



TUKES
TURVATEKNIIKAN KESKUS

Company

Address

Periodical Inspection 1.1.2005

Plant tier category

Safety Report Establishment

MAPP Establishment

National Requirement Establishment, (other under TUKES surveillance)

Applied regulations

The Decree on the Industrial Handling and Storage of Dangerous Chemicals (59/1999)

The LPG Decree (711/1993, amendment 129/1999), The Explosives Decree (473/1993, amendment 131/1999), The Natural Gas Decree (1058/1993, amendment 128/1999)

Chemicals in question

chemical 1 (classification)

chemical 2 (classification)

chemical 3 (classification)

Quantities

x t

y m³

z m³

1. The opening event and a list of participants

name (chp)	inspector	TUKES
participant 1	title	Company and department
participant 2	title	Company and department
participant n	title	Interested authority

2. Presentation of the plant and related risks



2.1. Presentation of operation

- field (refer to list at end)
- does the company operate as a part of a larger corporation
- any notable changes since the previous inspection
- knowledge of any future plant changes
- any notable risks relating to operations

Assessment numbers

0 = Serious deficiencies

1 = Essential deficiencies

2 = Demand for developing

3 = OK - Fairly good

4 = Good practices

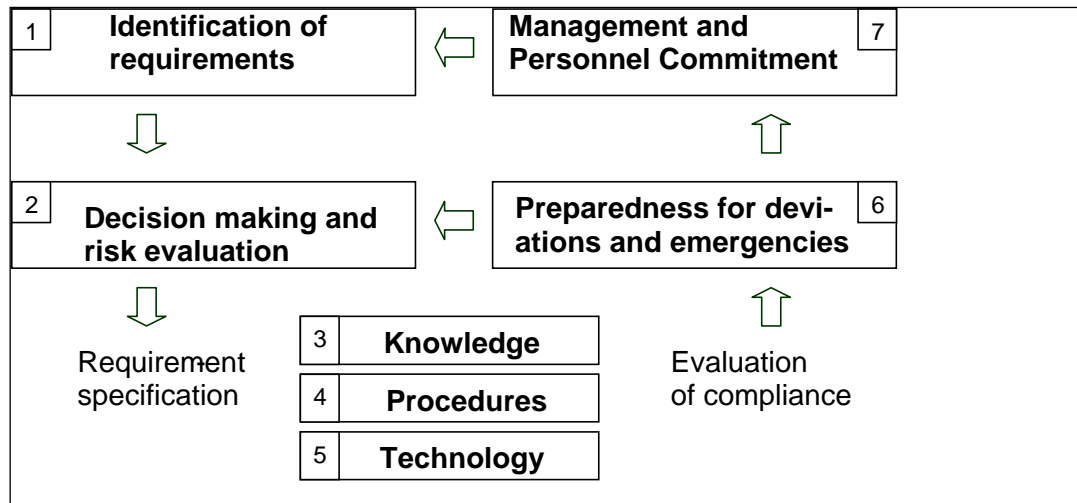
5 = Proactive developing



2.2. Outstanding from previous inspection

- agreed corrective actions undertaken since previous inspection

The following diagram describes the flow of an inspection.



3. Recognizing of the demands of legislation



In this part it how well a company has recognized the demands of authorities and safety is clarified together with how changes in regulations are followed.

- legislation and changes in it (chemicals, pressure vessels, electricity), standards and directions relating to a certain field
- other demands, chemical and explosives licences, announcements, safety reports, MAPP-document
- demands from other authorities (environmental, labour protection, emergency services)

Verification / evidence:

- relative documentation, licence register, safety report and updates

4. Management and personnel commitment



As part of the inspection we evaluate the commitment of management and personnel in safety matters and also how management works towards maintaining a safety level.

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- the systems to which a company is committed (quality-, environmental- and safety management system)
- in what way does management show it is committed to safety matters and to communicating safety issues to personnel
- safety targets and aims, safety policy
- accident prevention policy to which management is committed
- how a possible parent companies' clients can otherwise be seen to have an influence on operations in the company. Is it a parent company initiative?

