



Description of the SHE-Management of an explosives company supported by a special software for Management Systems

Abstract:

Described is the structure of a SHE-Management System being supported by a special software for management systems. The structure does not only orientate towards the structure of the operational organization but also towards the directions of the European Seveso-II-Regulation respectively how to be converted into the German major-accident regulations.

Structured like a pyramid, at first the system structure is described via a main connecting theme. Afterwards the company standards for the field of explosives are fixed. Separate organization instructions are about the items environment protection, plant safety, management of hazardous materials and waste disposal, maintenance, emergency organization, determination and assessment of incidents, investigations of accidents, external company- and internal work teams for the item SHE. Further specifications are made by working and operational instructions.

The competences and working fields of the employees are settled by job descriptions also defining the delegation of employers' duties.

Plots like how to behave in case of major-accidents, breakdowns, accidents, or training periods are also shown on flow charts like all production processes. The special form of representation supported by the software used facilitates to deposit documents like working instructions, forms, or service proofs in each current version behind single process steps.

With the help of a reading control the administrator can check for each single employee if the documents relevant to him have been received and read. By this system it is also quite easy to guarantee the topicality of the documents.

Check lists are available e. g. for changes regarding safety, accident determinations, and management reviews by the management.

Changes in installation parts regarding safety are followed up by a "Management of Change" (MOC). A check list exactly fixes the responsibilities and chronological plots for each single change. The documentation covers all items starting with the planning, risk estimation, realization, modification of the installation documentation, putting into operation, and post assessment.



Full text:

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It is not only required by the company to clearly define and realize the structures of organization amongst others for the fields SHE and Q, but we also have requirements from – in this case - European legislation via the Seveso-II-Directive.

< *Requirements from European legislation* >

The system used by the competent authorities for inspections in Germany is a questionnaire of 120 questions covering ten different items, most of them regarding aspects of company organization.

< *German Major Accident Regulations* >

All the previous discussed items lead to the following structure of the SHE-Management System.

< *Overview SHE-Managementsystem* >

The types of generated documents below the organizational instructions and the processes to fix their contents in detail are as follows:

< *Types of Documents* >

Before we are going down to business to see the software system running, we first and foremost have a look how to image plant and operational processes.

< *Imaging of Plant and Operational Processes* >

The next chart will show that the operational process is both a recurring chain of steps one following the other and a plant process. They have a definite input and output, either.

< *Input/Output* >



The operational process is starting with an action or event released by someone, running through the concerned departments (grey beams in the picture), connected to specific activities, interfaces, or documents ending in a result.

The plant process is starting with raw materials put into the plant equipment, running through pipes, pumps, and different working steps (connected to working instructions) ending with the final product (explosive).

The following two illustrations are showing examples for both process varieties. The process is generated by a skilled team step by step.

< Example: Access of unauthorized persons >

< Example: Production of Emulsion Explosives >

The coloured boxes in the second example mean a connection to other documents like data sheets, maintenance documents, working instructions, etc.

Even for complex processes these tools are useful by dividing or cutting large process descriptions into smaller sub-processes which will be connected to detailed work processes as shown before.

< Process levels >

The link of the relevant information to the generated process in the software can be done in several steps. All relevant information regarding a process or even a single document is integrated like a card index box, e.g. information like:

- a person who generated, checked, and released the document
- locations the document is valid for
- distribution
- key words
- associated docs

< Link of process relevant information >

Document steering and administration can easily be conducted. The systems offers tools like reading control and the use as a database to check e.g. documents per employee.

< Document steering and administration >

