



Advance Reference Material (ARM)

June 2008





Table of Contents

1	Introduction.....	4
2	Fundamentals for the IRRS mission Germany 2008	5
2.1	Objectives and scope of the Mission	5
2.2	Federal System in Germany.....	6
2.3	Description of the authorities BMU and UM BW.....	11
2.3.1	Description of the BMU	11
2.3.2	Description of the UM BW	13
2.3.3	IRRS Team Germany	15
2.4	Nuclear Power in Germany	17
2.4.1	Nuclear energy use in the Federal Republic of Germany.....	17
2.4.2	Nuclear Power Plants in Baden-Württemberg.....	26
3	Self-assessment report.....	29
3.1	Self-assessment: approaches	29
3.1.1	BMU approach	29
3.1.2	UM BW approach.....	30
3.2	Questionnaires	32
3.2.1	Module 1: Legislative and governmental responsibilities	32
3.2.2	Module 2: Responsibilities and functions of the regulatory body.....	62
3.2.3	Module 3: Organisation of the regulatory body – Answers BMU	83
3.2.4	Module 3: Organisation of the regulatory body – Answers UM BW	99
3.2.5	Module 4: Authorization by the regulatory body	117
3.2.6	Module 5: Review and assessment.....	128
3.2.7	Module 6: Inspection and enforcement	134
3.2.8	Module 7: Development of regulations and guides	154
3.2.9	Module 8: Management system – Answers BMU.....	159
3.2.10	Modul 8: Management system – Answers UM BW	200
3.3	Self-assessment results	243
3.3.1	Brief reports on the modules	243
3.3.1.1	Brief report on Module I - Legislative and Governmental Responsibilities	243
3.3.1.2	Brief report on Module II - Responsibilities and functions of the Regulatory Body	245
3.3.1.3	Brief report on Module III – Organisation of the Regulatory Body (Report BMU).....	250
3.3.1.4	Brief report on Module III – Organization of the Regulatory Body (Report UM BW)	252



3.3.1.5	Brief report on Module IV – Authorization.....	256
3.3.1.6	Brief report on Module V - Review and Assessment	259
3.3.1.7	Brief report on Module VI - Inspection and Enforcement.....	264
3.3.1.8	Brief report on Module VII - Development of Regulations and Guides.....	267
3.3.1.9	Brief report on Module VIII – Management System for the Regulatory Body (Report BMU).....	270
3.3.1.10	Brief report on Module VIII – Management System for the Regulatory Body (Report UM BW)	273
3.3.2	Action Plans	275
3.3.2.1	Action Plan BMU.....	275
3.3.2.2	Action Plan UM BW.....	280
3.3.3	Regulatory Policy Issues.....	284
3.3.3.1	Human resources and knowledge management.....	284
3.3.3.2	Use of insights from operating experience feedback (OEF) in the regulatory process	285
3.3.3.3	Enhancing regulatory effectiveness and competence	286
3.3.3.4	Ageing management of NPPs.....	287
3.3.3.5	Management of safety.....	287
4	Further documentation	288
4.1	General Reference Material	288
4.2	Reference Material with respect to BMU	290
4.3	Reference Material with respect to UM BW.....	292
5	List of Abbreviations	293
6	List of German organisations and institutions (hyperlinks)	298



1 Introduction

From 7 until 19 September 2008, an IRRS Mission will take place in Germany. In the run-up to this Mission, preparatory meetings were held from 4 until 6 November 2007 and from 8 until 9 May 2008. The preparatory documents (advance reference material, ARM) according to Chap. 4.4.3.1, 3rd item in combination with Annex 3 of the IRRS Guidelines are presented and described in this report, which is divided into 4 Chapters. Chapters 1 to 3 give a introduction to the Germany system of nuclear power plant supervision including the self-assessment report. Chapter 4 contains all further documents.

Following this first "Introduction" chapter, which describes the contents and structure of the report, the fundamentals for the IRRS Mission are presented in [Chapter 2](#). [Chapter 2.1](#) deals with the objectives and the scope of the IRRS Mission to Germany. [Chapter 2.2](#) describes the federal structure and the political system in Germany. Based on the federal structure of the German state, on which the division of authority between the Federation (Bund) and the federal states (Länder) is founded, the two authorities participating for Germany in the Mission are introduced in [Chapter 2.3](#). These are at federal level the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and at Länder level the Baden-Wurttemberg Ministry of the Environment. The nuclear power plants in Germany are described in [Chapter 2.4](#).

[Chapter 3](#) contains the self-assessment report. In [Chapter 3.1](#), the approaches chosen by the BMU and the UM BW for carrying out the self-assessment process are presented. [Chapter 3.2](#) contains the answers to the questionnaire according to Chapter 3.2.2 in combination with Appendix 2 of the IRRS Guidelines. The results of the self-assessment are presented in [Chapter 3.3](#). Chapter 3.3 is divided into three parts: a first part in which short reports are given on each of the 8 modules, a second part presenting the Action Plans of BMU and UM BW, and a third part containing the fundamental issues (policy issues) that are relevant and of interest from the German point of view.



In [Chapter 4](#), all further documents are listed which from the point of view of the host country and considering Appendix 3 of the IRRS Guidelines are suitable and necessary for preparing the Mission.

Chapters 1 to 3 of this report are available both in print and electronically. The further documentation listed in Chapter 4 is only available electronically. In the electronic version, the material is conveniently hyperlinked in a way that handling will be as simple as possible and the relation between the different documents becomes clear.

2 Fundamentals for the IRRS mission Germany 2008

2.1 Objectives and scope of the Mission

By inviting the IAEA to carry out an IRRS Mission, Germany avows itself to its responsibility to protect humans in Germany and abroad against the hazards involved in the peaceful use of nuclear power.

The objective of the IRRS Mission is the continual improvement of the supervision and regulatory control of the safety of nuclear power plants in Germany on the basis of Federal State administration on behalf of the Federal Government under the currently prevailing conditions, i.e. the phase-out of nuclear power for electricity generation, the ageing of the nuclear installations, and the deregulation of the electricity market. The current Federal Government has no plans to change the basic structure of nuclear administration in Germany, i.e. the division of functions between federal and Länder authorities. Nevertheless, the effectiveness of the Regulatory Body in Germany is to be further developed and optimised. The IRRS Mission planned for 2008 is to contribute to this optimisation.

The scope of the Mission will cover the supervision of the safety of nuclear power plants by the regulatory bodies as represented by the federal authorities and those of the Land of Baden-Württemberg, also including radiological aspects in nuclear power plants, on the basis of Modules I to VIII of the IRRS Guideline.



The Mission will therefore mainly take place at the Federal Environment Ministry's location in Bonn and at the Baden-Württemberg Ministry of the Environment in Stuttgart. It will also include talks with other official bodies and organisations, such as the Federal Office for Radiation Protection (BfS), the Reactor Safety Commission (RSK), Gesellschaft für Anlagen- und Reaktorsicherheit (GRS), the Nuclear Safety Standards Commission (KTA), the competent Technical Inspection Agency (TÜV), the International Commission on Nuclear Technology (ILK) and the plant operators. A visit to a nuclear power plant will also be organised.

The Mission is also to review some generic "Regulatory Policy Issues" relevant to the German system of nuclear regulatory supervision and make corresponding recommendations. During the self-assessment process, 5 of these important issues were identified. These are described in detail in [Chapter 3.3.3](#).

2.2 Federal System in Germany

The German constitution (basic law) states that Germany is a federal republic.

Germany comprises 16 federal states (Länder). The German federalism can be described as an alliance of member states in order to form one national state where the individual members still retain the quality of states. The 16 Länder in Germany are characterised by

- ⇒ own Länder constitutions,
- ⇒ own elections,
- ⇒ parliaments,
- ⇒ governments,
- ⇒ own competences from the federal constitution (basic law)





The implementation of a federal system in Germany has historical reasons. After World War II the allies decided to reconstitute Germany as a federal republic with strong Länder authorities. The basic idea was to divide the powers of the state for the purpose of preventing any further abuse of them. For this reason a complex system of power division in two directions was established in Germany. The classical division of powers among the legislature, the executive and the judiciary, the so called horizontal division of power, well known since the times of John Locke and Charles Montesquieu, is complemented by a vertical division of power between the federation (Bund) and the federal states (Länder). The matrix in the figure below shows the principle division of powers, horizontal as well as vertical.

Division of powers

	Legislature	Executive	Judiciary
Bund	Parliament „Bundestag“	Government „Bundes- regierung“	Federal Courts
Länder	Parliament „Landtag“	Government „Landes- regierung“	Länder Courts

In the [German basic law](#) it is stated which legislative and which executive powers the Bund and the Länder have. Generally speaking the Bund has the power of legislation, whereas the Länder have the power to execute the law (the power of administration).



Länder



Bund

However there is a complex system of mutual checks and balances between Bund and Länder within which Bund and Länder work together. A special feature of the German federalism is that the federal states participate directly in the legislative decisions of the federation. This is done by the federal council, the Bundesrat, a “second chamber” which consists of Länder members and represents the 16 Länder on the federal level. For example the atomic energy act was enacted with consent of the federal council. It is an element in the area of “Legislature”.

Division of powers (regarding nuclear energy)

	Legislature	Executive	Judiciary
Bund	Parliament „Bundestag“ Enacting of the Atomic Energy Act	Government „Bundesregierung“	Federal Courts
Länder	Parliament „Landtag“	Government „Landesregierung“ Execution of the Atomic Energy Act	Länder Courts

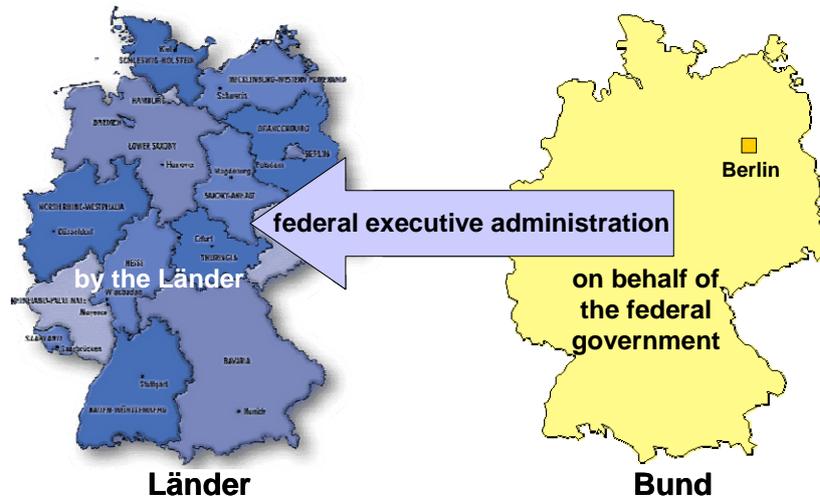


Furthermore ordinances and general administrative provisions need to be consented by the federal government and the federal council.

Another element of checks and balances within the area of “Executive”, is the enforcement of the atomic energy act with federal supervision and not by the own competence of the Länder only.

<i>checks and balances</i> <i>(regarding nuclear energy)</i>	Legislature	Executive	Judiciary
Bund	Parliament „Bundestag“ <i>Enacting of the Atomic Energy Act with consent of the federal council „Bundesrat“</i>	Government „Bundesregierung“	Federal Courts
↕	↕	↕	↕
Länder	Parliament „Landtag“	Government „Landesregierung“ <i>Execution of the Atomic Energy Act with federal supervision</i>	Länder Courts

The execution of the [atomic energy act](#) by the Länder with supervision of the Bund is called “federal executive administration”, which means administration by the Länder on behalf of or on commission of the federation. The Bund has the power to give instructions to the Länder, both, regarding lawfulness and appropriateness of actions to be taken, but the administrative actions can only be carried out by the Länder authorities.



Consequently there are competent authorities on the two levels, the federal level and the Länder level with different functions and rights. On the federal level as well as in the case of Baden-Württemberg on the Länder level, the ministries of environment are the competent authorities.





2.3 Description of the authorities BMU and UM BW

2.3.1 Description of the BMU

At federal level, the Federal Environment Ministry in general and its Directorate General RS in particular is responsible i.a. for the tasks in connection with nuclear safety. The Directorate General RS is divided into three Directorates. Directorate RS I is responsible for the safety of nuclear installations and consists of 7 Divisions, each with its own scope of functions. Directorate RS II is responsible for radiological protection and consists of 6 Divisions, while Directorate RS III is responsible for nuclear fuel supply and waste management and consists of 4 Divisions.

In accordance with the scope of the Mission, the IRRS counterparts of the BMU come from the following Divisions of Directorate RS I:

- Nuclear Legislation, Länder Committee for Nuclear Energy, Technical Supervision of the Federal Office for Radiation Protection, Administration of GRS Holdings (AG RS I 1)
- Federal Supervision of Nuclear Power Plants, Fundamental Aspects of Nuclear Safety (AG RS I 3)
- Nuclear Regulatory Framework, Multilateral Regulatory Cooperation (RS I 7).

