
4th Freshwater Spills Symposium 2002

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German Storage Regulations for Hazardous Substances

**Rüdiger Steffen Dipl. Ing.
Gesellschaft für Tanküberwachung mbH**

1. Facts about Germany

Population:

82.0 million

(Florida: app. 16.0 million)

Total Area:

137,827 square miles

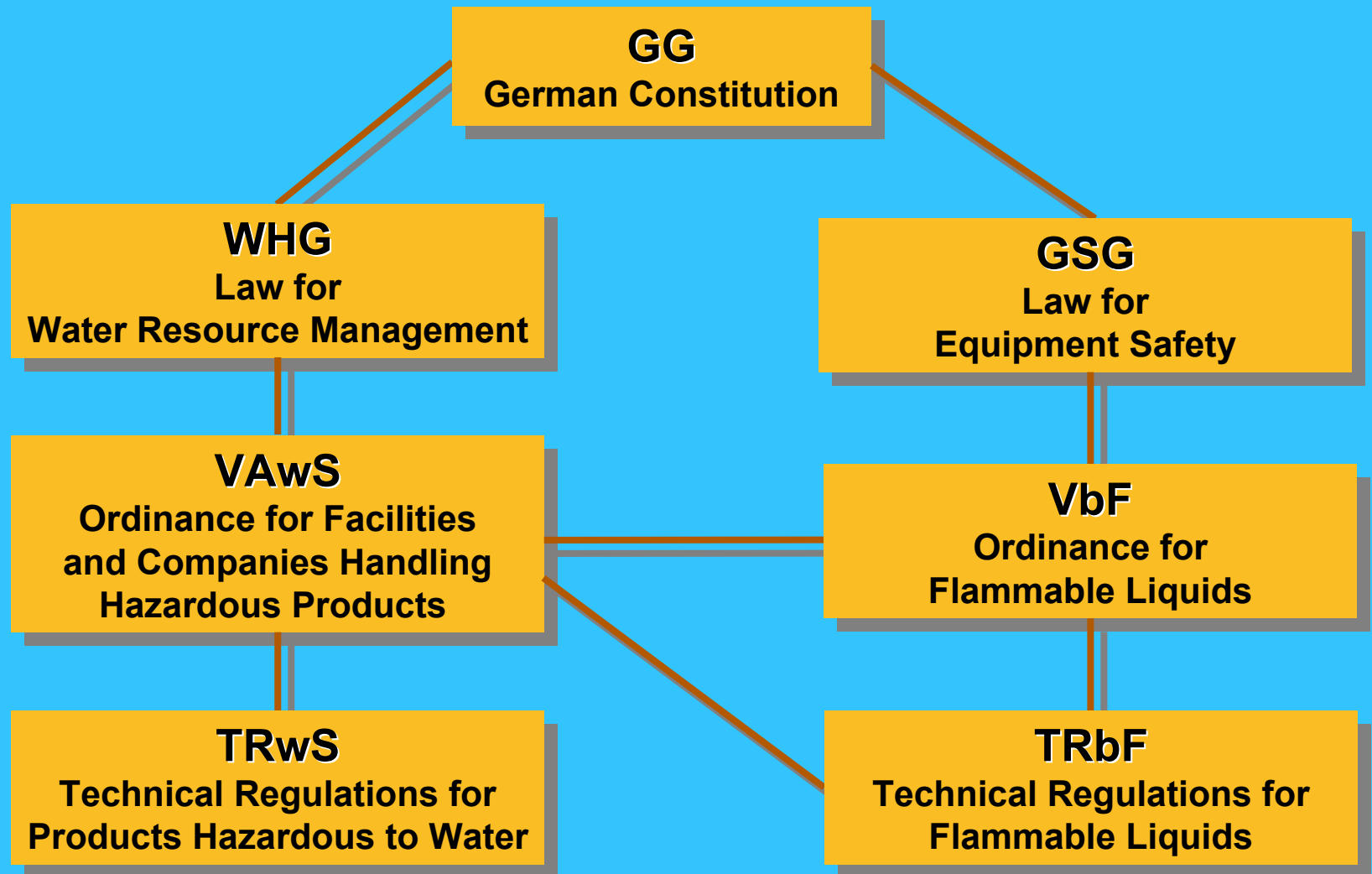
(Florida: 58,560 square miles)

Amount of ASTs:

