

US EPA ARCHIVE DOCUMENT

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## **German Storage Regulations for Hazardous Substances**

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# 1. Facts about Germany

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**Population:**

82.0 million

(Florida: app. 16.0 million)

**Total Area:**

137,827 square miles

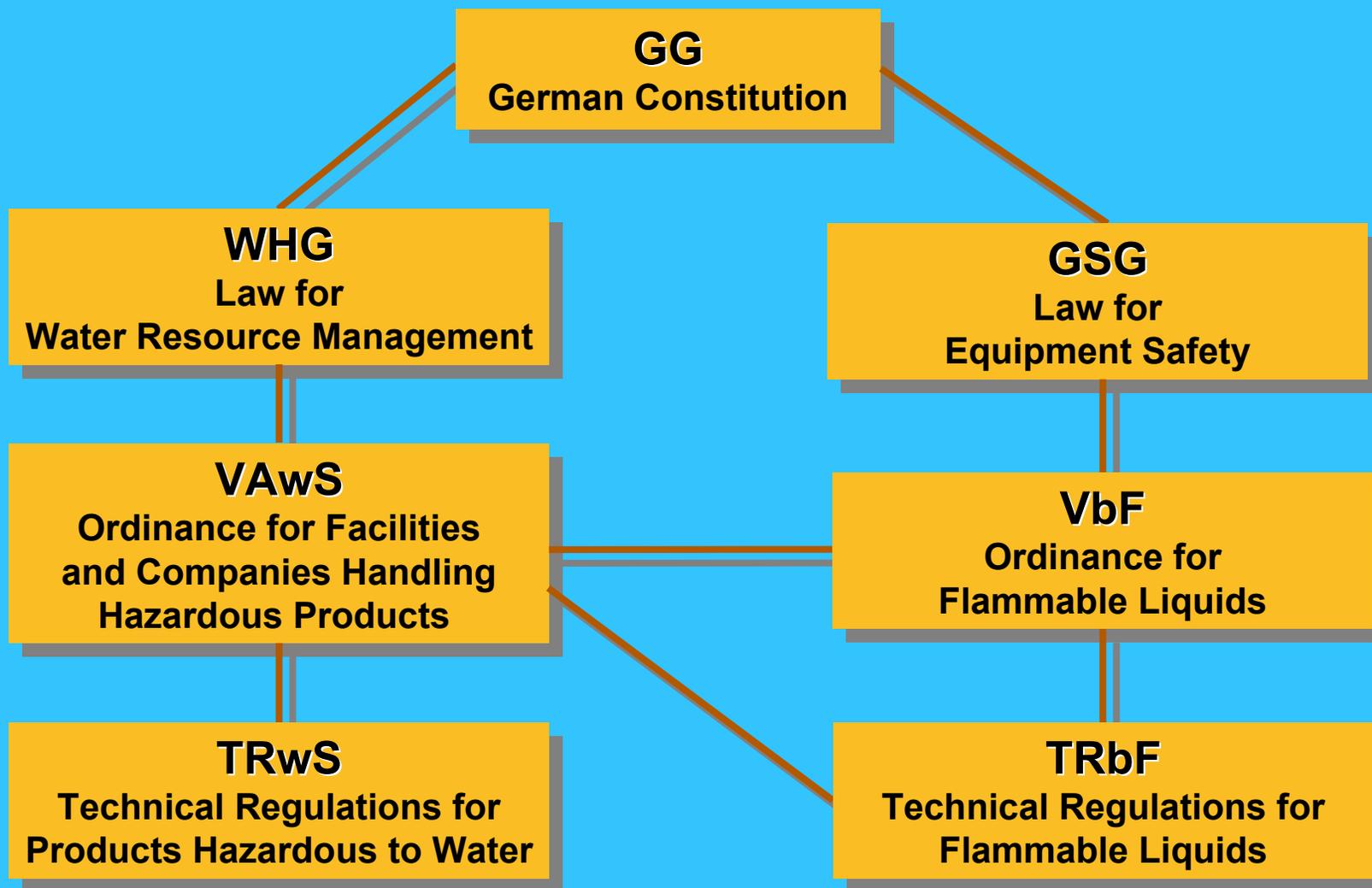
(Florida: 58,560 square miles)