(see also the following chart "BMU Organisation")



Bundesministerium
für Umwelt, Naturschutz
und Reaktorsicherheit

**Federal Minister
for the Environment,
Nature Conservation
and Nuclear Safety**



S. Gabriel

**Parliamentary
State Secretary**



A. Klug

**Permanent
State Secretary**



M. Machnig

**Parliamentary
State Secretary**



M. Müller

**Directorate-General RS
Safety of Nuclear Installations,
Radiological Protection,
Nuclear Cycle**



MinDir W. Renneberg

**Directorate RS I
Safety of Nuclear Installations**

MinDirig D. Majer

**Directorate RS II
Radiological Protection**

MinDirig Dr. K. E. Huthmacher

**Directorate RS III
Nuclear Fuel Cycle**

MinDirig A. Spinczyk-Rauch

Working Group RS I 1

**Nuclear Legislation,
Länder Committee for
Nuclear Energy,**

**MinR Dr. A. Vorwerk
RDir'in U. Adenauer
RD Dr. S. Schneider**

Working Group RS I 3

**Federal Supervision of
Nuclear Power Plants,
Fundamental Aspects of
Nuclear Safety**

**MinR G. Niehaus
B. Fischer**

Division RS I 5

**Strategic Concept and
Maintenance of
Competence**

MinR Dr. M. Hertrich

Division RS I 7

**Nuclear Rules and
Regulations, Multilateral
Regulatory Co-operation**

RD'in Dr. C. Wassilew

Division RS I 2

**Coordination,
Technical Supervision
of the Federal Office
for Radiation Protection,**

MinR B. Warnat

Division RS I 4

**International Aspects of
Nuclear Safety,
Radiological Protection
and the
Nuclear Fuel Cycle**

RDir'in Dr. M. Palm

Division RS I 6

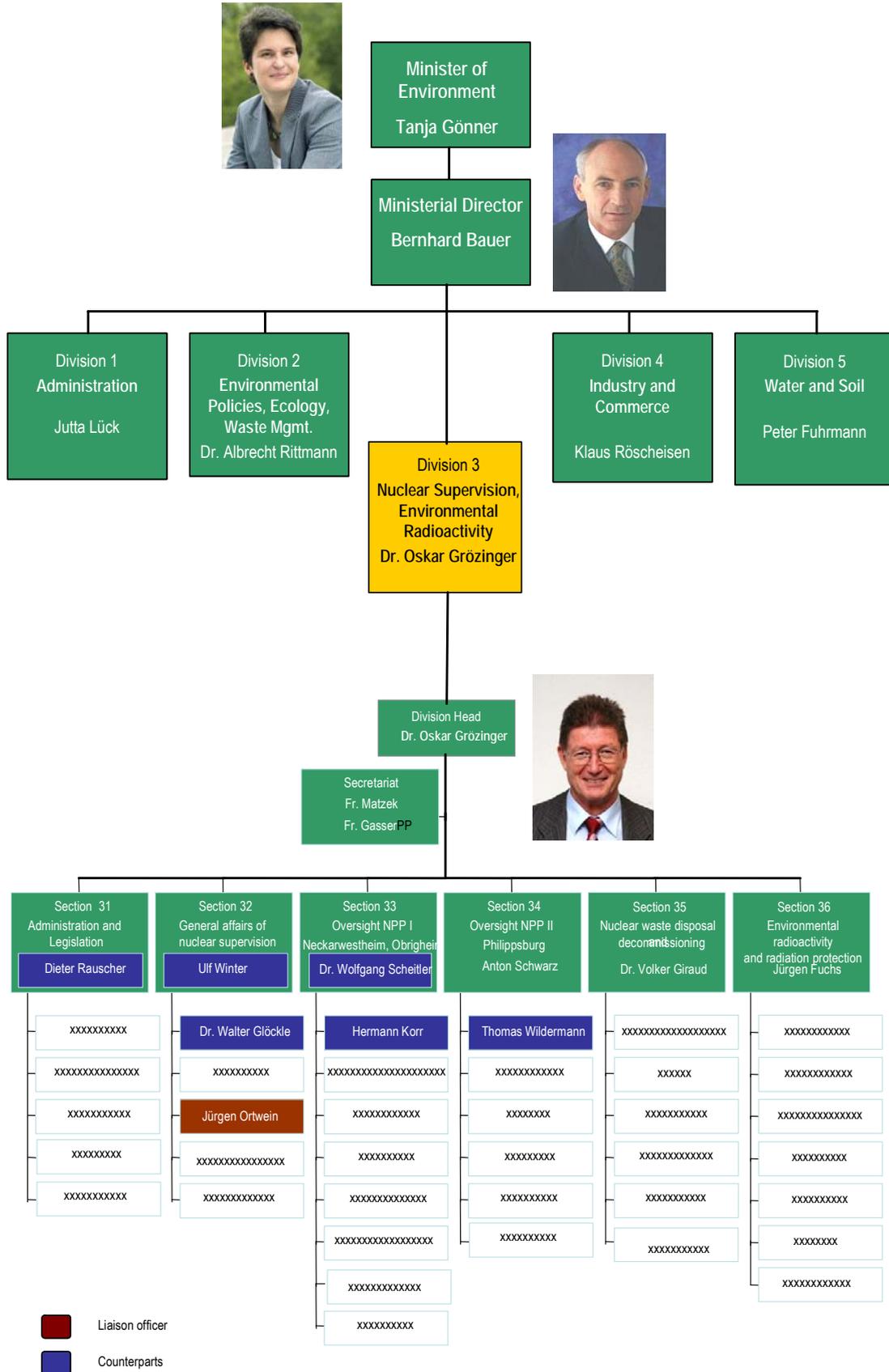
**Safety Provisions for
Nuclear Installations,
Technical Competence**

MR W. Voß



2.3.2 Description of the UM BW

In Germany, the individual federal states (Länder) are responsible for the licensing and supervision of the nuclear power plants. In Baden-Württemberg, these functions are fulfilled by Division 3 "Nuclear Supervision, Environmental Radioactivity" at the Environment Ministry (see chart). This Division is subdivided into 6 Sections. Two of these Sections are responsible for the nuclear power plants sites of Philippsburg, Neckarwestheim and Obrigheim. These Sections are in charge of the main regulatory functions of authorisation (Module IV), review and assessment (Module V) and inspection and enforcement (Module VI) to be performed by the Länder authority. The majority of the staff of the Section have a technical or scientific background, while some are legal or administrative experts. The chart also shows in which Sections the Mission counterparts are positioned. Further details on the organisation of the UM BW are provided in [Chapter 3.3.1.4](#) "Brief report on Module III – UM BW".



as at 24.4.2008



2.3.3 IRRS Team Germany

Liaison Officer

Majer



Head of Division

Renneberg



Head of Division

Grözinger



Liaison Officer

Ortwein



BMU Counterparts

Schneider



Modul I

Fischer



Modul II

Niehaus



Modul III

Ludwig



Modul IV

Winter



Modul I

Winter



Modul II

Glöckle



Modul III

Scheitler



Modul IV

Engelhardt



Modul V

Sperling



Modul VI

Wassilew



Modul VII

Vorwerk



Modul VIII

Korr



Modul V

Wildermann



Modul VI

Rauscher



Modul VII

Glöckle



Modul VIII



Organisation BMU – UM BW

	BMU	UM BW
Liaison Officer	Majer 0228-305-2950	Ortwein 0711-126-2614
Module	Counterparts*	
Legislative and Governmental Responsibilities (Module I) Questions 1-44	Dr. Schneider 0228-305-2818	Winter 0711-126-2586
Responsibilities and Functions of the Regulatory Body (Module II) Questions 45 – 80	Fischer 0228-305-2938	Winter 0711-126-2586 Supported by Dr. Kern
Organization of the Regulatory Body (Module III) Questions 81 - 105	Niehaus 0228-305-2850	Dr. Glöckle 0711-126-2607 Supported by Dr. Stratmann
Authorization (Module IV) Questions 106 - 118	Ludwig 0228-305-2852	Dr. Scheitler 0711-126-2596 Supported by Dr. Flaskamp
Review and Assessment (Module V) Questions 119 - 125	Engelhardt 0228-305-2853	Korr 0711-126-2615 Supported by Dr. Löffert
Inspection and Enforcement (Module VI) Questions 126 - 149	Sperling 0228-305-4260	Wildermann 0711-126-2570 Supported by Dr. Kern
Development of Regulations and Guides (Module VII) Questions 150 - 156	Dr. Wassilew 0228-305-2980	Rauscher 0711-126-2621
Management System for Regulatory Body (Module VIII) Questions 157 - 248	Dr. Vorwerk 0228-305-2812	Dr. Glöckle 0711-126-2607 Supported by Carius

* leading counterpart in white, co-counterpart in grey

Technical support:

BMU: Dr. Wassilew Tel. 0228 305 2980, Dr. Schielke Tel. 0228 305 2982

UM BW: Winter Tel. 0711 126 2586, Ortwein Tel. 0711 126 2614

Support by BfS: Dr. Klönk Tel. 01888 333 1530

Support by GRS: Diepolder Tel. 0221 2068 947

Support by TÜV Süd: Krüger Tel. 0711 7005 812

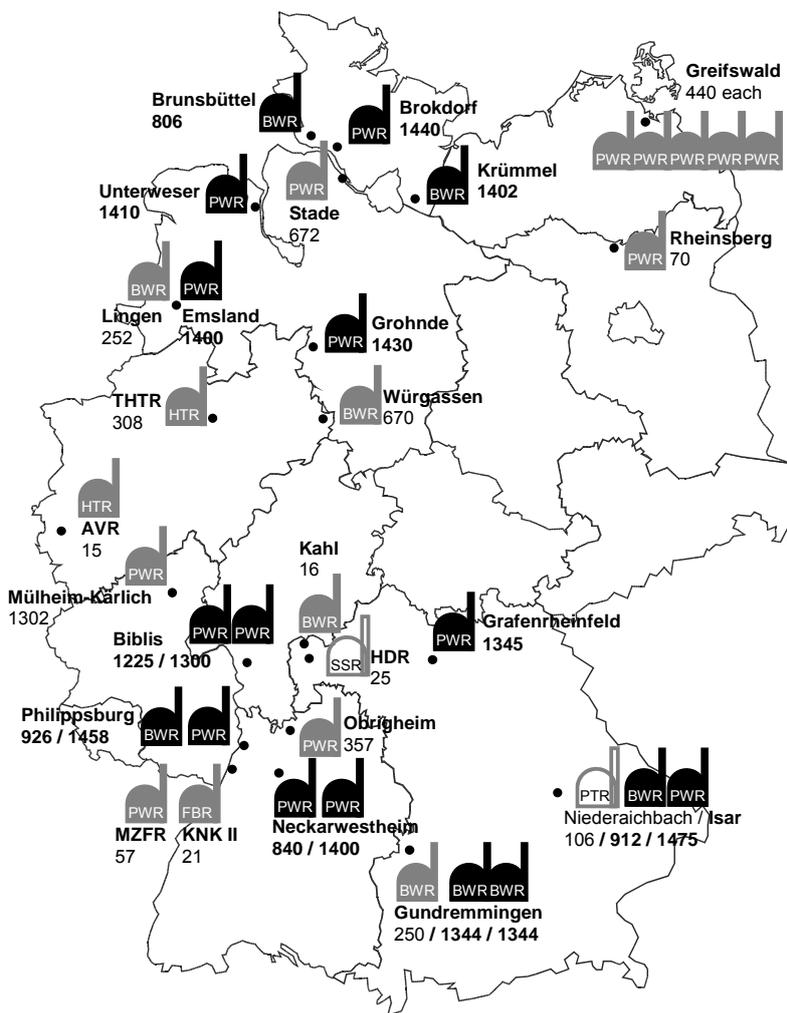


2.4 Nuclear Power in Germany

2.4.1 Nuclear energy use in the Federal Republic of Germany

In Germany, 17 nuclear power plants are in operation at 12 sites, with a gross total design electrical rating of 21,457 MW.

Nuclear power plants in Germany



05/2007

Legend			
PWR	Pressurized Water Reactor	in operation	
BWR	Boiling Water Reactor		
FBR	Fast Breeder Reactor		
HTR	High Temperature Reactor		
PTR	Pressure Tube Reactor		
SSR	Superheated Steam-Cooled Reactor	shut down	
			completely dismantled

Numbers indicate gross capacity [MWe]



At the end of this chapter, the German nuclear power plants currently in operation and those permanently shut down are listed.

Current situation of nuclear energy use in the Federal Republic of Germany

The average annual production of a German nuclear power plant corresponds to the annual electricity consumption of approx. 2.5 million German homes.

From the beginning of nuclear energy use in Germany in 1961 until 2007, more than 4,250 billion kWh of electricity were produced in nuclear power plants.

Since 1988, nuclear energy has been contributing about one third to public electricity supply and around 12 % to the total primary energy supply in Germany. In 2007, the German nuclear power plants generated 140.5 billion kWh of electricity. Time and energy availability was 76 % and 76.3 %, respectively.

Average availabilities of the German nuclear power plants

Year	Time availability %	Energy availability %	Energy utilisation %
2007	76.0	76.3	---
2006	91.1	90.8	89.1
2005	88.8	88.0	86.3
2004	89.8	89.2	87.4
2003	87.7	87.0	84.3
2002	85.7	86.0	83.8

Time availability: available operating time / calendar time

Energy availability: possible energy production / nominal capacity

Energy utilisation: actual energy production / nominal capacity

The revised [Atomic Energy Act](#) of 22 April 2002, which is based on the Agreement between the Federal Government and the electricity utilities of 14 June 2000 (signed on



11 June 2001), established new boundary conditions for the use of nuclear energy in Germany.

The phase-out of the use of nuclear energy for the commercial generation of electricity in a structured manner instead of its promotion has become one of the new purposes of the amended [Atomic Energy Act](#) (AtG). According to the stipulations of the AtG, the further use of nuclear energy for the commercial generation of electricity is only accepted for a limited period due to the risks involved, despite the internationally acknowledged high level of safety of the German plants. The need to phase out the use of nuclear energy in a structured manner arose for the German Bundestag from a re-assessment of the risks involved and the knowledge gained worldwide since the beginning of the use of nuclear power for electricity generation regarding

- the operation of nuclear power plants,
- the disposal of radioactive waste,
- the reprocessing and
- the misuse of nuclear fuels.

