B2 **Experience of inspectors looking at safety culture**

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Abstract

Safety culture is a complex issue which derives from various sources and is in a constant state of evolvement within an organization. The incentive to promote safety culture arises from diverse viewpoints. What is the role of an authority in this development process?

Finnish Safety and Chemicals Agency (Tukes) is a national authority whose duties are laid down in national and EU legislation. The mission of Tukes is to supervise and promote technical safety and conformity in order to generate a safe, reliable and ecologically sustainable society.

The safety of major hazard industry is regulated by European Commission's directive (96/82/EC, the so called Seveso II directive) on the control of major-accident hazards involving dangerous substances. Tukes is the national competent authority to supervise the industrial handling and storage of chemicals and gases.

Tukes, as a safety authority, can be understood to have several roles in promoting safety and safety culture. Tukes distinguishes three main roles; authority role, expert role and public role, through which different measures to promote safety are applied. E.g. public role relies strongly in different means of communication. Expert role is applied typically through guidance and counselling. The role of an authority is distinguished with the most direct connection with the companies. In supervision of industrial handling of chemicals and gases the direct contact with companies depends on the amount and classification of chemicals within the company, and the inspection frequency varies from once per year to inspections every fifth year.

The assessment of chemical plants focuses in the following topics:

1. Awareness of regulatory requirements
2. Management and personnel commitment
3. Risk assessment and decision making
4. Technical implementation and functionality
5. Instructions for and assessment of operations
6. Competence and training
7. Managing emergencies and deviations.

The safety level of the inspected company has a strong effect on the measures how safety culture is promoted in the organizations. In the companies with a good level of safety the emphasis is mostly on guidance towards better results. However, in the companies where safety issues do not yet have such a strong role more direct measures are needed. These can include instructions but also more direct requirements.

In the future the new technologies, e.g. energy production, create one of the biggest challenges in process industry as well as finding new and more efficient ways to communicate good practices. Also the importance to promote proactive safety culture and to communicate new safety perspectives and developments are considered to be significant.

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Experience of inspectors looking at safety culture

Safera – Symposium 10.-11. March 2014
Industrial Safety – Challenges, value and needs

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tukes

Contents

- Tukes
- Industrial handling of chemicals and gases
- Inspectors experiences
- Future challenges

Finnish Safety and Chemicals Agency - Tukes

- National authority
- Duties are laid down in national and EU legislation

- Tukes supervises and promotes technical safety and conformity, together with consumer and chemicals safety in Finland
- Mission: Supervises products, services and production systems and enforces the relevant legislation

Key facts

- Roles to achieve mission:
  - Supervision
  - Communication
  - R & D

- Fields of operation
  - Products
  - Installations and services
  - Industrial plants

- Main offices
  - Helsinki, Tampere, Rovaniemi
- Number of personnel 215

Supervision areas

- **Industrial handling of chemicals and gases**
- Electricity and lifts
- Chemicals, biocides and plant protection products
- Mining, ore prospecting and gold panning
- Consumer safety
- Pressure equipment
- Explosives, fireworks
- Measuring instruments, articles of precious metals
- Rescue service equipment
- Construction products

Supervision of Chemical Plants in Finland

- Seveso II directive - large scale use of chemicals, national legislation
- Chemical plant operations are divided into two groups
  - Large scale → Tukes
  - Small scale → Local Rescue Authorities
- Approximately 700 chemicals and explosives establishments under supervision of Tukes

Amount and classification of chemicals

Large-scale handling and storage (Tukes)

Small-scale handling and storage (Local Rescue Authorities)

Scale of operation	Upper-tier establishments	Lower-tier establishments	Nationally regulated establishments
	- Operations require Chemical Safety Report → licence	- Operations require a Major Accident Prevention Policy → licence	- Operations subjected to National Licence
Inspection frequency	1 year	3 years	5 years

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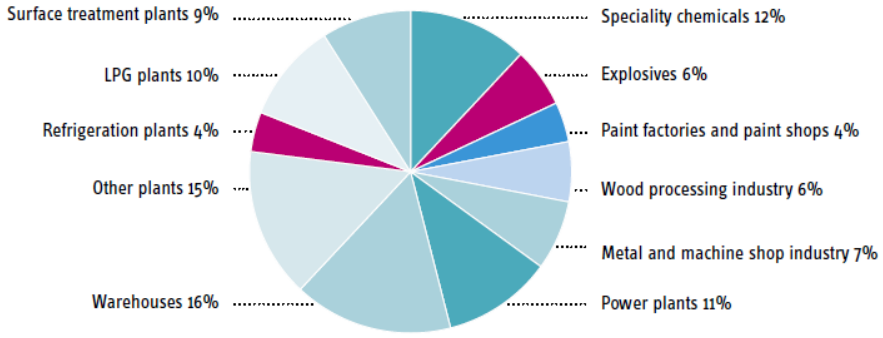
Plants under Tukes's supervision according to industrial classification