- the personnel and management tasks and the responsibility areas in the organisation (the appointed person for major accident prevention policy, the appointed person for plant operation, job description of the accountable person and opportunities for carrying out the enforcement of tasks)
- how do you assess whether targets and aims have been reached (internal and external auditing)
- the agendas for the reviews made by top management
- other evaluations made by other authorities of certified bodies
- the commitment of personnel regarding the maintenance of safety matters
- education requirements for personnel
- requirement relating to non-company outside workers and subcontractors or consultant selection

Evidence:

- interviews of accountable persons
- do job descriptions include safety matters
- main safety indicators
 - o investments regarding safety
 - o accidents, near-miss cases, cleanliness level
 - o fault and failure lists
 - o general tidiness and good order
 - o follow-up of recorded faults
 - o safety tours
 - o follow-up of safety level statistics
- how do management communicate safety matters and their importance to personnel
- management participation in safety education
- the minutes of the meetings of the management review covering skill requirements and decisions regarding their development
- safety and auditing reports regarding human safety and the natural environment

5. Risk assessment and decision making



In this part we assess if the associated dangers have been identified and risks evaluated systematically. Also our aim is to find out what the decision making process is in the company and how safety issues have been taken into account in the decision making process.

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- how are dangers and their consequences systematically assessed
- how do you benefit from the reporting of deviation and near misses
- in which way do you assess dangers relating to changes (technical changes, operational methods and changes in instructions)
- the responsibilities relating to changes (who accepts changes in varying situations)
- how are the risk results taken into account in decisions relating to safety
- have the choices which have been selected been well founded

Evidence:

- methods used for danger identification and risk and consequence evaluation
- personnel participation in danger identification and risk evaluation
- gas dispersion models and consequence analysis
- explosive protection document (including classification of hazardous areas)
- examples of minutes of meetings in which important decisions have been made, operational instructions and specifications together with any possible additional decision making analysis
- activities based on results of risks and consequence analysis and realization follow-up
- instructions for the management of change

6. Identification of demands and follow up of realization

At inspections one has to evaluate how well a company has identified requirements which should take into account, amongst other things in the planning of buildings, lay-out of plants, safety distances, process machinery, pre maintenance, instructions and personnel training. Identified requirements should be confirmed as having been carried out.

6.1. Technical realization and operational condition



- in which way are the demands of technical solutions and operational conditions specified (the demands can be connected to the regulations, standards, instructions for designated chemical properties, process conditions, results of evaluations, experience gained etc.)
- have the recognized realisation demands been documented (as for example, plant specifications/criteria for appliances, criteria for automation solutions and maintenance plans)
- how are operational settings for automation selected (alarm- and lock-down settings)
- has the plant specified safety in terms of critical machinery
- how are the recognised demands of safety applied in practice when ordering work, with regard to, for example plant processes, layouts and structures (buildings).

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- how do you assure that the plant's technical realisation and engineering, and operating conditions meet anticipated situations (applied safety demands) and who has responsibility for their follow up
- which technical means and demands are used to forestall accidents and for limiting consequences (processes, automation)
- how are plant and operational conditions and their follow up assured (the testing of gas detectors, fire-emergency, the assurance of safety automation, periodic inspections, pre-emptive maintenance, the validation of safety in terms of critical machinery etc.)

Indications/evidence:The forestalment of accidents and the limiting of consequences

- layout, safety and risk distances
- safety structures (release walls, explosive openings, pressure containment walls)
- plant and container location (how does the plant reality compare to the plan)

Technical criteria and documentation

- specifications and their contents (what factors have to be taken into account, for example, process conditions, condition of surroundings, chemicals in use, maintenance opportunities etc.)
- how can the operator indicate as a part of the decision, the choice of plant or plant equipment
- requirements given to plant machinery suppliers
- safety automation documentation (integrity level, independency from other systems, operating limits)
- a list of main lock-down systems and their thresholds
- have change management procedures been followed (examples)
- extinguisher and cooling equipment for containers
- automatic extinguisher equipment