The Agreement between the Federal Government and the electricity utilities for the gradual phase-out of the operation of the nuclear power plants is based on an average operating lifetime of 32 years.

The Agreement affirms that a high level of safety of the nuclear power plants according to international standards will continue to be guaranteed during the remaining operating period.

On the basis of a standard lifetime of 32 years, a certain electricity volume was defined for each nuclear power plant which it was allowed to produce starting from 01/01/2000 until its decommissioning (residual electricity volume). To calculate these residual electricity volumes, the five highest annual production figures between 1990 and 1999 were applied for each NPP, with an extra 5.5 % added for each plant.

Under certain circumstances, electricity volumes (production rights) may be transferred from one nuclear power plant to another. The licence to operate a nuclear power plant

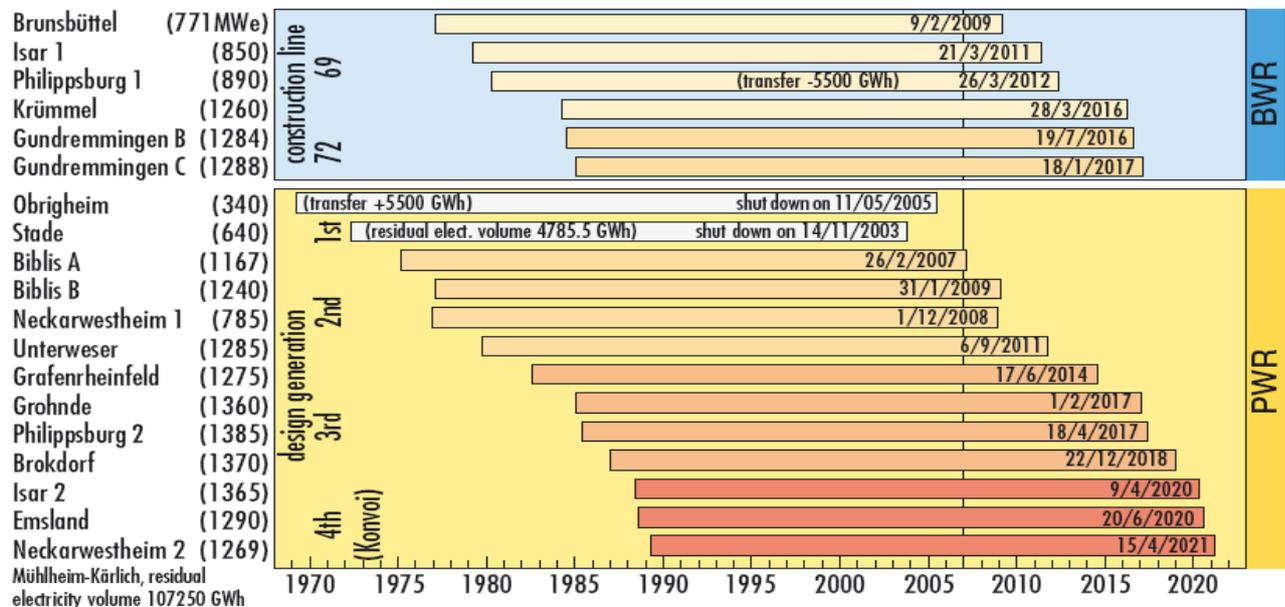


expires once the electricity volume originally specified for the plant concerned or the increased volume following a transfer of production rights has been produced.

The table below shows the projected deadlines for the closure of the different plants on the basis of the residual electricity volumes laid down in the Act for each individual nuclear power plant. The actual dates for the termination of power operation are, however, not yet definite. They may still shift depending on the volumes of electricity generated. For example, a capacity increase may lead to an earlier final shutdown, while longer standstill periods may lead to the final shutdown being postponed.

Since the German Atomic Energy Act does not specify any fixed dates for the termination of electricity generation, it is only possible to make a forecast of the expected dates of the termination of electricity generation on the basis of the residual volumes specified in the Atomic Energy Act and the volumes of electricity already produced by the nuclear power plants at a certain reference date.

NPP in Germany - Start of Commercial Power Operation, Date of 32 Years of Operation and Date of Shut Down Respectively





Operating nuclear power plants in Germany

	Nuclear power plants in operation Site	a) Licensee b) Manufacturer c) Major shareholder	Type Gross- capacity MWe	Constr . line	a) Date of application b) First criticality
1	Biblis A (KWB A) Biblis Hessen	a) RWE Power b) KWU c) RWE Power 100%	PWR 1225	2	a) 11/06/1969 b) 16/07/1974
2	Biblis B (KWB B) Biblis Hessen	a) RWE Power b) KWU b) RWE Power 100%	PWR 1300	2	a) 03/05/1971 b) 25/03/1976
3	Neckarwestheim 1 (GKN 1) Neckarwestheim Baden-Württemberg	a) EnBW Kernkraft (EnKK) b) KWU c) EnKK 98.45%	PWR 840	2	a) 02/04/1971 b) 26/05/1976
4	Brunsbüttel (KKB) Brunsbüttel Schleswig-Holstein	a) Kernkraftwerk Brunsbüttel b) AEG/KWU c) Vattenfall Europe Nuclear Energy 66.7%	BWR 806	69	a) 10/11/1969 b) 23/06/1976
5	Isar 1 (KKI 1) Essenbach Bayern	a) E.ON Kernkraft b) KWU c) E.ON Kernkraft 100%	BWR 912	69	a) 25/06/1971 b) 20/11/1977
6	Unterweser (KKU) Esenshamm Niedersachsen	a) E.ON Kernkraft b) KWU c) E.ON Kernkraft 100%	PWR 1410	2	a) 07/04/1971 b) 16/09/1978
7	Philippsburg 1 (KKP 1) Philippsburg Baden-Württemberg	a) EnBW Kernkraft (EnKK) b) KWU c) EnKK 100 %	BWR 926	69	a) 20/02/1970 b) 09/03/1979
8	Grafenrheinfeld (KKG) Grafenrheinfeld Bayern	a) E.ON Kernkraft b) KWU c) E.ON Kernkraft 100%	PWR 1345	3	a) 07/06/1973 b) 09/12/1981
9	Krümmel (KKK) Krümmel Schleswig-Holstein	a) Kernkraftwerk Krümmel b) KWU c) Vattenfall Europe Nuclear Energy 50 % E.ON Kernkraft 50%	BWR 1402	69	a) 18/02/1972 b) 14/09/1983
10	Gundremmingen B (KRB B) Gundremmingen Bayern	a) Kernkraftwerk Gundremmingen b) KWU c) RWE Power 75%	BWR 1344	72	a) 15/03/1974 b) 09/03/1984



Operating nuclear power plants in Germany

	Nuclear power plants in operation Site	a) Licensee b) Manufacturer c) Major shareholder	Type Gross- capacity MWe	Constr. line	a) Date of application b) First criticality
11	Grohnde (KWG) Grohnde Niedersachsen	a) Gemeinschaftskernkraftwerk Grohnde b) KWU c) E.ON Kernkraft 83.3%	PWR 1430	3	a) 03/12/1973 b) 01/09/1984
12	Gundremmingen C (KRB C) Gundremmingen Bayern	a) Kernkraftwerk Gundremmingen b) KWU c) RWE Power 75%	BWR 1344	72	a) 15/03/1974 b) 26/10/1984
13	Philippsburg 2 (KKP 2) Philippsburg Baden-Württemberg	a) EnBW Kernkraft (EnKK) b) KWU c) EnKK 100 %	PWR 1458	3	a) 24/06/1975 b) 13/12/1984
14	Brokdorf (KBR) Brokdorf Schleswig-Holstein	a) E.ON Kernkraft b) KWU c) E.ON Kernkraft 80%	PWR 1440	3	a) 12/03/1974 b) 08/10/1986
15	Isar 2 (KKI 2) Essenbach Bayern	a) E.ON Kernkraft b) KWU c) E.ON Kernkraft 75%	PWR 1475	4 Konvoi	a) 13/02/1979 b) 15/01/1988
16	Emsland (KKE) Lingen Niedersachsen	a) Kernkraftwerke Lippe-Ems b) KWU c) RWE Power 87.5%	PWR 1400	4 Konvoi	a) 28/11/1980 b) 14/04/1988
17	Neckarwestheim 2 (GKN 2) Neckarwestheim Baden-Württemberg	a) EnBW Kernkraft (EnKK) b) KWU c) EnKK 98.45%	PWR 1400	4 Konvoi	a) 27/11/1980 b) 29/12/1988



Nuclear power plants permanently shut down

	Nuclear power plants permanently shut down *) Site	a) Last licensee b) Manufacturer	Type Gross capacity MWe	a) First criticality b) Date of shutdown
1	Versuchsatomkraftwerk (VAK) Kahl Bayern	a) Versuchsatomkraftwerk Kahl b) AEG/General Electric	BWR 16	a) 13/11/1960 b) 25/11/1985
2	Mehrzweckforschungsreaktor (MZFR) Karlsruhe Baden-Württemberg	a) Kernkraftwerk Betriebsgesellschaft mbH b) Siemens/KWU	Pressurised heavy water reactor 57	a) 29/09/1965 b) 03/05/1984
3	Rheinsberg (KKR) Rheinsberg Brandenburg	a) Energiewerke Nord b) VEB Kernkraftwerksbau Berlin	ÜWR (VVER) 70	a) 11/03/1966 b) 01/06.1990
4	Gundremmingen A (KRB A) Gundremmingen Bayern	a) Kernkraftwerk RWE-Bayernwerk b) AEG/General Electric	BWR 250	a) 14/08/1966 b) 13/01/1977
5	Atomversuchskraftwerk (AVR) Jülich Nordrhein-Westfalen	a) Arbeitsgemeinschaft Versuchsreaktor b) BBC/Krupp Reaktorbau (BBK)	HTR 15	a) 26/08/1966 b) 31/12/1988
6	Stade (KKS) Stade Niedersachsen	a) E/ON Kernkraft b) KWU	PWR 672	a) 28/07/1967 b) 14/11/2003
7	Lingen (KWL) Lingen Niedersachsen	a) Kernkraftwerk Lingen b) AEG/KWU	BWR 252	a) 31/01/1968 b) 05/01/1977
8	Obrigheim (KWO) Obrigheim Baden-Württemberg	a) EnBW Kernkraft (EnKK) b) Siemens	PWR 357	a) 22/09/1968 b) 11/05/2005
9	Heißdampfreaktor (HDR) Großwelzheim Bayern	a) Forschungszentrum Karlsruhe b) AEG	Super heated steam-cooled reactor 25	a) 14/10/1969 b) 20/04/1971 fully dismantled
10	Würgassen (KWW) Würgassen Nordrhein-Westfalen	a) PreussenElektra b) AEG/KWU	BWR 670	a) 22/10/1971 b) 26/08/1994
11	Niederaichbach (KKN) Niederaichbach Bayern	a) Forschungszentrum Karlsruhe Kernkraftwerkbetrieb GmbH b) Siemens	Pressure tube reactor 106	a) 17/12/1972 b) 31/07/1974 fully dismantled



Nuclear power plants permanently shut down

	Nuclear power plants permanently shut down *) Site	a) Last licensee b) Manufacturer	Type Gross capacity MWe	a) First criticality b) Date of shutdown
12	Greifswald 1 (KGR 1) Lubmin Mecklenburg-Vorpommern	a) Energiewerke Nord b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 440	a) 03/12/1973 b) 18/12/1990
13	Greifswald 2 (KGR 2) Lubmin Mecklenburg-Vorpommern	a) Energiewerke Nord b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 440	a) 03/12/1974 b) 14/02/1990
14	Greifswald 3 (KGR 3) Lubmin Mecklenburg-Vorpommern	a) Energiewerke Nord b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 440	a) 06/10/1977 b) 28/02/1990
15	Kompakte natriumgekühlte Reaktoranlage (KNK II) Karlsruhe Baden-Württemberg	a) Kernkraftwerkbetriebs- gesellschaft b) Interatom	FBR 21	a) 10/10/1977 b) 23/08/1991
16	Greifswald 4 (KGR 4) Lubmin Mecklenburg-Vorpommern	a) Energiewerke Nord b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 440	a) 22/07/1979 b) 02/06/1990
17	Thorium-Hochtemperatur- reaktor (THTR 300) Hamm-Uentrop Nordrhein-Westfalen	a) Hochtemperatur Kernkraftwerk b) BBC/HRB/NUKEM	HTR 308	a) 13/09/1983 b) 29/09/1988
18	Mülheim-Kärlich (KMK) Mülheim-Kärlich Rheinland-Pfalz	a) RWE Power b) BBR	PWR 1302	a) 01/03/1986 b) 09/09/1988
19	Greifswald 5 (KGR 5) Lubmin Mecklenburg-Vorpommern	a) Energiewerke Nord b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 440	a) 26/03/1989 b) 30/11/1989
Projects stopped				
20	Greifswald 6 (KGR 6) Lubmin Mecklenburg-Vorpommern	a) Energiewerke Nord b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 440	a) b) Project stopped
21	Greifswald 7 (KGR 7) Lubmin Mecklenburg-Vorpommern	a) Energiewerke Nord b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 440	a) b) Project stopped
22	Greifswald 8 (KGR 8) Lubmin Mecklenburg-Vorpommern	a) Energiewerke Nord b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 440	a) b) Project stopped



Nuclear power plants permanently shut down

	Nuclear power plants permanently shut down *) Site	a) Last licensee b) Manufacturer	Type Gross capacity MWe	a) First criticality b) Date of shutdown
23	SNR 300 Kalkar Nordrhein-Westfalen	a) Schnell-Brüter Kernkraftwerks- gesellschaft b) INTERATOM /BELGONUCLEAIRE /NERATOOM	FBR 327	a) b) Project stopped 20/03/1991
24	Stendal A Stendal Sachsen-Anhalt	a) Altmark Industrie b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 1000	a) b) Project stopped
25	Stendal B Stendal Sachsen-Anhalt	a) Altmark Industrie b) VEB Kombinat Kraftwerksanlagenbau	PWR (VVER) 1000	a) b) Project stopped

*) decommissioned or shut down

2.4.2 Nuclear Power Plants in Baden-Württemberg

The Baden-Württemberg Ministry of the Environment is in charge of the licensing and supervision of the nuclear power plants at the Philippsburg, Neckarwestheim and Obrigheim sites. All these nuclear power plants are operated by EnBW Kernkraft GmbH.

