




Plant Operation in Compliance with the Law

– a Challenge for Plant Mangers as well as for the Authority

Prof. Dr.-Ing. Edgar Schicker
Nuremberg Institute of Technology
Institute for Interdisciplinary Innovations 

Content



- **Intoduction**
- **A short overview on European rules and regulations**
- **Structure of environmental and industrial law in Germany**
- **„Safety levels“**
- **Referencing from judicial to technical rules**
- **Internal expert – companies‘ self control**
- **External expert – mediator in-between authority and company**
- **Pros and cons on „deregulation“**
- **Summary**



Member of the organising committee for the IFAT China – trade fair and conference – in Shanghai (PRC)





Co-chairman at the „**UNIDO-Experts-Committee – Blue Sky**“

Board of five CAS members and five foreign experts on advanced technology – in cooperation with the „China Hi-Tech-Fair“ in Shenzhen

Edgar Schicker – schicker@best-berlin.de



Consultant to international projects on energy supply and environmental protection



TALK AT STELLENBOSCH UNIVERSITY - FEBRUARY 17th 2017

Main subjects

at the Nuremberg Institute of Technology



- Power plants - design, construction and cost estimation
- Power plants' equipment
- Water treatment
- Recycling technologies
- Treatment of waste from energy conversion plants
- Waste incineration
- Projects jointly carried out with industrial partners



- **Approval planning for energy conversion plants**
Master course (4 hpw) at the
University of Applied Sciences Ansbach
- **Legal requirements in engineering**
Master course (4hpw) at the
Nuremberg Institute of Technology
- **Rules and regulations**
Bachelor course (2hpw) at NIT
- **Accounting for engineers**
Bachelor course (2hpw) at NIT

Today's Topic



Legal framework for engineers

8

TALK AT STELLENBOSCH UNIVERSITY - FEBRUARY 17th 2017



Plant Operation in Compliance with the Law

– a Challenge for Plant Mangers as well as for the Authority

European Rules and Regulations

Basic structure



There are two types of European regulatory instruments:

- 1. EU regulation** (e.g. REACH, CLP)
mandatory for all member states from the date of enactment in Brussels
- 2. EU directive** (e.g. IED, TWG)
to be enacted by the member states through national laws and ordinances



Water Protection – the oldest environmental regulation in Germany (1960)

- Federal law (WHG)
 - States' law (BayWG)
 - Federal ordinance (WasgefStAnIV)
 - States' ordinances (VAwS)
 - Administrative instruction (VwVwS)
 - Municipal regulations (Kommunale Satzung)
- 11 ■ (Codes of practice e. g. DIN, TRwS)
-

Structure of environmental and industrial Law in Germany



- **Immission control** (BImSchG)
- **Closed loop recycling management** (KrWG)
- **Soil protection** (BBodSchG)
- **Nuclear safety** (AtomG)
- **Law on chemical substances** (ChemG)
- **Product safety** (ProdSG)
- **Work protection law** (ArbSchG)
- ...
- and many more.

„Safety levels“



The forementioned rules refer to different so-called „safety levels“:

- **Generally accepted codes of practice**
(e.g. water protection)
- **Best available technology**
(e.g. immission control)
- **State of the scientific and technical knowledge**
(e.g. nuclear safety)

Referencing from judicial to technical rules



There are four different ways to refer from a judicial rule to a technical rule:

- Incorporation
- Static reference
- Dynamic reference
- **Sweeping clause**

Referencing from judicial to technical rules



Legislation more and more refers to technical standards by

- **Sweeping clauses**

thereby challenging the law's applicant to keep up to date on confusingly broad technical guidelines that's validity periods are short.

Internal expert – companies' self control



Many regulations refer to several different qualifications internal experts have to acquire – to prove respectively:

- **Skilled** (fachkundig) –
e.g. handling hazardous substances
- **Experienced** (sachkundig) –
e.g. conduct risk analysis
- **Qualified** (befähigt) –
e.g. checking safety relevant tools

Internal expert – companies' self control



Internal experts are responsible for numerous tasks and represent the company towards authority and external experts; they

- instruct and train the staff ,
- check the due days for external surveillance,
- decide whether a technical modification is of
 - marginal alteration (notifiable) or
 - substantial alteration (subject to approval),
- report incidents that must be reported to the authority,
- ...

Internal expert – companies' self control



One of the **internal experts'** most prominent task is to care for work safety – this comprises surveillance on the attention of existing rules and measures to improve the safety standards.

Two examples shall be discussed:

- Obligation to wear protective goggles on site,
- motivate the staff by safety awards for accident free working periods.

Internal expert – companies' self control



Internal experts often – especially in SME – are overburdened with responsibility without receiving an adequate appreciation.

In case of an external accusation they end up caught between two stools.

External expert – mediator in-between authority and company



External experts are appointed by the authorities for various fields, e.g.:

- pressure vessels,
- boilers,
- handling hazardous substances,
- industrial water protection,
- ...

External expert – mediator in-between authority and company



Various directives oblige the site management to involve **external experts** for surveillance tests – the periods vary according to the degree of exposure in-between two and five years. The tests comprise of

- regulatory examination,
- technical examination and
- safety inspection.

External expert – mediator in-between authority and company



The **external expert** reports to the responsible authority and summarizes the results in four categories:

- free of defects,
- marginal defects,
- substantial defects,
- dangerous defects.

External expert – mediator in-between authority and company



Due to the confusing obligations management of technical plants has to face in a field it has little or no expertise there is a tendency to rise involving external experts to take over employer's responsibilities, e.g.:

- prepare risk analyses,
- train the staff,
- reporting to authorities,
- ...

Pros and cons on „deregulation“



Involving external experts to carry out internal tasks thwarts distinctively the European Authorities' propaganda for

- **Deregulation**

Many directives grant exceptions from external surveillance in the case of implementation of management systems e.g. ISO 14001.



- **A wide – and still growing – variety of rules and regulations over burden the technical management with requirements outside of its subject and with severe consequences in case of violations.**

Summary

2/4



- **With the progressive movement of „lean processes“ there is a lack of capacity and resource for handling those issues outside of the subject.**

Summary

3/4



- **External experts' core business is to keep the knowledge on rules and regulations up to date.**

Summary

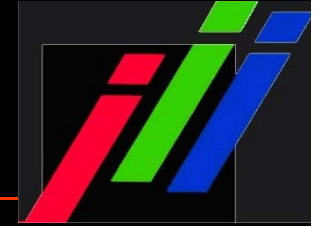
4/4



- **Involving external experts reduces the risk for the technical management to be accused of violating the law and additionally it can be awarded by keeping measures on a reasonable scale.**



Thanks for your attention!



Prof. Dr.-Ing. Edgar Schicker

Institut für interdisziplinäre Innovationen

Kesslerplatz

D-90489 Nuernberg

+49 911 5880 1499

schicker@best-berlin.de