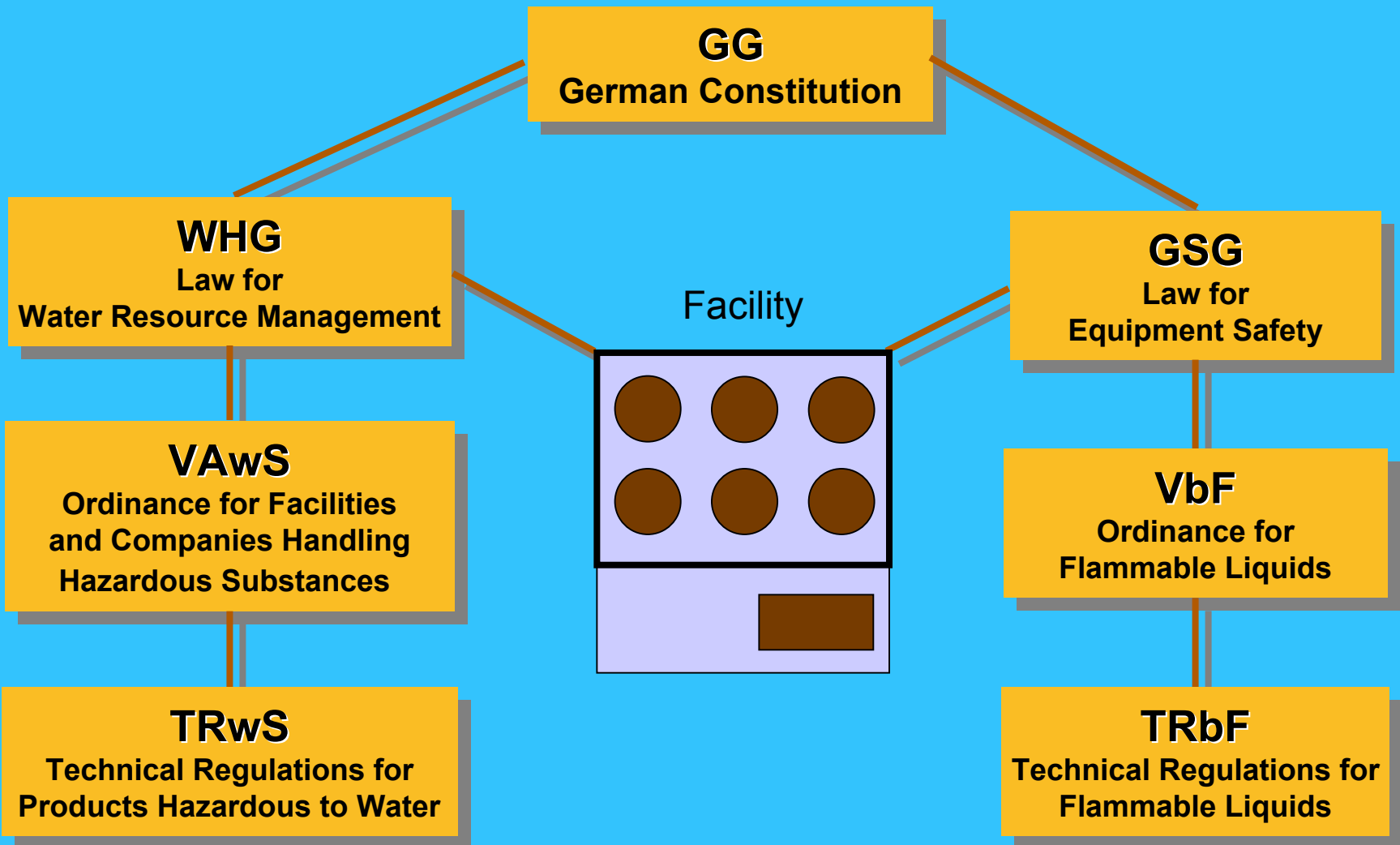
app. 95,000

(Florida: app. 19,000)