At the Philippsburg site, there are two nuclear power plant units in operation. Unit 1 (KKP 1) is a boiling water reactor and has been operational since 1979. Unit 2 (KKP 2) is a pressurised water reactor that started operating in 1984. Further details are given in the illustration below.



Site: Philippsburg

- located on the river Rhine
- 2 NPPs
- 800 employees

Philippsburg 1

- boiling water reactor
- 930 MW
- start of operation: 1979

Philippsburg 2

- pressurised water reactor
- 1460 MW
- start of operation: 1984



At the Neckarwestheim site, there are two nuclear power plant units in operation. Unit 1 (GKN I) is a pressurised water reactor that started operating in 1976. Unit 2 (GKN II) is a pressurised water reactor and has been operational since 1989. Further details are given in the illustration below.



Site: Neckarwestheim

- located on the river Neckar
- 2 NPPs
- 800 employees

Neckarwestheim I

- pressurised water reactor
- 840 MW
- start of operation: 1976
- oldest reactor in operation

Neckarwestheim II

- pressurised water reactor
- 1400 MW
- start of operation: 1989
- most recent reactor in operation

The two units KKP 2 and GKN I were the subject of OSART Missions in 2004 and 2007, respectively. Both plants achieved very good results in the reviews.



At the Obrigheim site, a pressurised water reactor was operated until 2005; it is presently in its so-called post-operational phase. The decommissioning and dismantling licence required according to the Atomic Energy Act is being drafted. Dismantling is to be complete by 2020. Further details are given in the illustration below.



Site: Obrigheim

- located on the river Neckar
- 1NPP
- 200 employees

Obrigheim

- pressurised water reactor
- 340 MW
- start of operation: 1968
- end of operation: 2005
- post operational phase
- dismantling until 2020



3 Self-assessment report

3.1 Self-assessment: approaches

3.1.1 BMU approach

When it was agreed that Germany would subject itself to an IRRS Mission, the corresponding necessary activities to perform a self-assessment process were initiated at the BMU.

Starting in mid-2006, several workshops were conducted within the BMU. The self-assessment was performed on the basis of a strengths/weaknesses analysis. This involved the formulation and analysis of the expected standards, assessments and justifications in connection with the topics and contents specified by the IRRS questionnaire.

Following the commitment of the Land of Baden-Württemberg to take part in the Mission, the IAEA was invited on 17 April 2007 to carry out an IRRS Mission. The first meeting in this respect between the BMU Director General and the UM BW Division Head took place on 16 May 2007. At this meeting, the questionnaire from the IRRS Guideline was defined to be the basis of the self-assessment.

A series of further co-ordination talks was held between the two authorities, determining e.g. who would be in charge of answering which Modules (cf. [Chapter 2.3.3](#) - IRRS Team Germany). It was decided that the BMU would be in charge of giving first answers to Modules I, III, VII and VIII, while the UM BW was to be responsible for II, III, IV, V, VI und VIII (teams of respondents). The separate answering of the questions of Modules III and VIII is due to the autonomy of the two authorities.

In a second step, the answers were cross-checked by the respective other authority (teams of assessors) and cleared with the other party.



The answers provided in [Chapter 3.2](#) of the ARM are the results of this harmonisation process.

The answers to the questions of the Modules were assessed using the performance indicators (PI) provided in Appendix 7 of the IRRS Guideline. Wherever the assessment was 2 or worse, corresponding measures were added to an Action Plan. The designation BMU / UM BW in front of a PI indicates for which authority an improvement measure was added to the Action Plan in that particular case.

The Action Plans are provided in [Chapter 3.3.2](#).

3.1.2 UM BW approach

The self-assessment of the UM BW is based on two pillars. In 2006, the International Committee on Nuclear Technology (ILK) was commissioned to assess the nuclear oversight activities of the UM BW. To do this, the ILK chose a method that was largely based on the method of an IRRS Mission. Applying the procedures provided by the rules of the IAEA, the UM BW was reviewed by a team of experienced international experts, and the results of the assessment were published in a [final report](#) in the form of "good practices", "recommendations" und "suggestions".

The self-assessment that has now been carried out on the basis of the questionnaire of the IRRS "guidelines" represents the second pillar. This is seen as a consistent continuation of the chosen path of continual improvement, taking international experience into account. The questions in the Modules which due to the division of functions in Germany had to be dealt with mainly by the UM BW (see organisation chart in [Chapter 2.3.2](#)) were initially answered by the UM BW's own personnel. It has to be pointed out in this context that the questions in Modules III and VIII had to be answered by each authority separately owing to the special Germany situation of having two different, autonomous authorities. For each Module, a "team of respondents" was formed, consisting of two members of staff. When setting up these teams, special care was taken to ensure that they included one experienced and one younger member of staff. In this respect, this self-assessment was also recognised as an opportunity for



knowledge transfer. Following the presentation and agreement of the answers with the senior level of the Ministry, a second step involved the presentation of the answers to the colleagues at the BMU ("external assessors"). The resulting final answers are submitted to the IAEA Review Team (cf. [Chapter 3.2](#)).

For questions that were assessed with a Performance Indicator UM BW 2 (which means that the requirements are fulfilled in part and measures for improvement will be taken), improvement measures were added to the Action Plan of the UM BW (see [Chapter 3.3.2](#)). For questions with a BMU 2 assessment, improvement measures were added to the Action Plan of the BMU. The designations "UM BW" or "BMU" also indicate to whose fields of responsibility the measure applies. The Action Plan of the UM BW consistently also includes measures that were derived from the ILK review. As for the ILK review, some first measures have already been put into practice.

3.2 Questionnaires

3.2.1 Module 1: Legislative and governmental responsibilities

No	Question	Module 1: Legislative and governmental responsibilities
1.	<p>Has a legislative and statutory framework been established to regulate the safety of facilities and activities, including those as listed in GS-R-1 para 1.5 as appropriate?</p> <p>A legislative and statutory framework shall be established to regulate the safety of facilities and activities.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (1)</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes, the legislative and statutory framework covers all areas completely and at an appropriate level (constitution, act of law, statutory ordinance).</p> <p>The general framework for the assurance of the safety of the facilities and activities listed in GS-R-1 para. 1.5 is defined by the German constitution. According to Art. 73 para. 1 no. 14 GG, the Federation has the exclusive power to legislate the generation and use of nuclear energy for peaceful purposes, the construction and operation of facilities serving this purpose, the protection against hazards arising from a release of nuclear energy or ionising radiation, and the disposal of radioactive materials. Acts of law passed on the basis of this provision may stipulate according to Art. 87c, 85 GG with approval of the Bundesrat that they be executed by the Länder on behalf of the Federation. Sub-constitutional provisions relating to the supervision of nuclear facilities and activities are contained in the Atomic Energy Act. On its basis, further statutory provisions were decreed, as e.g. the ordinance relating to the protection against damage through ionising radiation (Radiation Protection Ordinance - StrlSchV).</p> <p>The requirements for the protection of the personnel and the population in connection with the activities mentioned in GS-R-1 1.5 including procedural provisions, sanctions and responsibilities are fully regulated in EURATOM law. Wherever it is not regulated by EU Regulation, EU law is implemented in national law.</p> <p>In Germany, legislation and execution have to observe the binding specifications from the European Communities legislation. In the area of radiation protection, these include the EURATOM Basic Safety Standards for the protection of the health of the population and the workers against the risks of ionising radiation, decreed on the basis of Article 30 ff. of the EURATOM Treaty. The use of ores, source materials and special fissile materials are</p>

No	Question	Module 1: Legislative and governmental responsibilities
	<p>subject to the controlling regime of the European Atomic Energy Community according to Articles 77 ff. of the EURATOM Treaty.</p> <p>Further details are given in the German CNS report 2008, p. 17-30.</p>	
2.	<p>Does the legislative and statutory framework clearly establish one or more regulatory authorities (collectively, the “Regulatory Body”) whose responsibilities cover the facilities and activities, including those listed in GS-R-1 para 1.5 as appropriate?</p> <p>A regulatory body shall be established and maintained which shall be effectively independent of organizations or bodies charged with the promotion of nuclear technologies or responsible for facilities or activities. This is so that regulatory judgements can be made, and enforcement actions taken, without pressure from interests that may conflict with safety.</p> <p>Legislation shall be promulgated to provide for the effective control of nuclear, radiation, radioactive waste and transport safety. This legislation shall establish a regulatory body with the authority outlined in para. 2.6;</p> <p><i>SS Ref.: GS-R-1 para 2.2 (2) and para 2.4 (4)</i></p> <p>Answer: Yes, there has to be clear formal allocation of duties and responsibilities to state authorities.</p> <p>§§ 22 ff. AtG define the responsibilities for the different tasks of the Atomic Energy Act. Here, different authorities - Federal Office of Economics and Export Control (BAFA), Federal Ministry of Finance or the customs authorities appointed by it, Federal Office for Radiation Protection (BfS), Federal Office of Administration, Luftfahrt-Bundesamt (German Aviation Authority), German Railway Authority, Federal Ministry of Defence - are allocated special tasks.</p> <p>The remaining supervisory tasks are fulfilled according to § 24 para 1 sentence 1 AtG by the Länder on behalf of the Federation. This means that in executing the Atomic Energy Act and its statutory ordinances, the Länder are subject to supervision by the Federation with regard to the legal compliance and appropriateness of their actions; they are subject to the directives issued by the Federation (Article 85 Basic Law). The licensing and supervisory authorities for nuclear facilities are the ministries of the Länder in which the facilities are located. The federal Regulatory authority is the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).</p> <p>Further details are given in the German CNS-report 2008, p. 32-35</p>	Assessment: 3

No	Question	Module 1: Legislative and governmental responsibilities
3.	<p>Is the Regulatory Body effectively independent of organizations and bodies charged with the promotion of nuclear technologies or responsible for facilities or activities, including those listed in GS-R-1 para 1.5 as appropriate?</p> <p>A regulatory body shall be established and maintained which shall be effectively independent of organizations or bodies charged with the promotion of nuclear technologies or responsible for facilities or activities. This is so that regulatory judgements can be made, and enforcement actions taken, without pressure from interests that may conflict with safety.</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body's reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (2) and para 4.1</i></p>	
	<p>Answer:</p> <p>Yes, the organisational structures and responsibilities of the Regulatory Body are structured and divided up such that there are no conflicting interests within the different working units and that technically unjustified influences are avoided.</p> <p>According to Article 8 (2) of the Convention on Nuclear Safety, the Federal Republic of Germany is obliged to ensure the organisational and structural separation of the state licensing and supervisory activities from the promotion or utilisation of nuclear energy.</p> <p>The licensing and supervisory authorities – at Federal as well as at Länder level – are state administration authorities. According to Article 20 para. 3 of the Basic Law, these authorities are bound to the law. Here, the priority is the requirement of the Atomic Energy Act to guarantee the necessary precaution against any damage resulting from the construction and operation of the facility on the basis of the state of the art in science and technology in the nuclear field.</p> <p>Regarding organisation, a distinction has to be made between the activities of the licensing and supervisory authorities at Länder level and the supervisory and directional powers of the Federation. At federal level, there are different ministries responsible for questions of nuclear safety on the one hand and on the other hand for issues relating to the energy industry (i.e. among other things the utilisation of nuclear energy).</p> <p>At Länder level, the separation principle of Article 8 (2) of the Convention is taken into account by the organisational structures realised in the different Länder. The effective separation of the competent authorities for the area of nuclear supervision and licensing from those that are also concerned with the utilisation of nuclear energy as part of the general energy policy or the promotion of the energy industry is guaranteed by the fact that different</p>	<p style="text-align: right;">Assessment: 3</p>

No	Question	Module 1: Legislative and governmental responsibilities
	<p>ministries or different organisational units of a ministry that are independent of each other are in charge of and responsible for these tasks.</p> <p>To support the authorities of the Regulatory Body in technical matters, authorised experts – from the private sector – may be consulted; the latter are in turn obliged to make impartial and qualified statements.</p> <p>The directional powers of the Federation derived from Articles 85 para. 3 and 87c of the Basic Law in questions of the licensing and supervision of nuclear facilities lie with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, which on its part does not fulfil any functions with regard to the utilisation of nuclear energy.</p> <p>Contrary to the authorities of the Regulatory Body, the nuclear power plant operators – being users and in some cases promoters of nuclear energy – are companies under private law. They are either electricity utilities themselves or have shareholders coming largely from the ranks of the German electricity utilities. These shareholders are again companies organised under public private law – usually joint-stock companies – without any influence on the safety-guided actions of the licensing and supervisory authorities.</p> <p>The BMU has examined beyond the international commitment of Article 8 para. 2 of the Convention on Nuclear Safety whether and to what extent the current system of nuclear administration may be optimised, also under the aspect of independence.</p> <p>According to the results of this study, the independence of the system of nuclear supervision is not an end in itself but only has to be demanded to an extent by which it promotes the relevance of competent assessment, renders nuclear supervision more effective, and thereby reduces the possibility of decisions that may not be fully safety-oriented.</p>	
4.	<p>Does legislation assign responsibility to the Regulatory Body for:</p> <ul style="list-style-type: none"> • authorization; • regulatory review and assessment; • inspection and enforcement; • establishing safety principles, criteria, regulations and guides? <p>Responsibility shall be assigned to the regulatory body for authorization, regulatory review and assessment, inspection and enforcement, and for establishing safety principles, criteria, regulations and guides.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (3)</i></p>	Assessment: 3
	<p>Answer: Yes, the Basic Law and the Atomic Energy Act regulate the responsibilities of the Regulatory Body (competent Länder Authority and the BMU) regarding</p>	