Inspections and maintenance

- plans for maintenance and services, clarification of the inspection periods for critical and non-critical equipment
- periodic inspection plans
- pressure vessel documentation
- leakage-supervision documentation
- container and pipe work documentation (container conformity certificate)
- burner documentation (petroleum liquid gas)
- electric equipment in hazardous areas
- earthing documentation
- ventilation documentation
- third-party inspections

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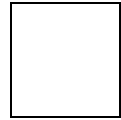
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- maintenance personnel interviews

6.2. Operating instructions and evaluation

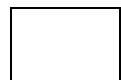


- regulations concerning the safe operation of a plant, maintenance, downtime and deviation situations (and the basis for the content of the regulations) and instructions for updating
- Work permits
 - o what kind of work requires a permit
 - o practical methods for dealing with work permits
 - o who is responsible for issuing work permits
 - o safety assurance of prior to issuing a work permit
 - o method for assuring a safe work environment prior to starting work
 - o methods for following up the progress of the work and its conclusion
- have the given instructions and methods been carried out

Indications/evidence:

- the content of the instructions for work and method for proceeding and how are these directed/communicated to the personnel
- service instructions
- methods for assuring information flow (meetings, shift event reports and information)
- "receipt practice" for dangerous work (assurance of safety prior to starting permitted work)
- examples of granting permission for work
- interviews with process employees, maintenance/subcontractors with regard to the operability of methods
- instructions for subcontractors and plant employees
- the most important aspects of the internal and external audit reports with regard to instructions

6.3. Skill and training



- familiarization of the personnel and subcontractors' personnel with their work and duties
- in which way is it registered that personnel have received training or in which way is it followed up
- how do you assure that the plant and subcontractor personnel have sound work practices (and also that they are aware of the dangerous aspects concerning given tasks and work environments)

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- the planning and content of training
- "follow up" systems following course events (what has been remembered after the course)

Indications/evidence:

- presentation of a new employees familiarization in reality
- interview of a new employee from the safety education point of view
- indication of required tests for showing competence
- interview of plant/subcontractor personnel
- indications of the subcontractor personnels' training
- training events held and their content
- training register

7. Preparedness for Deviation



By deviation we mean an accident situation, an incident, a fault in a process or a client complaint. A deviation may relate to technology, procedure or a lack of knowledge. The scope of the procedure and documentative preparedness for deviation will be assessed in this chapter.

- in your company has a deviation ever been defined
- at what point are operations for emergencies commenced (for example when do you carry out emergency shutdowns)
- instructions for handling deviations and emergency situations
- internal emergency plans and their realization and keeping them up to-date
- practise and training for states of emergency
- preparedness and prerequisites for first -stage fire fighting

- reporting and management of near -miss and accident procedures (external contractors)
- accident reporting to the Authorities (procedures)
- procedures relating to accident investigations and how to benefit from them?
- how to benefit from information gained from accident investigations in other plants
- deviation reports: how is information collected and utilized
- the handling of client complaints

indications/ evidence:

- identification of deviations which occur in some process.
- accident and incident reports (made by the company or a contractor), other deviation reports.
- reports from accident situation training and instruction
- necessary information for the public

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8. On-site tour

- comments

9. Summary and the next inspection

- other matters
- the frequency of inspections to come (tentative)
- the date of the next inspection

10. The functionality of regulations, the control system and feedback

- update of regulations and their extent for the company
- findings and feedback according to regulations and activities of authorities

Signature
Inspector

Technology classification:

SEK	production of paints, car- and washing chemicals, mixing of chemicals without actual reactions
KYL	Cold storage facilities and refrigeration facilities (ammonia)
LPG	LPG storage and handling, also aerosol manufacturing
ENE	power plants
PIN	surface treatment or impregnation plants
PAP	paper mills (pulp and paper industry, also chemical upgrading processes)
KEM	chemical plants, with actual reactions
MET	metal industry and metal engineering, paint shops
RÄJ	production of explosives and their storage
VAR	storage facilities for liquid and solid chemicals (containers and mixed goods)
MUU	other plants

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