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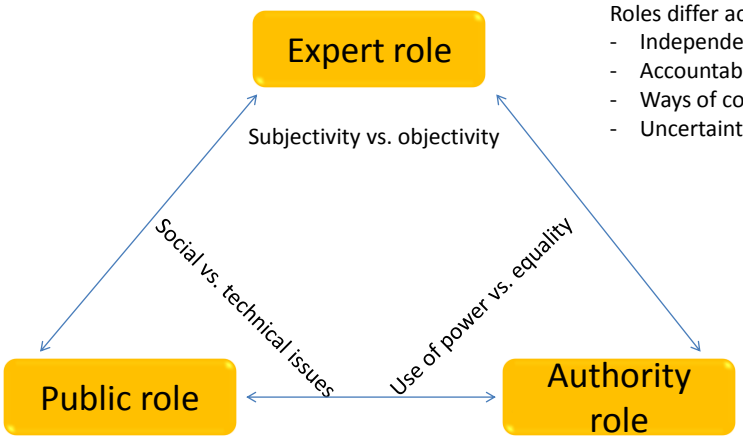
Safety culture

- Organizations tend to develop a systemic understanding to perceive essential functions e.g. safety
- Safety culture defines the organization's shared perception of (mostly subconscious) the logic of its safety functions
- Safety culture is the organization's potential to function safely
- The better the safety culture is, the more potential the organization has to overcome challenges and even aggressive dangers

Safety authority's roles in promoting safety culture

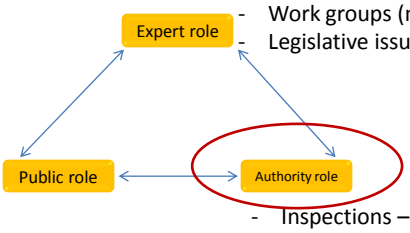


Roles differ according to e.g.:
- Independence
- Accountability
- Ways of communication
- Uncertainty

Modified from Reiman & Oedewald 2014

Inspectors roles in improving safety culture

- Guidance, counselling (boundaries difficult to define)
- Education
- **Sharing of good practices**
- Work groups (national, EU-level)
- Legislative issues; work groups etc.



- Safety communication
- Information services
- General safety climate

- Inspections – perspective depending on the quality of the organization
- Permits, licences, etc.
- Sharing of good practises
- Guidance vs. formal requirements
- Accident investigation

Topics of the assessment of chemical plants

1. Awareness of regulatory requirements
2. Management and personnel commitment
3. Risk assessment and decision making (management of changes)
4. Technical implementation and functionality
5. Instructions for and assessment of operations
6. Competence and training
7. Managing emergencies and deviations

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Assessment of chemical plants

5 Best practices	• Encouraged to continue proactive development
4 Good practices	• Positive features identified
3 Meets legal requirements	• Possibilities for development emphasised
2 Requires improvement	• Advised, urged to improve
1 Significant deficiencies	• Swift action required
0 Severe deficiencies	• Immediate action required

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Supporting the development of safety culture

5 Best practices	• Encouraged to continue proactive development
4 Good practices	• Positive features identified
3 Meets legal requirements	• Possibilities for development emphasised
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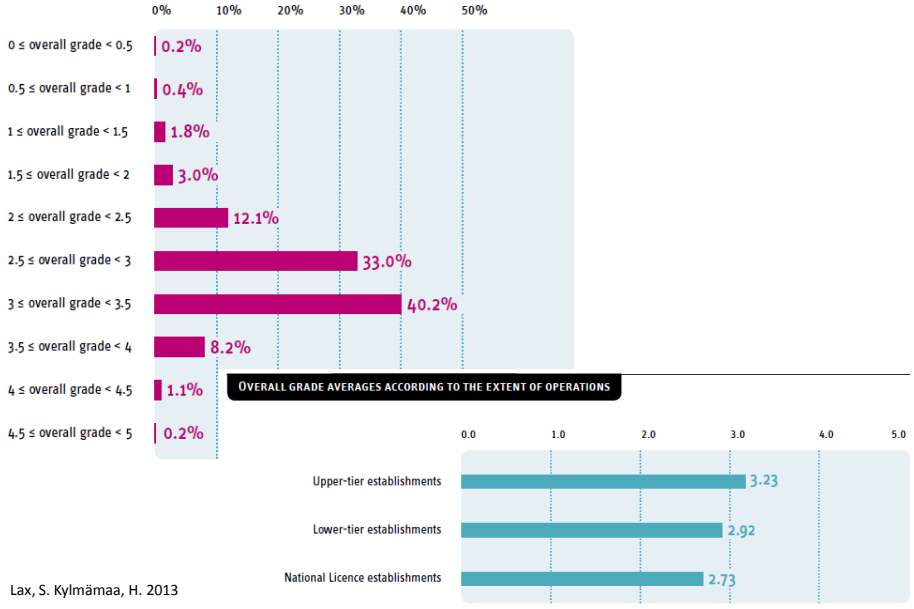
Distribution of grades (2012)