No	Question	Module 1: Legislative and governmental responsibilities
	<ol style="list-style-type: none"> 1. authorisation 2. regulatory review and assessment 3. inspection and enforcement 4. establishing safety principles, criteria, regulations and guides. <p>According to the provisions of the Atomic Energy Act, the licensing of facilities and activities (§ 3 AtG – import and export of nuclear fuels, § 4 AtG – carriage, § 6 AtG – storage, § 7 AtG – licensing of installations, § 9 AtG – treatment, processing and other utilisation, § 9b AtG – plan approval procedure for the construction and operation of facilities for the safekeeping and disposal of radioactive waste) lies with the authorities mentioned in question no.2.</p> <p>According to §§ 11, 12 AtG, more detailed safety standards may be defined and licensing requirements may be normalised for further materials in statutory ordinances, such as the Radiation Protection Ordinance, in order to fulfil the purposes mentioned in § 1 AtG (cf. §§ 7, 11, 15, 16, 19, 23 StrlSchV).</p> <p>To fulfil the purposes specified in the Atomic Energy Act, the licences according to § 17 AtG may be restricted as regards content and may be subject to further requirements – also at later stages. The competent authorities also have the power to revoke licences if one of the conditions stipulated at the time of granting the licence was not fulfilled.</p> <p>The handling of radioactive substances and the operation of facilities etc. is in addition subject to state supervision according to § 19 para. 1 sentence 1 AtG, with the supervisory authorities having to supervise in particular whether there are any violations of the provisions of the Atomic Energy Act or of the statutory ordinances decreed on its basis, or of the licensing requirements.</p> <p>The establishment and continual development of a comprehensive body of nuclear regulations on the basis of the state of the art in science and technology is a task of the BMU (unwritten so-called "annex competence" to the legislative competence according to Art. 73 para. 1 no. 14 of the Basic Law). Since the major part of the current regulations stems from the 1980s, the BMU initiated a process of comprehensive revision of the nuclear regulations in 2003.</p>	
5.	<p>Does legislation provide the Regulatory Body with adequate authority and power to discharge its assigned responsibilities?</p> <p>The regulatory body shall be provided with adequate authority and power, and it shall be ensured that it has adequate staffing and financial resources to discharge its assigned responsibilities.</p> <p>This legislation shall establish a regulatory body with the authority outlined in para. 2.6;</p> <p><i>SS Ref.: GS-R-1 para 2.2 (4) and para 2.4 (4)</i></p>	

No	Question	Module 1: Legislative and governmental responsibilities
	<p>Answer: Yes, the licensing and regulatory authorities have to be invested with the necessary competences and powers to be able to fulfil their tasks effectively.</p> <p>The statutory provisions mentioned in the answers to questions 1 and 4 give the state authorities all power they need to fulfil their regulatory duties in dealing with the licensees.</p> <p>Decisions by the German Bundestag to cut budgets in the past led to the fact that Regulatory Body staff numbers at federal level were not kept at the level required. The Federal Regulator's point of view is that this also applies to the Länder administrations. There are no legal instruments to reimburse the costs of the Federal Regulator.</p> <p>On the topics worth improving from the Federal Regulator's point of view regarding</p> <ul style="list-style-type: none"> - manning and funding - structural deficits with regard to <ul style="list-style-type: none"> • Federal Regulator's possibility to systematically deal with all fundamental safety-related issues, • participation by the Länder in generic safety issues, • imbalance of manning levels at authorities and the TSO, • guarantee of information flow between Länder and federal supervisory authorities, • participation by the Länder in international co-operation <p>answers are provided in connection with the individual questions.</p>	<p>Assessment: 3/2</p>
6.	<p>Are legal and governmental mechanisms in place to ensure that the Regulatory Body has adequate staffing and financial resources to discharge its assigned responsibilities?</p> <p>The regulatory body shall be provided with adequate authority and power, and it shall be ensured that it has adequate staffing and financial resources to discharge its assigned responsibilities.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (4)</i></p>	

No	Question	Module 1: Legislative and governmental responsibilities
	<p>Answer: The number of staff and the amount of financial resources is determined by general budgetary procedures of Bund or Länder Government and Parliament, respectively.</p> <p>In times of general budgetary restraints this can lead – at least temporarily – to structural problems.</p> <p>Further details are given in the German CNS report 2008, p. 37-42.</p>	Assessment: 2
7.	<p>Are legal and governmental mechanisms in place to ensure that no other responsibilities are assigned to the Regulatory Body which might jeopardize or conflict with its responsibility for regulating safety?</p> <p>No other responsibility shall be assigned to the regulatory body which may jeopardize, or conflict with, its responsibility for regulating safety.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (5)</i></p>	
	<p>Answer: Yes, the Regulatory Body, in charge of nuclear safety, deals with safety issues with highest priority and is not put in charge of tasks that would be in conflict with or jeopardize this.</p> <p>According to Art. 8 para. 2 of the Convention on Nuclear Safety, the Federal Republic of Germany is committed to taking measures to ensure an effective separation of the tasks of the Regulatory Body from those of other authorities or organisations dealing with the promotion or utilisation of nuclear energy. With the ratification of this Convention, (act of 7/1/1997, BGBl. II no. 2 of 15/01/1997, p. 130 ff), the imperative of separation was adopted as a binding principle of state organisation. It has to be followed by the federal and the Länder governments. The same obligation also ensues from the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Art. 20 para. 2).</p> <p>Art. 65 sentence 2 of the Basic Law establishes under constitutional law the departmental principle under which each federal minister heads his or her own portfolio independently and within his or her own responsibility within the framework of the guidelines laid down by the Federal Chancellor. The same applies in principle in the Länder.</p>	Assessment: 3

No	Question	Module 1: Legislative and governmental responsibilities
8.	<p>Are legal and governmental mechanisms in place to ensure adequate infrastructural arrangements for decommissioning, for close out or closure, site rehabilitation, and safe management of radioactive waste (including spent fuel designated as waste)?</p> <p>Adequate infrastructural arrangements shall be made for decommissioning, close-out or closure, site rehabilitation, and the safe management of spent fuel and radioactive waste.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (6)</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes, the necessary legal framework has been created.</p> <p>The legal framework ensues from the Atomic Energy Act and the supplementing statutory ordinances. The legislator has committed the Federal Government to establish facilities for the final disposal of radioactive waste. The waste originators have to carry the cost of construction and operation and have to make corresponding financial provisions (Repository Prepayment Ordinance), the Länder are committed to establish state collecting facilities for the interim storage of the radioactive waste arising on their territories (§ 9a para. 3 AtG). Delivery of such waste is compulsory (§ 76 StrlSchV). Decommissioning is subject to licensing according to § 7 para. 3 AtG. Supplementary regulations can be found in statutory ordinances and in the non-mandatory guidance instruments, e.g. in the Guideline on the Decommissioning of Installations according to § 7 of the Atomic Energy Act of 14 June 1996 (BAnz no. 211a, 12 November 1996).</p> <p>§ 29 of the Radiation Protection Ordinance includes regulations concerning the release of radioactive substances from supervision.</p> <p>Some individual legal provisions (clearance/decommissioning) are being examined with regard to their need for revision.</p>
9.	<p>Are legal and governmental mechanisms in place to ensure adequate infrastructural arrangements for the safe transport of radioactive material?</p> <p>Adequate infrastructural arrangements shall be made for the safe transport of radioactive material.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (7)</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes, the Federal Government has established the necessary legal framework, which is executed at federal and at Länder level.</p> <p>In Germany, the transport of radioactive material is governed by laws referring to the shipment of hazardous goods and by nuclear law.</p>

No	Question	Module 1: Legislative and governmental responsibilities
	<p>The Hazardous Goods Transport Act and the Ordinances on Hazardous Goods based on it lie within the responsibility of the Federal Ministry of Transport, Building and Urban Affairs (BMVBS), whereas the responsibility for the nuclear law provisions lies with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).</p> <p>The provisions on hazardous goods are based on the "Recommendations on the Safe Transport of Radioactive Material" issued by the Vienna-based International Atomic Energy Agency (IAEA) as No. TS-R-1 of the IAEA Safety Standards Series.</p> <p>The nuclear law provisions applying to the shipment of radioactive material are mainly laid down in the Atomic Energy Act (§ 4) and the Radiation Protection Ordinance (§ 16 ff.).</p>	
10.	<p>Is there an established system of governmental emergency response and intervention capability to assure effective emergency preparedness?</p> <p>An effective system of governmental emergency response and intervention capabilities shall be established and emergency preparedness shall be ensured.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (8)</i></p>	Assessment: 2
	<p>Answer:</p> <p>In Germany, the competences for radiological and nuclear emergency preparedness are divided between the federal and the Länder governments. The Länder are in charge of taking measures of immediate defence against hazards, i.e. of disaster response measures, which is to say for local measures to prevent deterministic damage. The Federal Government, on the other hand, is responsible for precautionary radiation protection, i.e. especially for measures to reduce stochastic damage and to reduce the collective dose in the event of wide-area damage situations. In case of an emergency, the Federal Government provides technical and organisational assistance to the Länder.</p> <p>The concrete planning of actions in the vicinity of the plant also numbers among the general responsibilities of the Länder in connection with emergency preparedness. These so-called "special disaster control plans" in the environment of nuclear installations are prepared on the basis of the "Basic Recommendations for Emergency Preparedness in the Environment of Nuclear Facilities" elaborated by the BMU in co-operation with the Länder. As regards emergency protection, the BMU has no responsibility of its own. Nevertheless, it fulfils co-ordinating tasks with the aim of harmonisation. Any responsibilities the BMU has in connection with a nuclear accident that makes disaster response measures by the Länder in the environment of a plant necessary ensue from the fact that precautionary radiation protection measures become necessary in a wider area. It is therefore necessary that there is close collaboration between the Land where the accident happened and the BMU, which will set up its own crisis management in such cases.</p> <p>As the Federal Government is responsible for the external representation of Germany, the BMU assumes in these cases the role of "National Competent Authority" for the early information and support in nuclear accidents and is in charge of fulfilling the obligations entered into under the bilateral agreements with neighbouring states as well as under the multilateral reporting obligations of the IAEA and the EU. In this function, the BMU also takes</p>	

No	Question	Module 1: Legislative and governmental responsibilities
	<p>part in exercise series (INEX of the OECD/NEA, the ConvEx series of the IAEA and the IACRNA). Apart from the above-mentioned obligations there are also obligations of immediate notification between the authorities close to the border.</p> <p>To cope with other radiological events involving an increased exposure to radiation, such as a dirty bomb or other forms of contamination, the same structures are available as in the case of a nuclear accident.</p> <p>Against the background of novel nuclear-specific threats, Baden-Württemberg has established the "Centre of Radiation Protection Competence" which is organised as a network of the states' radiation protection experts. The task of this network is to strengthen the contacts between the radiation protection experts - without affecting their own respective responsibilities – and to enhance the competence in the area of nuclear-specific hazard defence through joint training, workshops and exercises. This also applies to the close collaboration with radiation protection experts not belonging to state administration.</p> <p>The current system of emergency management is marked by various different responsibilities, the resulting interfaces, and the need for co-ordination, with the resulting information losses and time delays. This could be countered by more centralised decision structures. However, decentralised structures offer some advantages through local decision and implementation structures.</p> <p>Under the given constitutional distribution of responsibilities, the intensive co-ordination between Federal and Länder governments not only in emergencies but also in precautionary radiation protection is a major part of a successful and effective crisis management. In order to minimise problems in the co-ordination process it is necessary to hold much more frequent and intensive exercises for all conceivable radiological and nuclear events. Baden-Württemberg has already picked up on this topic as a result of a recommendation by the International Committee on Nuclear Technology (ILK) of Baden-Württemberg, Bavaria and Hesse, and a corresponding catalogue of measures has been prepared.</p> <p>What also needs to be exercised apart from the co-ordination process is the transmission from the Land to the BMU of the information necessary in the context of the international reporting obligations; this needs to be done to uncover any weak points along the transmission path. The current inadequate level of manning is a major contributing factor to the circumstance that there is little readiness on the part of both federal and Länder governments to prepare and carry out any exercises.</p> <p>In the case of an event occurring, this lack of staff will become evident, especially in connection with information management when it comes to informing the general public.</p>	

