in responding to and benefiting from the framework.

## Illustration of the presentation of a safety culture<sup>[2]</sup>



## Stages of safety culture improvement<sup>[3]</sup>

### 1. dependent culture

Emphasis is on management and supervisory control. Safety performance is dependent on the level of management commitment to enforcing rules and procedures.

### 2. independent culture

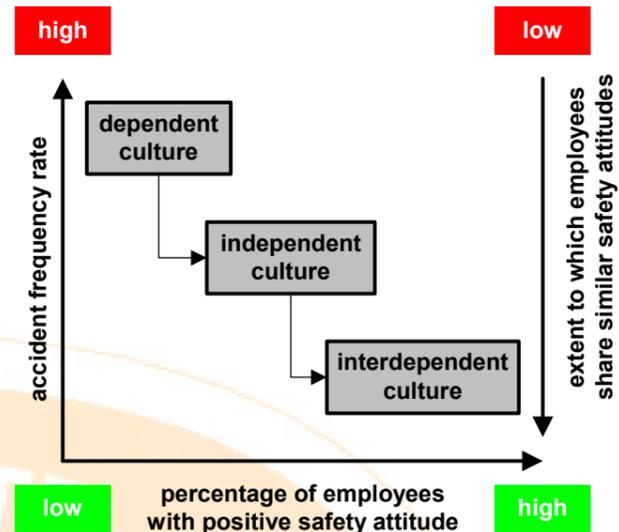
Focus is on personal commitment to and responsibility for safety. There are still safety rules and procedures, but employees look after their own safety and make active choices to keep themselves safe.

### 3. interdependent culture

Workers have a sense of responsibility beyond their own work and by caring for the safety of others. Employees have a common belief in the importance of safety.

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## Development of the safety culture of RTD Netherlands

The safety culture of RTD Netherlands is developed under the influence of its corporate culture, referred to by its employees as the "blue blood".

High safety standards set by bigger customers have also influenced the safety culture of RTD Netherlands.

RTD Netherlands is developing from a strong hierarchically lead organisation with a central HSE department into an organisation in which responsibility and decision-making are devolved more and more to the frontline workers.

Project managers will be responsible for all the issues that relate to the work that is performed under their coordination and supervision, including radiation safety issues.

## Safety Policy of RTD

RTD group management has drawn up HSE criteria that not only state that rules and regulations shall be obeyed, but also that there shall be

- clear information on safety standards
- descriptions of tasks, authorisations, and responsibilities
- adequate feedback to prevent, analyse and resolve inadequacies
- improvement of safety performance by improving processes
- assurance that only adequate equipment and accessories are used
- no conflict between economic objectives and safety performance
- measures to promote and control the safety performance

All radiographers have to pass the exam of a training course on radiation protection of forty hours before they are allowed to perform industrial radiography. The course is recognised by the Dutch authorities.

Radiographer are (and were) always encouraged to report unsafe situations or working methods, including "near misses".

## Recent, and future developments

The department radiation protection services with its own safety sub-culture will influence the safety culture of RTD Netherlands.

Independent field inspections of industrial radiography operations will be performed by this department with more emphasis on exchange of information, learning and helping, than only checking if the rules, and regulations are obeyed.

There is an initiative for tailor made refresher courses on radiation safety for radiographers.

Regular meetings between regional and central radiation protection officers are held to discuss radiation safety issues, and to improve processes and safety performance.

#### References:

- [1] M.D. Cooper, Towards a model of safety culture, Safety Science 36 (2000) 111-136  
 [2] IAEA Safety Series No. 75-INSAG-4, Safety Culture, Vienna 1991  
 [3] M. Fleming, and R Lardner, Safety Culture – the way forward, The Chemical Engineer, 11 March 1999  
 [4] R. van Sonsbeek, Developing a Safety Culture in Industrial Radiography, ECNDT 2006, Berlin, 28 September 2006