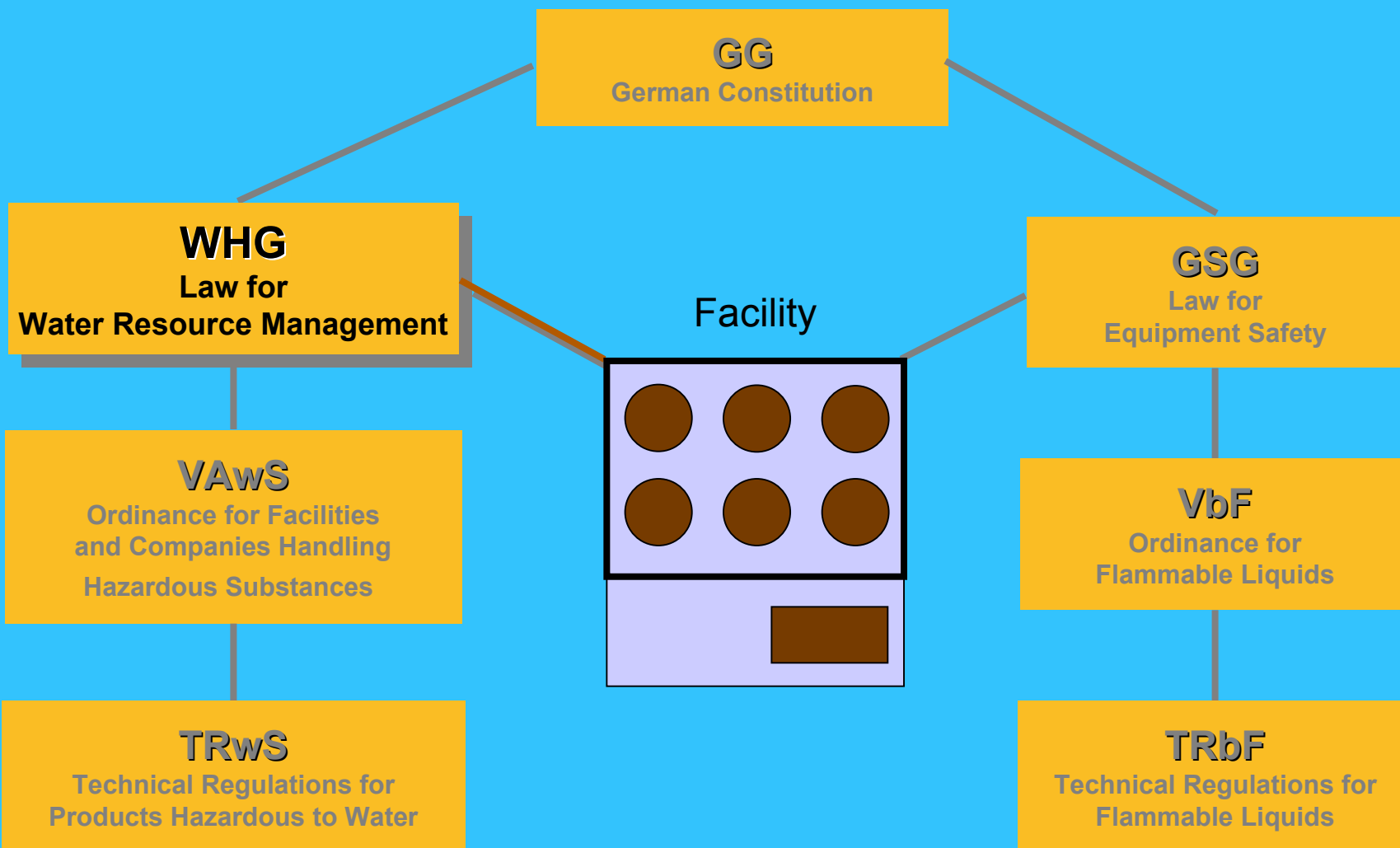
2. Legislation in Germany



2.1 Legislation Chart for Facilities



3. WHG Law for Water Resource Management

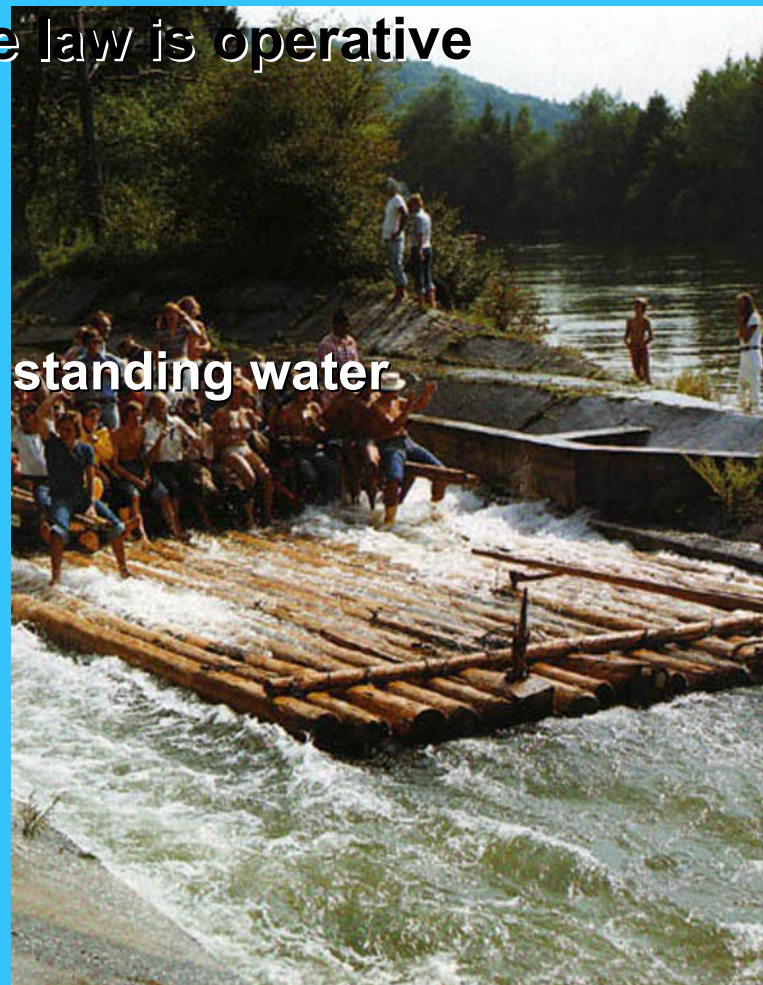


3. Content of the WHG

§1 Area, within which the law is operative

□ • Stretches of running and standing water

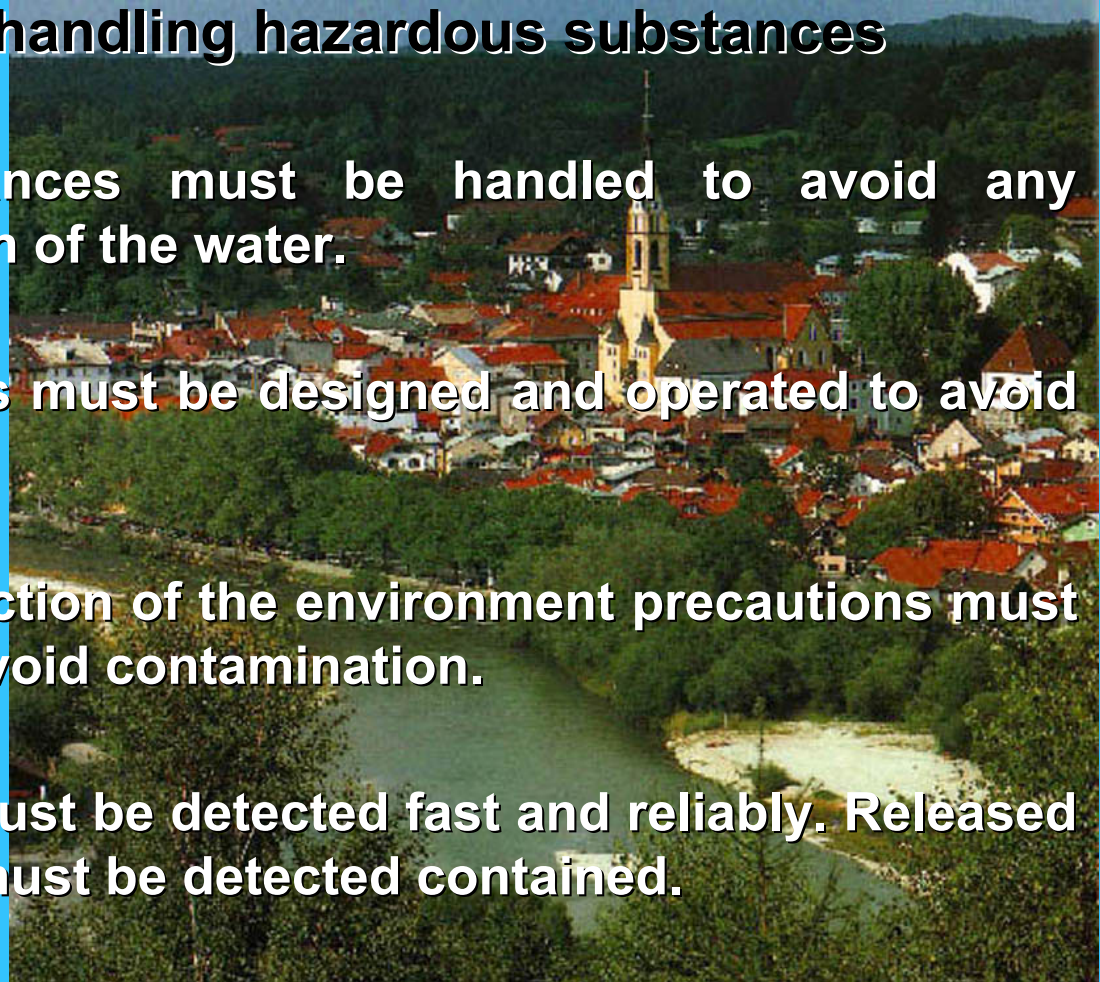
□ • Costal waters



3. Content of the WHG

§19g Facilities handling hazardous substances

- All performances must be handled to avoid any contamination of the water.
- Storage tanks must be designed and operated to avoid any release.
- For the protection of the environment precautions must be taken to avoid contamination.
- Leakage(s) must be detected fast and reliably. Released substances must be detected contained.