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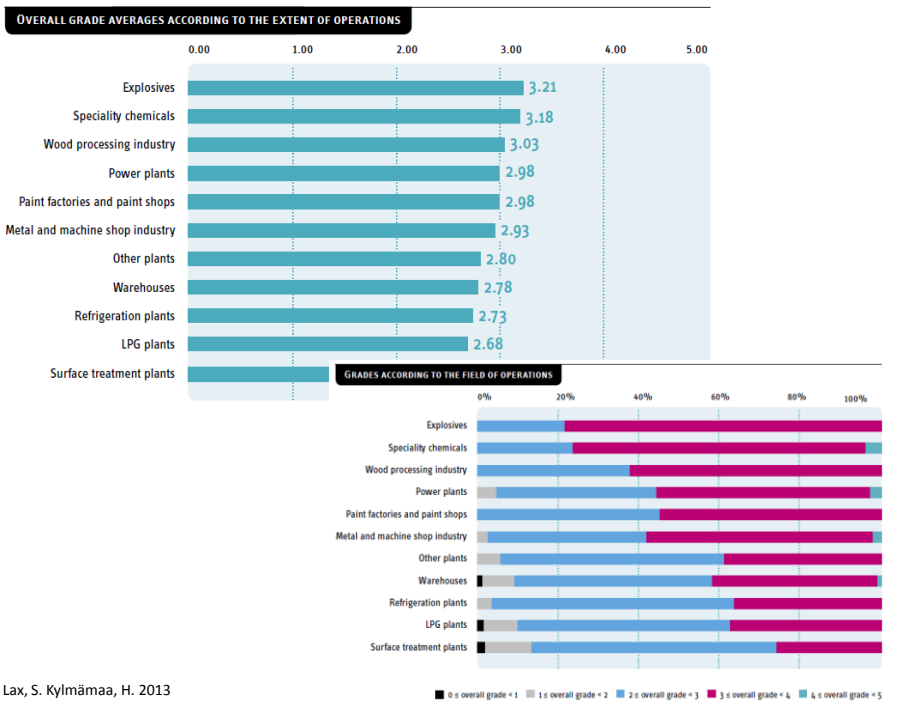

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Examples of inspectors' observations

- Safety culture as a term is not often actively referred in companies → "The company way" of doing things
  - Practical viewpoint is predominant
  - Focus on work methods and practices
- Comprehensive understanding of safety is crucial → safety doesn't follow the organizational boundaries
- Strong background in occupational health and safety vs. process safety → different perspectives, require different knowledge and methods
- The effects of company's economical situation can quite directly be seen in implementation of various safety operations and investments

Examples of inspectors' observations

- The field of business affects safety culture
  - E.g. mining → timespan of investments and creating safety procedures is different from more stabile industry
- National safety values and attitudes affect companies safety values / culture
  - Multinational corporations → safety culture / practices derive from the country of origin and can be very different in different countries ("How many persons were kidnapped during the past month?, How much of the company property has been stolen? Vs. very disciplined safety procedures)

Future challenges

- Inspections considered to have a positive role in developing a positive safety culture
  - Inspections are regarded positively – benchmarking aspect
  - More co-operation between companies would benefit them
- Importance to promote proactive safety culture → proactive indicators
- Communicating new and modern safety perspectives and developments to the companies
  - New philosophies behind safety work (e.g. development of resilience)
  - Are we looking at risks and mistakes or signs of safe behaviour and safe practises?
- Finding more efficient ways to communicate the good practices
- Role of maintenance very important
  - Outsourcing
  - Aging of process plants → the risks change, e.g. breaking of structures due to aging

Future challenges

- Commitment of the management still one of the main issues (Corporate governance → managements role in process safety, OECD 2012)
- Seveso III (2015), e.g. the inspection reports will be made more easily available to the public → changes in public interest and safety atmosphere?
- In the future the new technologies create one of the biggest challenges, e.g.
  - New technologies in mining industry e.g. bioheapleaching (Talvivaara)
  - New energy solutions
    - Increase in production of biofuels and use of liquefied natural gas (LNG)
    - Quick pyrolysis
  - New products and technologies in existing process plants
  - Requires new knowledge also from the authorities
- Changes due to different legislation areas
  - E.g. environmental legislation requires collection of diluted malodorous gases → safety risk

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Thank you!

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