**Amount of ASTs:**

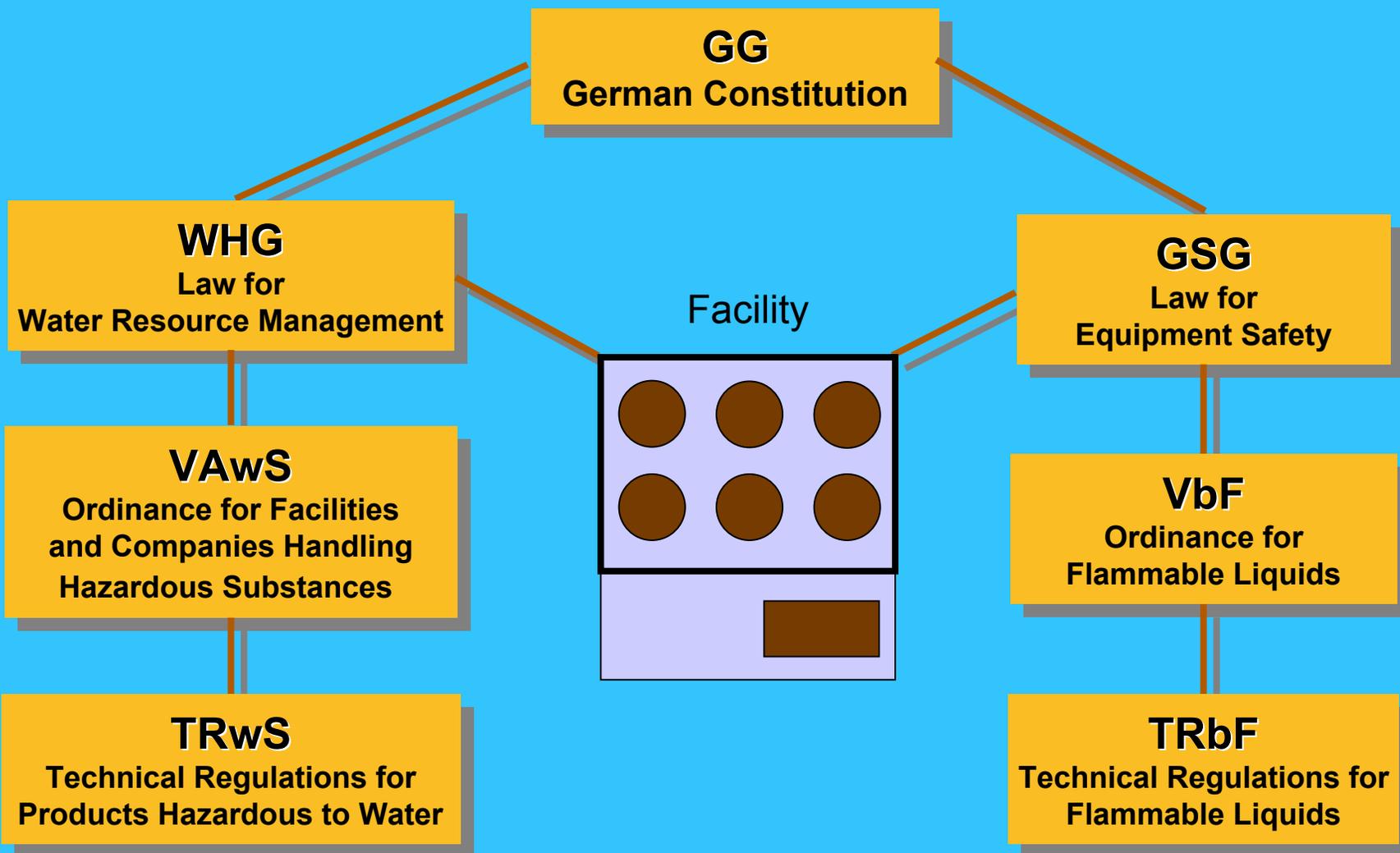
app. 95,000

(Florida: app. 19,000)