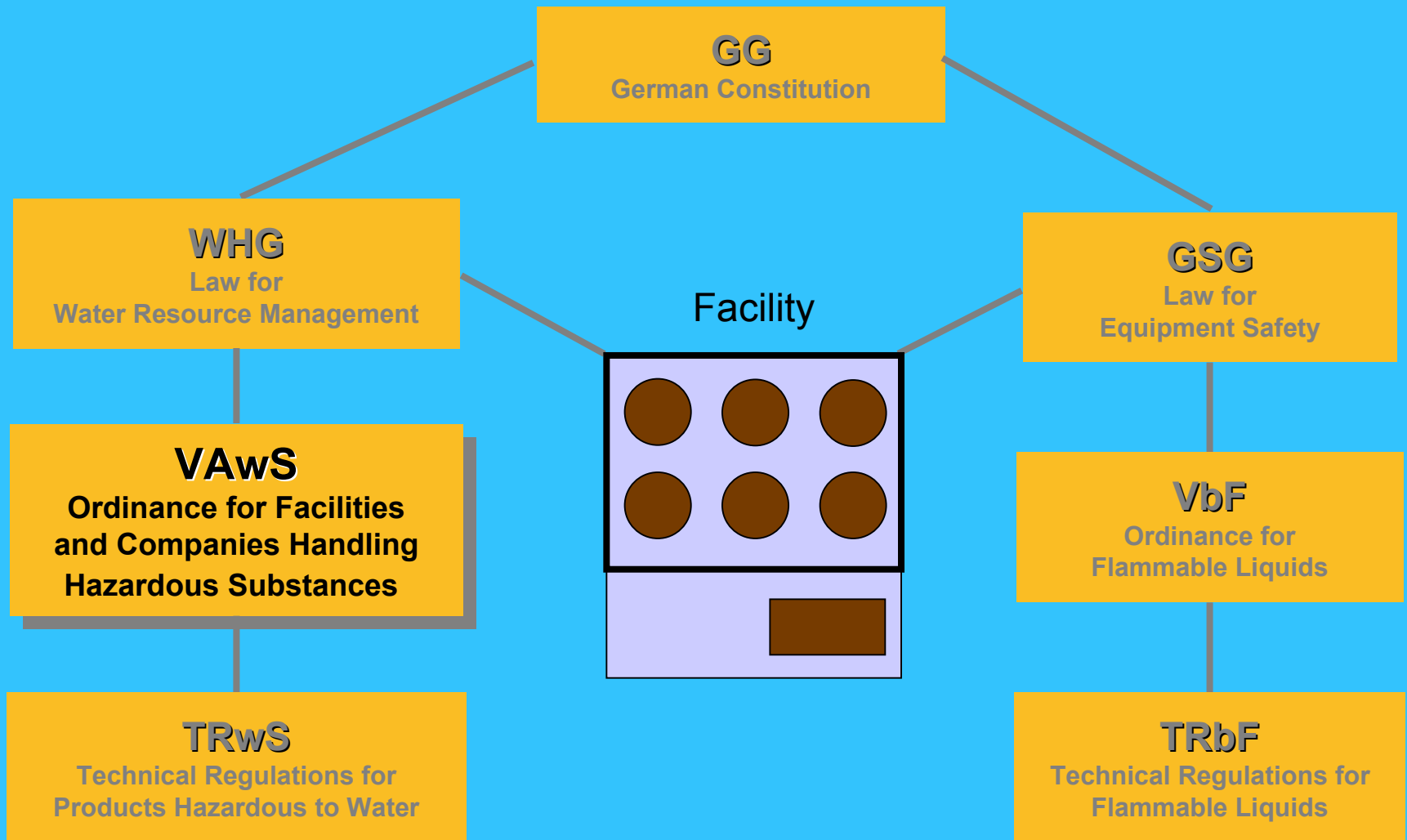
3. Content of the WHG

§19h Suitability assessment and design approval

- Facilities according to §19g may only be operated after technical assessment by the appropriate authority.
- Parts of the facility produced in series must have a design approval issued by the appropriate technical authority.



4. VAwS



4.1 Application of the VAWS

This ordinance is applicable for facilities handling hazardous substances according to §19g WHG.



4.2 Content of the VAWS

Part 1

General Regulations

- **Definitions**
- **Basic Requirements**
Avoid harmful releases; fast and reliable detection of releases; secondary containment; Alarm and response plan
- **Risk potential**
Is determined by considering the class and volume of stored product.
- **Facility land register**
Includes detailed description of the facility and special hazardous areas, details alarm and response plan.
- **Piping**
Underground piping is only allowed if aboveground piping is not possible.



4.2 Content of the VAwS

Part 2

Facilities for Storing and Handling of Hazardous Substances

Section 1

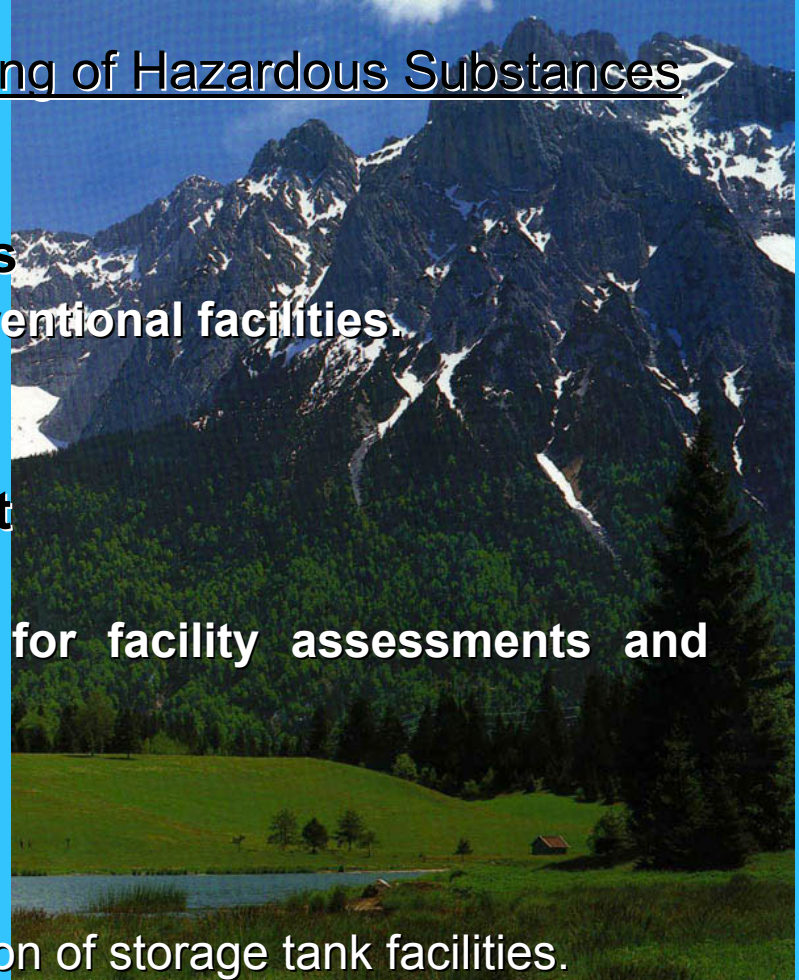
- **Conventional Facilities**
Defines simple and conventional facilities.