No	Question	Module 1: Legislative and governmental responsibilities
11.	<p>Does legislation or other governmental mechanism ensure that arrangements for physical protection do not adversely influence safety?</p> <p>Adequate infrastructural arrangements shall be made for physical protection, where these influence safety.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (9)</i></p>	Assessment: 3
<p>Answer:</p> <p>Yes. It is ensured by the legal and regulatory framework that the measures of physical protection taken will not adversely influence the safe operation of the nuclear installations and facilities.</p> <p>Nuclear installations can only be licensed if the necessary precautions against malevolent disruptive acts or other third-party intervention have been taken (§ 7 para. 2 no. 5 AtG). The non-mandatory guidance instrument on physical protection describes for the whole federation, also on the basis of international regulations such as "The physical protection of nuclear material and nuclear facilities (INFCIRC/225/Rev. 4)", the necessary protection-goal-oriented measures. This guidance instrument, especially also the "Guideline on the protection of Light Water Reactors against Malevolent Disruptive Acts or Other Third-Party Intervention" (classified document), has been agreed with the licensing and supervisory authorities of the Länder and the federal and Länder safety authorities. All measures of physical protection build on the safety measures of the nuclear installations and facilities, partly take credit of these measures (e.g. number and physical redundancy), and are independently designed. Any retroactive effect on safety-relevant elements of the nuclear installation is excluded.</p>		
12.	<p>Are there adequate financial indemnification arrangements in place for third parties in the event of a nuclear or radiation accident in view of the damage and injury which may arise from an accident?</p> <p>Adequate financial indemnification arrangements shall be made for third parties in the event of a nuclear or radiation accident in view of the damage and injury which may arise from an accident.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (10)</i></p>	

No	Question	Module 1: Legislative and governmental responsibilities
	<p>Answer: Yes, any possible liability claims are already insured in accordance with the risk involved in the plant or the corresponding activity as part of the licensing procedure through the obligation to demonstrate financial security (liability insurance or other financial security). The state ensures by setting aside funds of his own that any further-reaching damage is also compensated (up to a certain amount).</p> <p>In addition to the stipulations of the Paris Convention on liability and the Joint Protocol, §§ 25 ff. AtG and the Nuclear Financial Security Ordinance (AtDeckV) make requirements for the liability in connection with nuclear installations and radioactive material. According to § 31 Abs. 1 AtG, the liability of the operator of a nuclear installation is generally unlimited.</p> <p>According to § 13 AtG, the administrative authority has to determine the type, terms and amount of the financial security to be provided by the applicant to meet the legal liability to pay compensation for any damage.</p> <p>More detailed requirements for the financial security to be provided for installations and activities which may be liable according to international agreements or the Atomic Energy Act are laid down in a statutory ordinance (Nuclear Financial Security Ordinance – AtDeckV). According to § 1 AtDeckV, liability may be covered by liability insurance or by other financial security.</p> <p>If the operator of a nuclear installation or owner of radioactive material has become legally liable to pay compensation for damage, he shall according to § 34 para. 1 AtG be indemnified against any liability to pay compensation for damage to the extent such liability is not covered by or cannot be satisfied out of the financial security provided. The maximum amount of indemnification shall be EUR 2.5 billion (§ 13 para. 3 sentence 2, 34 para. 1 sentence 2 AtG).</p> <p>If it is expected that the legal liability will exceed the funds available, the distribution of said funds will be regulated in accordance with § 35 para. 1 AtG by act of law or for the time being by statutory ordinance.</p>	<p style="text-align: right;">Assessment: 3</p>
13.	<p>Does a legal and governmental mechanism provide for a technological infrastructure to ensure the safety of facilities and activities where this is not provided by other organizations?</p> <p>The technological infrastructure necessary for ensuring the safety of facilities and activities shall be provided, where this is not provided by other organizations.</p> <p><i>SS Ref.: GS-R-1 para 2.2 (11)</i></p>	
	<p>Answer: Regarding the installations according to § 7 AtG, the BMU assumes in principle steering and guiding functions. The detailed evaluation and assessment is the responsibility of the Länder. To fulfil its function of federal supervision, the BMU can demand to be provided with the relevant documents.</p> <p>The technological infrastructure additionally necessary from the point of view of the BMU for the Federal Regulator to fulfil his supervisory function beyond administrative actions of the Länder consists of:</p>	<p style="text-align: right;">Assessment: 3/2/1</p>

No	Question
	<p style="text-align: right;">Module 1: Legislative and governmental responsibilities</p> <p>a) computer-aided, up-to-date documentation of all plants, including safety demonstration documents, which can be quickly accessed: partly available through TECDO (GRS system): not assuredly up to date, not complete</p> <p>b) analysis instruments for the verification of safety demonstrations: partly available at expert organisation (GRS)</p> <p>c) powerful and secured communication facilities (phone, fax, e-mail, data systems): generally available, e-mailing restricted with data volume >6MB</p> <p>d) mobility infrastructure to allow immediate/timely steering and management functions or to be able to provide technical competence on site: adequate</p> <p>e) modern powerful infrastructure for meetings (rooms, projectors, access to documents): available</p> <p>f) facilities for obtaining and accessing important information (for first assessment, e.g. Internet, BMU Intranet) also outside office hours and away from permanent post: partly available (Director General, Heads of Directorate, Heads of Division), not to the extent necessary.</p> <p>Apart from that, there also exists the infrastructure for the granting of licences for the safekeeping of nuclear fuels, including irradiated fuel elements and high-active waste (§ 6 AtG) as well as for the granting of permits for transport casks and for transport licences (§ 4 AtG) by the Federal Office for Radiation Protection (BfS).</p> <p>The licensing documents for the licences to be granted are fully available to the licensing authorities. If necessary, the licensing authorities may avail themselves of the immediate support of experts. In addition, the Federal Regulator commissions research projects on general issues (funded from the federal budget). Moreover, the Reactor Safety Commission (RSK) and the Commission on Radiological protection (SSK) are asked to make statements on generic issues as well as on general concepts.</p> <p>The following applies to the UM BW:</p> <p>The Baden-Württemberg licensing and supervisory authority has a similar technological infrastructure at its disposal to fulfil its functions. In addition, the electronic process data administration system AGAVE is available for checking whether licence requirements are fulfilled and for verifying deadlines and the completeness of work. A further instrument of oversight is the Nuclear Reactor Remote Monitoring System (KFÜ), which is used by the supervisory authority to monitor a large number of plant parameters as well as immission and emission data around the clock online. For tasks related to emergency preparedness, a modern Radiological Situation Centre with the corresponding infrastructure is available. Communication with all authorities concerned in an emergency takes place via a modern web-based Electronic Situation Report system (ELD).</p>

No	Question	Module 1: Legislative and governmental responsibilities
14.	<p>Is the prime responsibility for safety clearly assigned to the operator?</p> <p>The prime responsibility for safety shall be assigned to the operator. The operator shall have the responsibility for ensuring safety in the siting, design, construction, commissioning, operation, decommissioning, close-out or closure of its facilities, including, as appropriate, rehabilitation of contaminated areas; and for activities in which radioactive materials are used, transported or handled. Organizations which generate radioactive waste shall have responsibility for the safe management of the radioactive waste that they produce. Since during the transport of radioactive material, primary reliance for safety is put on the use of approved packaging, it is the responsibility of the consignor to ensure appropriate selection and use of packaging. Compliance with the requirements imposed by the regulatory body shall not relieve the operator of its prime responsibility for safety. The operator shall demonstrate to the satisfaction of the regulatory body that this responsibility has been and will continue to be discharged.</p> <p><i>SS Ref.: GS-R-1 para 2.3</i></p>	
	<p>Answer: Yes, there is a clear legal assignment of responsibility to the operator.</p> <p>When applying for a nuclear licence, the applicant has to demonstrate fulfilment of the legal licensing requirements according to § 7 AtG and of the requirements of the applicable nuclear regulations. According to the Nuclear Licensing Procedures Ordinance (AtVfV) he has to show that he can assume the responsibility for safety linked to applying the licence. During operation, the "Regulatory Body" checks by using the instruments provided by §§ 17, 19 AtG whether the licensee continuously fulfils his safety obligation.</p> <p>The operators of facilities in which nuclear fuels are handled have to show that any arising radioactive residues are utilised without ecological damage or disposed of as radioactive waste. Since 1 July 2005 a ban has been in place on handing over irradiated fuel elements for recycling through reprocessing (§ 9a AtG).</p> <p>Until they are delivered to a federal repository, the radioactive waste and irradiated fuel elements have to be kept (in interim storage) by the operator. It has to be demonstrated that legally and technically available interim storage facilities are provided for the interim storage volumes of irradiated fuel elements needed according to realistic estimates over the respective periods of the next two years to come. The same applies to the operators of research reactors. These regulations do not apply to radioactive waste from industry, research and medicine: these are disposed of by delivering them to state collecting facilities. The waste originator has thereby met his obligations.</p> <p>In §§ 9,13,14,33 StrSchV and §15 RöV (X-Ray-Ordinance), the obligations of the licensee in connection with the handling of radioactive materials are defined.</p> <p>The operator has to demonstrate compliance with the requirements for the equipment upon filing the application as well as later on during operation. The</p>	<p style="text-align: right;">Assessment: 3</p>

No	Question	Module 1: Legislative and governmental responsibilities
	requirements are put in concrete terms in the Radiation Protection Ordinance and the X-Ray Ordinance and are placed in the sole responsibility of the operator in his function as radiation protection supervisor.	
15.	Does legislation set out effective objectives for protecting individuals, society and the environment from radiation hazards, both for the present and in the future? This legislation shall set out objectives for protecting individuals, society and the environment from radiation hazards, both for the present and in the future; <i>SS Ref.: GS-R-1 para 2.4 (1)</i>	Assessment: 3
	Answer: Yes, corresponding legal regulations are defined by the Radiation Protection Ordinance , which also implements European legal requirements.	
16.	Does legislation specify facilities, activities and materials that are included in the scope and what is excluded from the requirements of the legislation? This legislation shall specify facilities, activities and materials that are included in the scope of the legislation and what is excluded from the requirements of any particular part of the legislation; <i>SS Ref.: GS-R-1 para 2.4 (2)</i>	Assessment: 3
	Answer: Yes, there is a clear legal definition of the scope of application and the technical terms. § 2 AtG contains definitions in terms of the Atomic Energy Act and thereby specifies the scope of application of the nuclear regulations. The generic term according to § 2 para. 1 AtG is "radioactive material", which covers nuclear fuels and other radioactive materials. The scope of application of the Radiation Protection Ordinance is laid down in § 2 StrlSchV , more detailed definitions are contained in § 3 StrlSchV .	
17.	Does legislation establish authorization and other processes (such as notification and exemption), which take account of the potential magnitude and nature of the hazard associated with the facility or activity, and specify the steps of the processes? This legislation shall establish authorization and other processes (such as notification and exemption), with account taken of the potential magnitude and nature of the hazard associated with the facility or activity, and shall specify the steps of the processes; <i>SS Ref.: GS-R-1 para 2.4 (3)</i>	

No	Question	Module 1: Legislative and governmental responsibilities
	<p>Answer: The Atomic Energy Act contains in its second chapter (§§ 3 to 21b AtG) detailed supervisory provisions. These comprise licensing requirements for certain installations and activities, procedural regulations as well as enabling provisions to decree further provisions. According to § 19 AtG also stipulates government supervision.</p> <p>The handling of radioactive material subject to licensing is regulated in § 7 StrSchV, while the construction and operation of installations for the generation of ionising radiation subject to licensing is regulated in §11 StrSchV.</p> <p>The statutory ordinance provided in the Atomic Energy Act for the definition of the measures necessary for damage precaution does not exist so far. Here, however, the so-called nuclear non-mandatory guidance instruments apply, which are, however, virtually but not in fact legally binding. The nuclear non-mandatory guidance instruments are, however, outdated.</p>	<p>Assessment: 2</p>
18.	<p>Does legislation provide for adequate funding of the Regulatory Body?</p> <p>This legislation shall arrange for adequate funding of the regulatory body;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (5)</i></p>	<p>Assessment: 2</p>
19.	<p>Does legislation specify the process for removal of a facility or activity from regulatory control?</p> <p>This legislation shall specify the process for removal of a facility or activity from regulatory control;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (6)</i></p>	<p>Assessment: 3</p>
	<p>Answer: Yes, a legal framework has been established for the decommissioning phase which attributes highest priority to safety. The conditions for a release of radioactive material from state supervision have been defined and are devised such that the protection of the population and the environment at an internationally accepted level of protection is guaranteed.</p>	

No	Question	Module 1: Legislative and governmental responsibilities
	<p>According to § 7 para. 3 AtG, the decommissioning of an installation according to § 7 para. 1 sentence 1 AtG and the safe enclosure of the finally decommissioned installation or the dismantling of the installation or of parts of it are always subject to licensing. Nuclear supervision extends over the entire lifetime of a nuclear power plant and only ends when – following the decommissioning - all radioactive materials have been removed from the plant or have decreased below a level where they are no longer subject to supervision (§ 19 AtG). The prerequisites for a release from nuclear supervision are defined in § 29 StrlSchV.</p>	
20.	<p>Does legislation make provision for review of, and appeal against, regulatory decisions (without compromising safety)?</p> <p>This legislation shall establish a procedure for review of, and appeal against, regulatory decisions (without compromising safety);</p> <p><i>SS Ref.: GS-R-1 para 2.4 (7)</i></p> <p>Answer: Yes, the possibility to take legal action is guaranteed.</p> <p>Article 19 para. 4 of the Basic Law provides the guarantee to be able to take legal action. State supervision measures are taken on the basis of administrative deeds. Anyone affected by this is given the possibility by the general Administrative Courts Code (VwGO) to raise an objection or take legal action. The competent authority may order that any possible appeals have no suspensive effect.</p>	Assessment: 3
21.	<p>Does legislation provide for continuity of responsibility when activities are carried out by several successive operators and for the recording of the transfers of responsibility?</p> <p>This legislation shall provide for continuity of responsibility when activities are carried out by several operators successively and for the recording of the transfers of responsibility;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (8)</i></p> <p>Answer: Yes, the reliability of the respective operator is ensured by personal licences. Legal stipulations and regulations specify the responsibilities and obligations comprehensively and completely. The delimitation of responsibilities is regulated. The change-over of the persons responsible is also regulated.</p> <p>The licensing system of the Atomic Energy Act is personal (natural or legal person). A licence may only be granted according to the regulations if there are no known facts that would give rise to any doubts about the reliability of the applicant and the persons responsible for the construction, management</p>	Assessment: 3