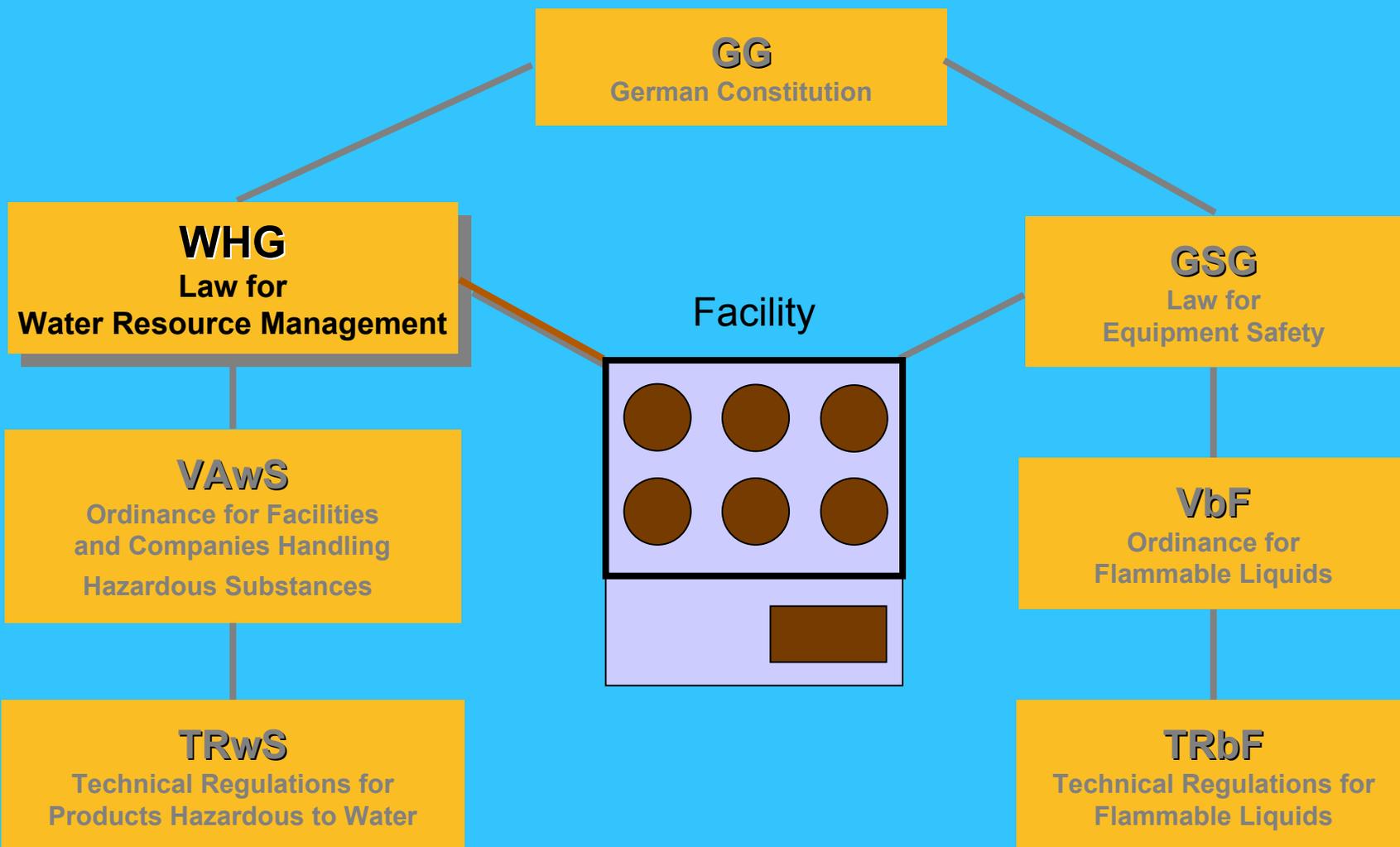
## 2. Legislation in Germany



## 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

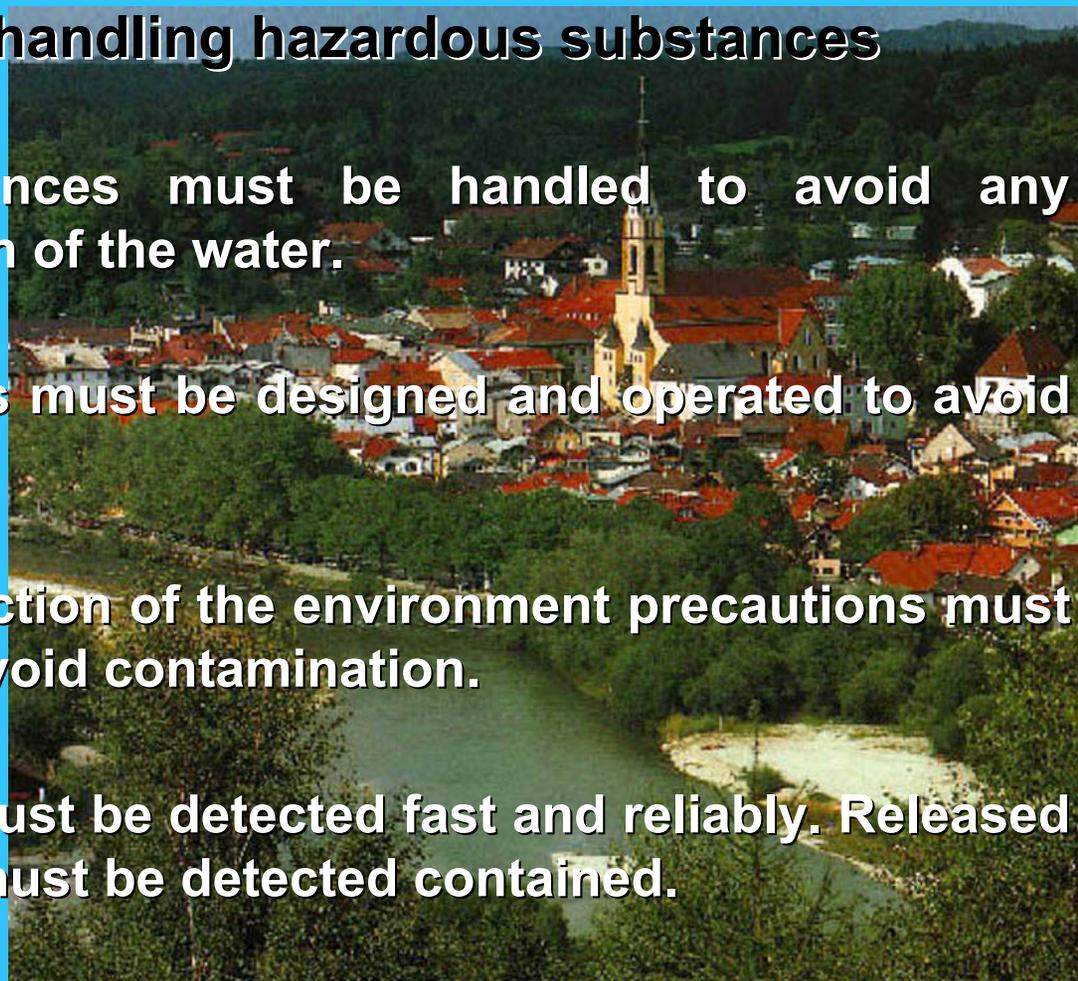