Section 2

- **Suitability assessment and design approval**
Defines the procedure for facility assessments and design approvals.

Section 3

- **Operation**
Describes the safe operation of storage tank facilities.



4.2 Content of the VAwS

Part 3

Facilities for Manufacturing and Treating of Hazardous Substances and Facilities Using those Substances

- **Waste Water Facilities**

Defines the requirements and operation on these facilities.



4.2 Content of the VAwS

Part 4 Supervision

- **Specialists**
Defines the training and background of specialists.
- **Inspection of Facilities**
Defines the intervals, scope and responsibility of inspection.
- **Data Logging**
Defines the format and content of all records.



4.2 Content of the VAwS

Part 5 Competent Companies

- **Exceptions**
Work outside the responsibility of competent companies.
- **TÜV (Technical Supervision Authority)**
Definition of the TÜV areas.
- **Certificate for the Quality of a Competent Company**
Describes how to be awarded with a competent company certificate.



4.2 Content of the VAwS

Part 6

Fining Regulations

Defines when fines must be payed.

Part 7

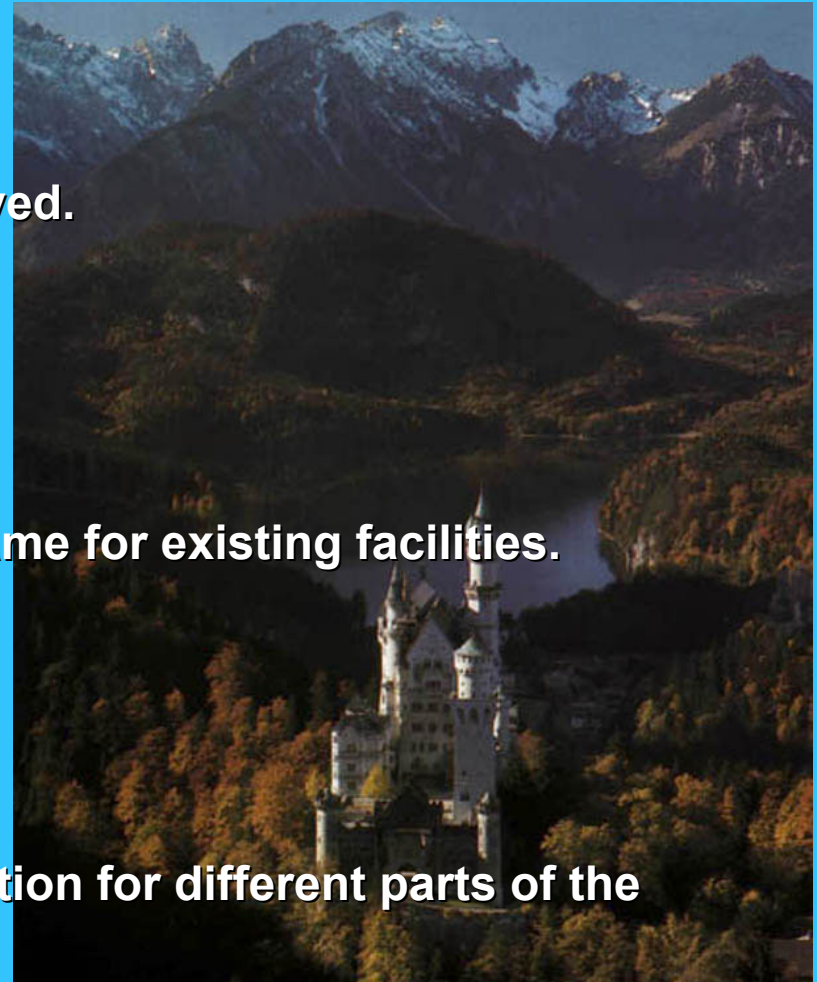
Temporary Regulations

Defines the compliance time frame for existing facilities.