No	Question Module 1: Legislative and governmental responsibilities
	<p>or supervision (cf. §§ 3 para. 2 no. 1; 3 para. 3 no. 1; 4 para. 2 no. 1; 6 para. 2 no. 1; 7 para. 2 no. 1; 9 para. 2 no. 1).</p> <p>The transfer of a licence to another person is in itself subject to licensing, being an "essential change" compared with the originally licensed installation or activity (cf. §§ 6 para. 1 sentence 2, 7 para. 1 sentence 1, 9 para. 1 sentence 2 AtG).</p>
22.	<p>Does legislation allow for the creation of independent advisory bodies to provide expert opinion to, and for consultation by, the government and Regulatory Body?</p> <p>This legislation shall allow for the creation of independent advisory bodies to provide expert opinion to, and for consultation by, the government and regulatory body;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (9)</i></p>
	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes, external experts are to be consulted for the independent assessment of safety-related issues without binding the authorities and calling their ultimate responsibility into question. When choosing the experts, the criteria to be applied are qualification and skills, reliability and impartiality.</p> <p>According to § 20 AtG, the competent authorities may consult experts in the licensing and supervisory procedures pursuant to the Atomic Energy Act and the statutory ordinances decreed on the basis of this Act.</p> <p>§ 12 AtG lists the aspects to be considered when consulting experts:</p> <ul style="list-style-type: none"> - training - professional knowledge and skills, - reliability, and - impartiality <p>Further concrete specifications of the requirements are contained in corresponding guidelines.</p> <p>The consultation of experts means that there is an assessment of the safety-related facts and conditions that is independent of the applicant. To this end, the experts carry out their own examinations and calculations, preferably using methods and computer codes different from those applied by the applicant. The persons involved in the expert opinion that is submitted are not subject to any directives in their professional work and are named personally to the authority. The authorities are in turn not bound in their decisions to the assessments made by the experts.</p> <p>For its federal supervisory activities, the Federal Environment Ministry likewise consults experts from Germany and abroad if need be. The Federal Environment Ministry receives advisory support from the Federal Office for Radiation Protection, the Reactor Safety Commission, the Commission on Radiological Protection, Gesellschaft für Anlagen- und Reaktorsicherheit, and the Nuclear Safety Standards Commission.</p>

No	Question	Module 1: Legislative and governmental responsibilities
	<p>The Länder of Baden-Württemberg, Bavaria and Hesse are additionally advised by the International Committee on Nuclear Technology (ILK).</p>	
23.	<p>Does legislation set up a means whereby research and development work is undertaken in important areas of safety?</p> <p>This legislation shall set up a means whereby research and development work is undertaken in important areas of safety;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (10)</i></p> <p>Answer: Yes, safety research continues to be ensured at a high level, while there is no longer any state-funded research to promote nuclear energy in the light of § 1 no. 1 AtG.</p> <p>Prime responsibility to guarantee safety lies with the operator. Any licences according to the Atomic Energy Act may only be granted if the necessary precaution against damage has been taken in line with the state of the art in science and technology (cf. §§ 4 para. 2 no. 3; 6 para. 2 no. 2; 7 para. 2 no. 3; 9 para. 2 no. 3 AtG). The licences contain specific regulations on the guarantee of the operators' responsibility for the safety of the plants; this also applies with regard to the consideration of operating experience and new findings. As concerns modification licences that are granted on the basis of the provisions mentioned and the possibility of measures taken by the state (§§ 17, 19 AtG), it is furthermore in the interest of the operators to develop the safety of their plants further by their own activities.</p> <p>The state conducts safety research to guarantee compliance with the state of the art in science and technology. Since the amendment of the Atomic Energy Act in 2002 its purpose according to § 1 no. 1 AtG is to phase out the use of nuclear energy for the commercial generation of electricity in a structured manner, and to ensure on-going operation up until the date of discontinuation. Any state-promoted research will therefore mainly be carried out to guarantee the safety of the operating reactors. The possibility of research by third parties into the development of nuclear technology with a view to new generations of reactors is unrestricted.</p>	<p>Assessment: 3</p>
24.	<p>Does legislation set out the arrangements for provision of financial security in respect of any liabilities?</p> <p>This legislation shall set out the arrangements for provision of financial security in respect of any liabilities;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (12)</i></p> <p>Answer: Cf. answer to Question 12.</p>	<p>Assessment: 3</p>

No	Question	Module 1: Legislative and governmental responsibilities
25.	<p>Does legislation set out the responsibilities and obligations in respect of financial provision for radioactive waste management and decommissioning?</p> <p>This legislation shall set out the responsibilities and obligations in respect of financial provision for radioactive waste management and decommissioning;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (13)</i></p> <p>Answer:</p> <p>According to § 9a para. 3 AtG, the Federation has to establish installations for the safekeeping and final disposal of radioactive waste. The waste originators, especially the power utilities as main originators of radioactive waste, have the duty to carry the necessary cost of establishing such repositories.</p> <p>The Federation may levy contributions on the parties delivering the waste, i.a. for the establishment of a repository (§ 21b AtG). Under further conditions, advance payments against said contributions may be required to be made to the amount of the Federation's corresponding annual expenditure (§ 21b para. 2 AtG). Once the repository has been commissioned, the parties obliged to surrender material shall be charged with costs (fees and expenses) for the use of the repository (§ 21a AtG).</p> <p>The decommissioning and in particular the dismantling of nuclear installations are the responsibility of the respective operating company in accordance with the general polluter-pays principle of environmental law. These companies have to carry out this task and raise the corresponding necessary funds.</p> <p>The German Commercial Code (<i>Handelsgesetzbuch</i> - HGB) lays down a general duty under commercial law to make provisions for any future obligations which may be uncertain regarding their extent or the time when they will be claimed, but which can be expected with sufficient certainty (§ 249 HGB). Accordingly, the companies operating nuclear power plants make provisions for the above-mentioned future financial obligations resulting from decommissioning and disposal.</p> <p>The provisions by the operating companies are made by showing the future obligations as liabilities on the balance sheet. This means that an expense is entered in the company's books without any actual money being paid by the company. The sense behind this is that the funds necessary to meet the obligations remain within the company and are not paid out as dividends. This has the effect that the taxable profits in the respective fiscal year are reduced and the funds set aside are available for self-financing within the corporate group. These funds are regularly transferred as a loan to superordinate companies of the group up to the topmost parent companies and are used by them particularly for the acquisition of interests in other enterprises.</p> <p>The provisions set aside are not purpose-bound and are not administered separately. Financial authorities and certified accountants carry out annual audits of the provisions set aside with respect to their plausibility as part of the general tax and accounts audits.</p> <p>For the Federation, the current system of financing bears risks which in the most adverse case may lead to the circumstance that the Federation would have to carry the cost of the decommissioning of nuclear installations and of the final disposal of radioactive waste itself. Such funding risks arise in particular due to the fact that a repository for high-active waste is not expected to be commissioned before the year 2030 and that during the resulting</p>	Assessment: 2

No	Question	Module 1: Legislative and governmental responsibilities
	<p>long time-span the power utilities will no longer make any profits from nuclear energy because of the nuclear phase out. Moreover, privatisation and deregulation lead to an increasing integration of the power utility groups (also with the participation of foreign groups) as well as to a progressing diversification of the business fields, which makes it noticeably more difficult to judge the security of funds. The system of company-internal provisions is not only encountered in the nuclear industry but is also applied in all German branches of industry for any uncertain future obligation. There are at present no indications that the provisions set aside for decommissioning will not be sufficient. However, to be able to continue to guarantee that sufficient funds can be accumulated in a transparent manner and that they will be available at the time they are needed, there are deliberations regarding a national optimisation of the current system of funding to ensure that the requirements stipulated by the Federation can be fulfilled in the long run.</p>	
26.	<p>Does legislation define what is an offence and the corresponding penalties?</p> <p>This legislation shall define what is an offence and the corresponding penalties;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (14)</i></p>	Assessment: 3
27.	<p>Does legislation or any governmental mechanism implement any obligations under international treaties, conventions or agreements?</p> <p>This legislation shall implement any obligations under international treaties, conventions or agreements;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (15)</i></p>	Assessment: 3
	<p>Answer: Yes, any contraventions will be punished depending on their severity or penalised as a regulatory offence. Relevant elements of offence are dealt with in the criminal code (§§ 126, 129a, 138, 307, 309, 310, 311, 312, 316b, 326, 327, 328, 330, 330a StGB). The Atomic Energy Act (§ 46 AtG) and the related statutory ordinances regulate the regulatory offences for which penalties will be inflicted on the persons committing the offences.</p> <p>According to Art. 59 para. 2 sentence 1 GG, contracts under international law referring to any subject matter of federal legislation, such as nuclear energy law, require approval by or participation of the competent bodies in charge of federal legislation in the form of a federal act of law. For example, the Convention on Nuclear Safety became part of national law by the act of 7/1/1997 (BGBl. II no. 2 of 15/01/1997, p. 130 ff), as did the</p>	

No	Question	Module 1: Legislative and governmental responsibilities
	<p>Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. The same applies to international agreements on liability, physical protection, etc.</p> <p>Apart from that, legislation and execution also have to consider the binding provisions of European law.</p>	
28.	<p>Does legislation define how the public and other bodies are involved in the regulatory process?</p> <p>This legislation shall define how the public and other bodies are involved in the regulatory process;</p> <p><i>SS Ref.: GS-R-1 para 2.4 (16)</i></p>	
	<p>Answer:</p> <p>Yes, the rights and concerns of the citizen affected by a plant or an activity are included and taken into account in the state's decision-making process as early as possible.</p> <p>In accordance with § 7 AtG, the nuclear licensing authority involves the general public in the licensing procedures of installations. This way, above all those citizens are protected who may be affected by the planned installation. The Nuclear Licensing Procedures Ordinance contains further detailed regulations for involvement in §§ 4 ff. AtVfV.</p> <p>According to § 2a para. 1 sentence 1 AtG in combination with the Environmental Impact Assessment Act (UVPG), an environmental impact assessment is mandatory according to Annex 1 no. 11 to the UVPG for all projects falling under nuclear and radiation protection law.</p> <p>The new Environmental Information Act (UIG) which became effective on 14 February 2005 commits all public administration authorities of the Federation to release environmental information. It serves for the adaptation of federal law to the specifications of the environmental information directive 2003/4/EG and implements at the same time the requirements of the Aarhus Convention concerning the access to environmental information and the corresponding legal protection. The Information Provision Act served for the introduction of a general citizens' right to view regulatory documents. The involvement of the general public in environmental decision-making processes and the citizens' access to courts in connection with environmental issues are regulated in the Public Involvement Act and in the Environmental Appeal Act.</p>	Assessment: 3

No	Question	Module 1: Legislative and governmental responsibilities
29.	<p>Does legislation specify the nature and extent of the application of newly established requirements to existing facilities and current activities?</p> <p>This legislation shall specify the nature and extent of the application of newly established requirements to existing facilities and current activities.</p> <p><i>SS Ref.: GS-R-1 para 2.4 (17)</i></p> <p>Answer: Yes, nuclear law provides for the adaptation of the installations to the state of the art in science and technology through additional (commensurate) measures.</p> <p>The precondition for the granting of nuclear licences is that the necessary precaution against damage in line with the state of the art in science and technology is guaranteed (§§ 4 para. 2 no. 3, 6 para. 2 no. 2, 7 para. 2 no. 3, 9 para. 2 no. 3 AtG). This is a tightening of the requirement of being "state of the art" or complying with the "acknowledged rules of technology" otherwise applied in German technical safety law. It means that in order to obtain a licence, the applicant has to take those precautions against damage which are considered necessary from a safety-related point of view according to the most recent assured scientific findings.</p> <p>Any necessary adaptation of existing licences for installations or activities is possible by imposing additional requirements according to § 17 AtG or by modification licences.</p> <p>Transitional arrangements may be provided if necessary if any new legal regulations enter into force.</p>	Assessment: 3
30.	<p>Where other authorities, which may fail to meet the requirement of independence, are involved in the granting of authorizations, does legislation ensure that the safety requirements of the Regulatory Body remain in force and are not modified in the regulatory process?</p> <p>If other authorities, which may fail to meet the requirement of independence set out in item (2) of para. 2.2, are involved in the granting of authorizations, it shall be ensured that the safety requirements of the regulatory body remain in force and are not modified in the regulatory process.</p> <p><i>SS Ref.: GS-R-1 para 2.5</i></p> <p>Answer: See answer to Question no. 3.</p>	Assessment: 3
31.	<p>Does the legislation ensure that the Regulatory Body has the authority to develop safety principles and criteria?</p> <p>The regulatory body shall have the authority to develop safety principles and criteria;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (1)</i></p>	