□• Costal waters



### 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.



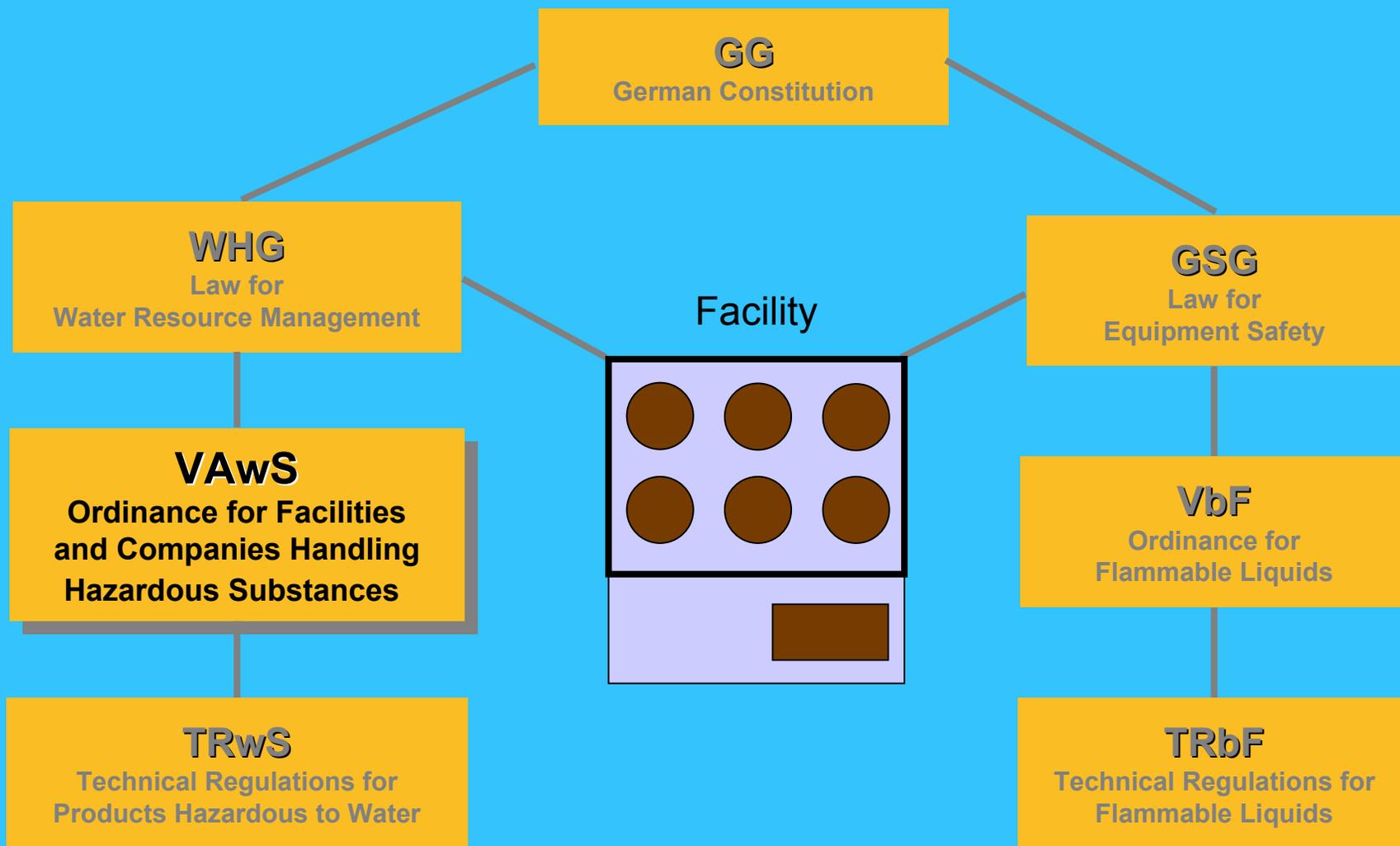
### 3. Content of the WHG