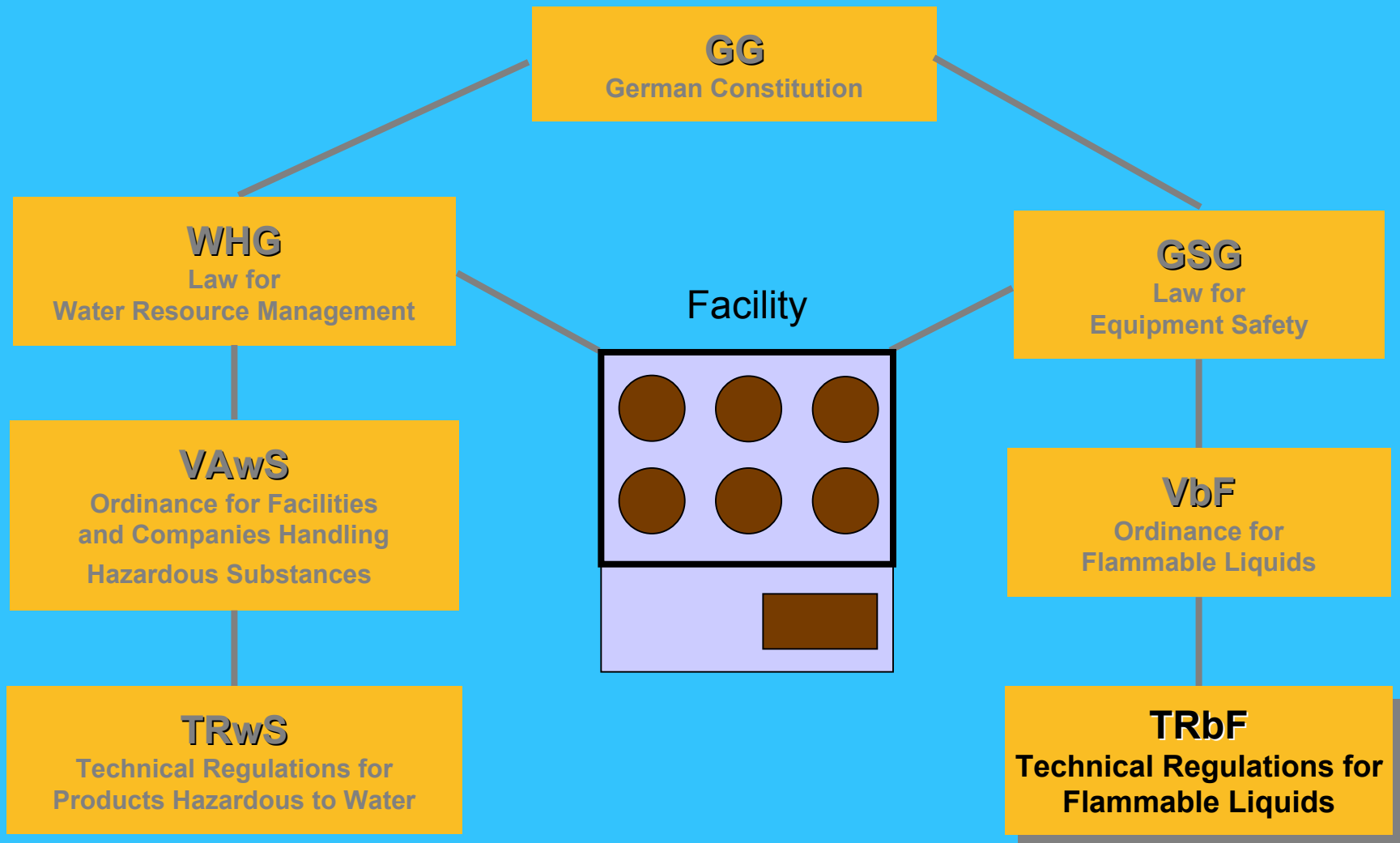
Appendix

Requirements for Facilities

Gives general defined specification for different parts of the facility.



5. TRbF



5.1 Application of the TRbF

The TRbF contains the technical safety requirements. Variations from the TRbF may only be accepted after prior approval of the appropriate authority.



5.2 Content of the TRbF

Rules 100 and 200 General Safety Requirements

- **Design Approvals**
Describes the parts of a facility that need a design approval.
- **Installations for Potential Dangerous Situations**
Describes the required escape ways and control area in dangerous situations (fire).
- **Fire Protection**
Describes proper measures and refers to the DIN standards.
- **Avoidance of Dangerous Voltage**
Describes measures to avoid dangerous voltage (sparking).



5.2 Content of the TRbF

Rules 110 and 210 Storage Facilities

- **General**
Describes general requirement for storage facilities.
- **Indoor Facilities**
Refers to special indoor storage requirements.
- **Outdoor Aboveground Storage Facilities**
Defines the requirements for AST terminals.
- **Underground Storage Facilities**
Specifies the requirements for UST facilities.