#### §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

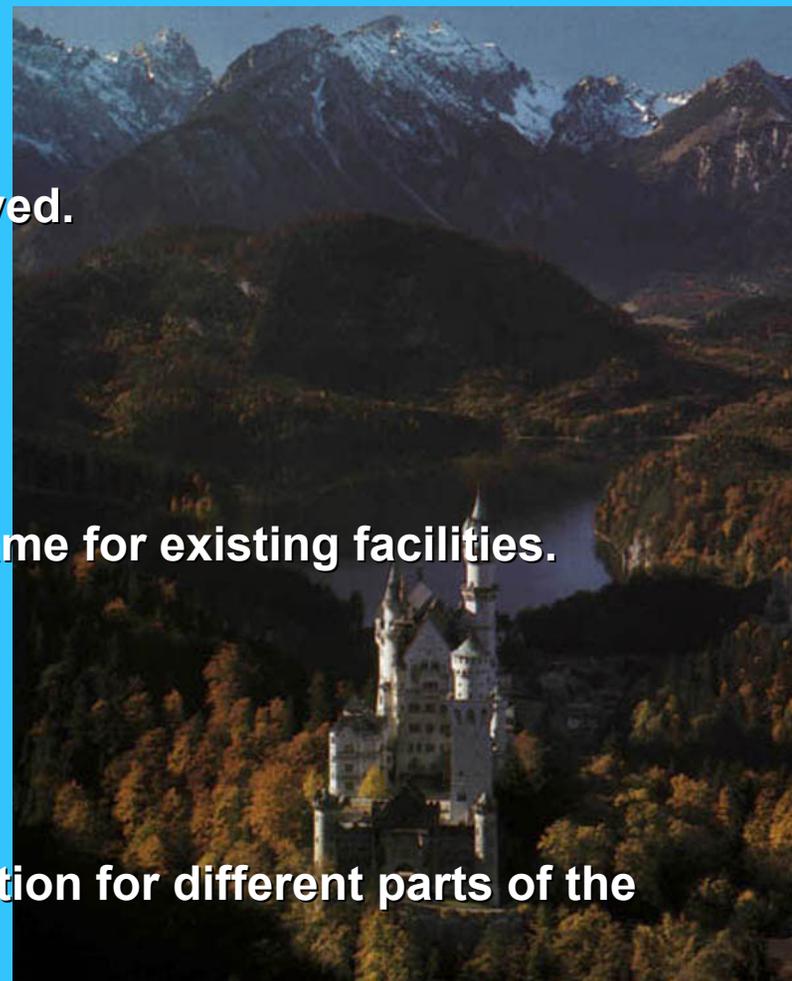
#### Temporary Regulations

Defines the compliance time frame for existing facilities.

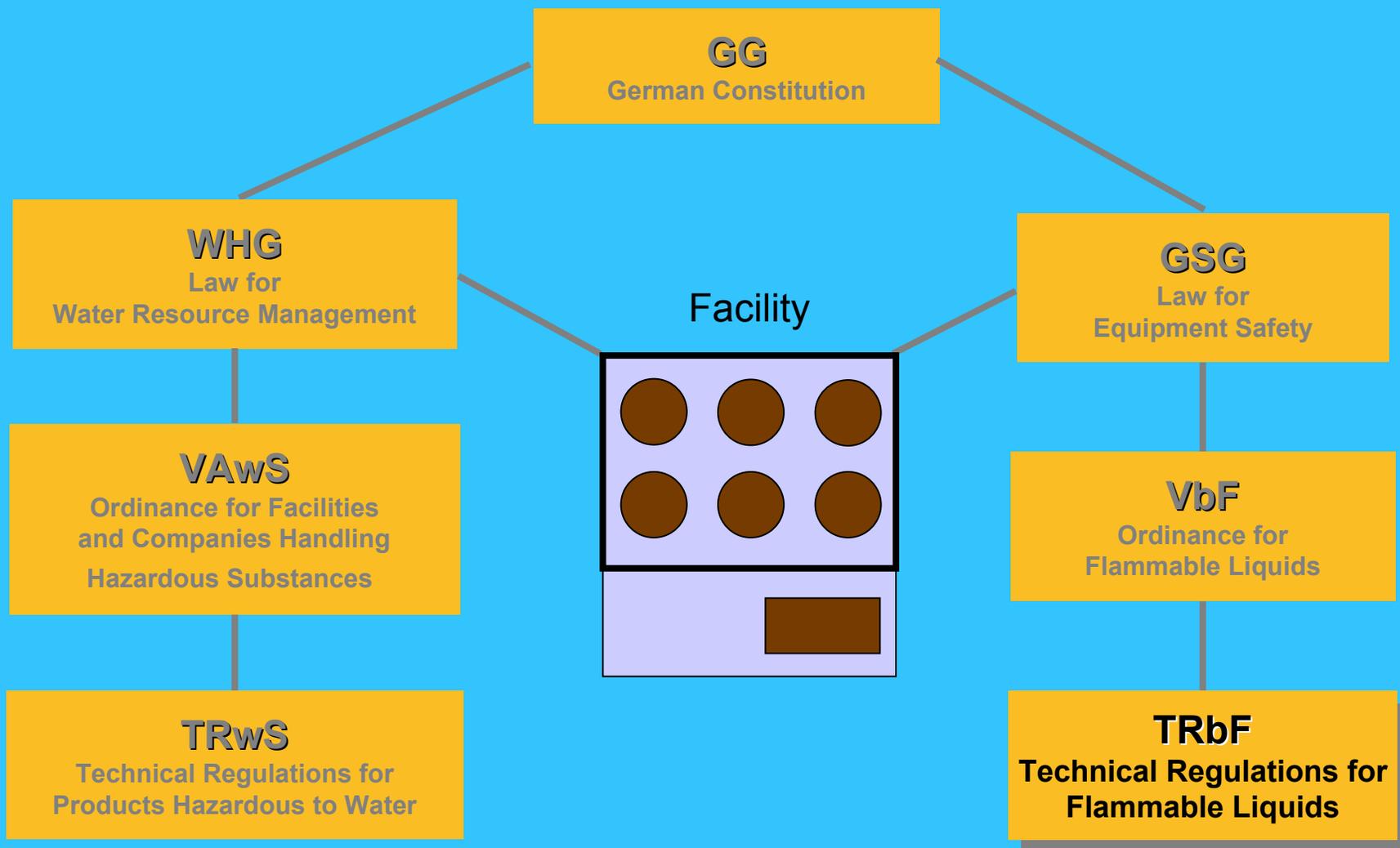
### Appendix

#### 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

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**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:

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