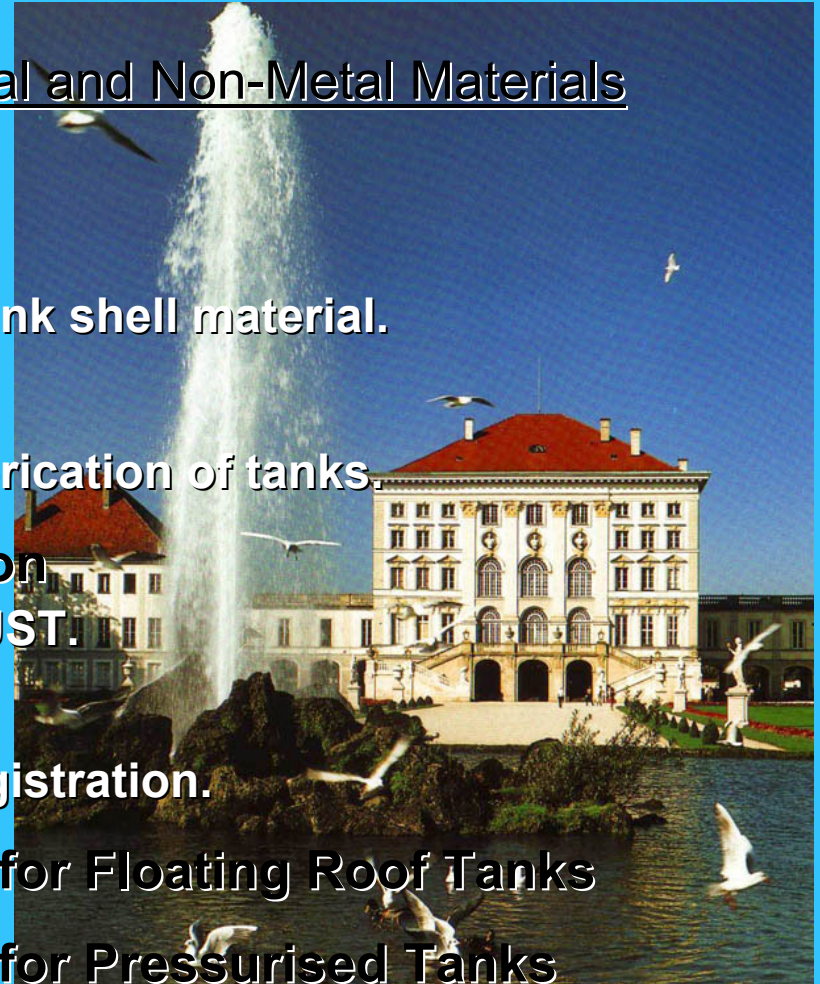


5.2 Content of the TRbF

Rules 120 and 220

Field Erected Tanks out of Metal and Non-Metal Materials General Requirements

- **Tank Shell**
Requirements for suitable tank shell material.
- **Fabrication**
Requirements for proper fabrication of tanks.
- **Foundation and Installation**
Requirements for AST and UST.
- **Registration**
Content and form of tank registration.
- **Additional Requirements for Floating Roof Tanks**
- **Additional Requirements for Pressurised Tanks**



5.2 Content of the TRbF

Rules 121 and 221 Metallic Field Erected Tanks

- **Materials for the Tank Shell**
Approved material and testing procedures.
- **Tanks**
 - Design requirements
 - Fabrication requirements and rules
 - Corrosion Protection (internal and external)
- **Transport and Installation of Underground Storage Tanks**



5.2 Content of the TRbF

Rules 131 and 231

Pipelines within the Facility

- **General**
Defines general pipe requirements (design approval etc).
- **Construction Rules**
Welding procedures, testing, instrumentation, approvals.
- **Manufacture and Installation of Pipelines**
Rules to ensure proper fabrication and installation.
- **Corrosion Protection**
Defines means of corrosion protection.
- **Safety Installations**
Defines all safety installation for pipelines.



5.2 Content of the TRbF

Rules 180 and 280

Operation Rules

- **General**

Describes general operation rules.

- **Filling of hazardous Liquids**

Describes avoidance of overfills etc.

- **Cleaning, Maintenance and Repair of Facilities**

Defines actions to secure areas prior to activity.

- **Shut-Down of Facilities**

Describes all measures to take facilities or parts out of service.

- **Additional Operation Rules for Tanks**

Rules for gas stations , loading areas, trucks.

- **Test Operation**

Describes the procedure for test operation.



5.2 Content of the TRbF

Rules 500 and 600

Testing Guidelines for Facilities and Equipment

- **General**
Lists all required tests.
- **Rule Compliance Testing**
List the certificates to be inspected.
- **Technical Compliance Testing**
Describes possible test of different facility parts.
- **Specialists**
Definition and qualification of the specialist.
- **Test Certificate**
Form and content of the test certificate.



6. Questions

Thank you very much for your kind attention.

Also, please feel free to contact me via e-mail for any later questions you might have:

rue@eco-gtu.com