No	Question	Module 1: Legislative and governmental responsibilities
	<p>Answer: The competence of the Federation to decree non-mandatory nuclear guidance instruments follows as an annex from the legislative competence laid down in nuclear law according to Art. 73 para. 1 no. 14 GG and the federal executive administration provisions laid down in Art. 87c in combination with 85 GG. The non-mandatory nuclear guidance instruments are currently being updated.</p>	Assessment: 3
32.	<p>Does the legislation ensure that the Regulatory Body has the authority to establish regulations and issue guidance?</p> <p>The regulatory body shall have the authority to establish regulations and issue guidance;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (2)</i></p>	Assessment: 3
33.	<p>Does the legislation ensure that the Regulatory Body has the authority to require an operator to conduct a safety assessment?</p> <p>The regulatory body shall have the authority to require any operator to conduct a safety assessment;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (3)</i></p>	Assessment: 3
	<p>Answer: Yes, the authority has the necessary powers to be able to require the licensee of a plant to conduct a safety review.</p> <p>The nuclear power plant operators must operate the plants according to the specifications of the plant licences, the additional requirements and the legal provisions binding them directly. The fulfilment of the responsibility of the licensees for the safety of their plants is supervised by the nuclear licensing and supervisory authority according to §§ 17, 19 AtG and is enforced if necessary. Supplementary verifications may be required.</p> <p>In addition, according to § 19a AtG, the licensee has to conduct a safety review of the plant and has to present the results of this review to the supervisory authority by a certain date specified in the Atomic Energy Act. Ten years after this date, the results of a renewed safety review have to be submitted.</p>	

No	Question	Module 1: Legislative and governmental responsibilities
34.	<p>Does the legislation ensure that the Regulatory Body has the authority to require an operator to provide any necessary information, including information from its suppliers, even if this information is proprietary?</p> <p>The regulatory body shall have the authority to require that any operator provide it with any necessary information, including information from its suppliers, even if this information is proprietary;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (4)</i></p>	Assessment: 3
<p>Answer: On the basis of § 19 AtG, the supervisory authorities can demand to be provided with all necessary information, including classified information and company secrets.</p> <p>Access rights etc. are regulated § 19 para. 1 sentence 3 AtG in combination with § 139b GewO, § 19 para. 2 AtG.</p>		
35.	<p>Does the legislation ensure that the Regulatory Body has the authority to issue, amend, suspend or revoke authorizations and to set conditions?</p> <p>The regulatory body shall have the authority to issue, amend, suspend or revoke authorizations and to set conditions;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (5)</i></p>	Assessment: 3
<p>Answer: Yes, there is a clear and comprehensive legal framework for the granting of licences, for any content-related restrictions, and for revocation and withdrawal decisions.</p> <p>The licensing requirements ensue from the Atomic Energy Act (e.g. § 7 AtG) and the statutory ordinances based on them (especially the Radiation Protection Ordinance). To achieve the purposes referred to in the Atomic Energy Act, the licences may according to § 17 AtG contain restrictions and may be subject to certain obligations – also later imposed ones. The authorities also have the power to revoke or withdraw licences if any of their preconditions had not been fulfilled at the time these licences were granted. Licenses have to be revoked i.a. if such revocation is necessary to avoid substantial hazards and if subsequently imposed obligations cannot otherwise remedy the situation (§ 17 Abs. 4 AtG).</p>		

No	Question	Module 1: Legislative and governmental responsibilities
36.	<p>Does the legislation ensure that the Regulatory Body has the authority to require an operator to perform a systematic safety reassessment or a periodic safety review over the lifetime of facilities?</p> <p>The regulatory body shall have the authority to require an operator to perform a systematic safety reassessment or a periodic safety review over the lifetime of facilities;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (6)</i></p>	Assessment: 3
	<p>Answer: See answer to Question no. 33.</p>	
37.	<p>Does the legislation ensure that the Regulatory Body has the authority to enter a site or facility at any time to carry out an inspection?</p> <p>The regulatory body shall have the authority to enter a site or facility at any time to carry out an inspection;</p> <p><i>SS Ref. GS-R-1 para 2.6 (7)</i></p>	Assessment: 3
	<p>Answer: See answer to Question no. 34.</p>	
38.	<p>Does the legislation ensure that the Regulatory Body has the authority to enforce regulatory requirements?</p> <p>The regulatory body shall have the authority to enforce regulatory requirements;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (8)</i></p>	Assessment: 3
	<p>Answer: Yes. The supervisory authority may order according to § 19 para. 3 AtG that a condition be rectified that is in contradiction to the provisions of the Atomic Energy Act or of any statutory ordinances decreed on its basis, to the stipulations of the licensing decision, or to any general permits or any additionally imposed requirement, or from which risks to life, health or material goods may result due to the effects of ionising radiation. The authority's orders represent administrative acts which can be enforced in accordance with the general administrative enforcement acts.</p>	

No	Question	Module 1: Legislative and governmental responsibilities
39.	<p>Does the legislation ensure that the Regulatory Body has the authority to communicate directly with governmental authorities at higher levels when it is considered necessary for exercising effectively the functions of the Regulatory Body?</p> <p>The regulatory body shall have the authority to communicate directly with governmental authorities at higher levels when such communication is considered to be necessary for exercising effectively the functions of the body;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (9)</i></p>	Assessment: 3
<p>Answer: Yes, the licensing and supervisory authorities dispose of various possibilities to communicate with other authorities up to the highest level.</p> <p>The licensing and supervisory authorities for nuclear installations are the respective ministries of the Land where the installation is located. The federal supervisory authority is the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The functions of licensing and supervision thus lie within the responsibility of the supreme federal and Länder authorities, which means that direct communication with superior authorities is guaranteed.</p>		
40.	<p>Does the legislation ensure that the Regulatory Body has the authority to obtain such documents and opinions from private or public organizations or persons as may be necessary and appropriate?</p> <p>The regulatory body shall have the authority to obtain such documents and opinions from private or public organizations or persons as may be necessary and appropriate;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (10)</i></p>	Assessment: 3
<p>Answer: Yes, to enable the Regulatory Body to execute its statutory licensing and supervisory functions it is given the authority to demand all necessary information and to enforce this right.</p> <p>According to § 20 AtG, the competent authorities may consult experts in the licensing and supervisory procedures pursuant to the Atomic Energy Act and the statutory ordinances decreed on the basis of this Act.</p> <p>The general provisions of police and public order law as well as of the code of criminal procedure provide the authority to confiscate safety-relevant documents etc.</p> <p>See also answer to Question no. 34.</p>		

No	Question	Module 1: Legislative and governmental responsibilities
41.	<p>Does the legislation ensure that the Regulatory Body has the authority to communicate independently its regulatory requirements, decisions and opinions and their basis to the public?</p> <p>The regulatory body shall have the authority to communicate independently its regulatory requirements, decisions and opinions and their basis to the public;</p> <p><i>SS Ref. GS-R-1 para 2.6 (11)</i></p> <p>Assessment: 3</p> <p>Answer: Yes, it is ensured by law that the competent nuclear authorities of the Länder and the Federation can inform the general public about their activities to the extent that is necessary.</p> <p>The tasks of nuclear licensing and supervision are established at government level. (cf. answer to Question 39). The government's public relations work is within limits not only permissible under constitutional law but also necessary. According to rulings of the Federal Constitutional Court, it is part of permissible public relations activities that the government and legislative bodies present and explain their policies, measures and projects as well as any future problems to be solved to the general public.</p>	
42.	<p>Does the legislation ensure that the Regulatory Body has the authority to make available to other governmental bodies, national and international organizations, and to the public information on incidents and abnormal occurrences and other information, as appropriate?</p> <p>The regulatory body shall have the authority to make available, to other governmental bodies, national and international organizations, and to the public, information on incidents and abnormal occurrences, and other information, as appropriate;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (12)</i></p> <p>Assessment: 3</p> <p>Answer: Yes, the competent authorities have to be informed immediately and comprehensively about all reportable events and other abnormal occurrences. They in turn inform the German Bundestag, international organisations and the general public about accidents and other reportable events.</p> <p>According to § 6 of the ordinance on the nuclear safety officer and the reporting of accidents and other events (Nuclear Safety Officer and Reporting Ordinance – AtSMV), the operator of a nuclear installation according to § 7 AtG has to report any accidents, incidents or other events relevant to nuclear safety (reportable events) to the supervisory authority. Reporting duties also exist in connection with the safekeeping of nuclear fuels according to § 6 AtG.</p> <p>The operator of a nuclear power plant will report an event to the competent supervisory authority of the Land if it is reportable according to the reporting</p>	

No	Question Module 1: Legislative and governmental responsibilities
	<p>criteria. The supervisory authority in turn will only report the event to the Federal Environment Ministry and in parallel also to the Federal Office for Radiation Protection and to Gesellschaft für Anlagen- und Reaktorsicherheit once it has examined the facts and circumstances.</p> <p>Irrespective of the regulatory reporting procedure according to the reporting ordinance, reportable events are furthermore classified by the nuclear power plant operators according to the seven-level INES assessment scale of the IAEA. This assessment scale is used to inform the general public about what significance a reportable event had for the safety of the plant and the environment and whether there were or might be any radiological consequences for the population and the environment.</p> <p>The information about all notifiable events is centrally registered and documented by the Federal Office for Radiation Protection (BfS) on behalf of the Federal Ministry for the Environment. The BfS carries out a first assessment of the events reported and informs all nuclear Länder authorities, experts, manufacturers and nuclear power plant operators as well as the general public in quarterly reports about the reportable events in nuclear power plants and research reactors. The quarterly reports are available to the general public on the Internet (http://www.bfs.de/en/kerntechnik/ereignisse/berichte).</p> <p>§51 para. 1 StrSchV as well as §6 AtSMV also stipulate a reporting duty for safety-relevant events in connection with the handling of radioactive materials outside the area of nuclear technology; this obligation is fulfilled by the BMU in the form of an annual report prepared for parliament and the general public.</p> <p>Furthermore, in the event of a nuclear accident in which a release of radioactive materials into the environment has to be expected, the BMU is obliged as "Competent Authority" according to the "Convention on Early Notification" of the IAEA and the early information agreement of the EU (Council Decision 87/600/Euratom of 14 December 1987) to send out reports by using the established EMERCON or ECURIE reporting systems to the IAEA and the EU as well as to the states possibly affected. The BMU has met this obligation by establishing an emergency task force organisation which is activated in the event of a nuclear event.</p> <p>Further reporting obligations exist on a bilateral basis in the form of agreements with neighbouring states.</p> <p>The BMU is obliged by the act on the redrafting of the environmental information act and on the modification of the legal basis of emission trading of 22 December 2004 BGBl I p.3704 to provide environmental information, which also includes radiation and discharges, to allow access to environmental information, and to make information in electronic form retrievable.</p> <p>Moreover, according to the Federal Environmental Information Act (UIG), there is a statutory right to demand information from every federal authority.</p> <p>The Freedom of Information Act (IFG) of 5. September 2005, BGBl I p. 2722 grants every citizen the statutory right of access to official information issued by the federal authorities.</p>

No	Question	Module 1: Legislative and governmental responsibilities
43.	<p>Does the legislation ensure that the Regulatory Body has the authority to liaise and co-ordinate with other governmental or non-governmental bodies having competence in such areas as health and safety, environmental protection, security, and transport of dangerous goods?</p> <p>The regulatory body shall have the authority to liaise and co-ordinate with other governmental or non-governmental bodies having competence in such areas as health and safety, environmental protection, security, and transport of dangerous goods;</p> <p><i>SS Ref.: GS-R-1 para 2.6 (13)</i></p>	Assessment: 3
<p>Answer: Yes, the authorities can mutually inform, involve and support each other on a comprehensive scale.</p> <p>The nuclear authorities are obliged by general provisions under law governing state organisation and furthermore have the possibility to involve other authorities with competences in the areas mentioned in Question 43.</p>		
44.	<p>Does the legislation ensure that the Regulatory Body has the authority to liaise with regulatory bodies of other countries and with international organizations to promote co-operation and the exchange of regulatory information?</p> <p>The regulatory body shall have the authority to liaise with regulatory bodies of other countries and with international organizations to promote co-operation and the exchange of regulatory information.</p> <p><i>SS Ref.: GS-R-1 para 2.6 (14)</i></p>	Assessment: 3
<p>Answer: The authorities have the necessary competence to be able to co-operate effectively at international level.</p> <p>Co-operation with the state bodies responsible for nuclear safety, waste management and radiation protection is mainly via the Federal Ministry for the Environment, Nature Conservation and Nuclear safety, which is the competent authority in this respect. It involves the nuclear authorities of the Länder in the co-operation with other states to the furthest possible extent.</p> <p>The limited human resources of the BMU and the Länder authorities do not in fact allow the participation in intensive international co-operation in all areas. This concerns especially the collaboration of members of staff charged directly with licensing and supervisory tasks on international committees.</p>		

3.2.2 Module 2: Responsibilities and functions of the regulatory body

No	Question	Module 2: Responsibilities and functions of the regulatory body
45.	<p>Does the Regulatory Body have defined policies, safety principles and associated criteria as a basis for its regulatory actions?</p> <p>In order to fulfil its statutory obligations, the regulatory body shall define policies, safety principles and associated criteria as a basis for its regulatory actions.</p> <p><i>SS Ref.: GS-R-1 para 3.1</i></p>	<p style="text-align: right;">Assessment: UM BW 3/BMU 2</p> <p>Answer: Yes. In Germany, the Regulatory Body is divided between the two state levels of the Federation and the Länder owing to the federal structure of the state. At federal level, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) fulfils tasks and functions of the Regulatory Body, and at Länder level it is the supreme Länder authorities (ministries) that are responsible. In Baden-Württemberg, this is the Ministry of the Environment Baden-Württemberg (for more details on the Regulatory Body, see "Report by the Government of the Federal Republic of Germany for the Fourth Review Meeting in April 2008 under the Convention on Nuclear Safety", CNS Report 2008, Chap. 8).</p> <p>The Länder execute the Atomic Energy Act in dealing with the nuclear power plant operators and are responsible for supervision in the sense of licensing and oversight. The BMU, on the other hand, has the task of supervising the work of the Länder and may issue directives to them. The authority to do this is not a state function in dealing with the nuclear power plant operators but a domestic function between the two federal state levels in Germany.</p> <p>The main regulatory functions in dealing with the operators are divided between BMU and UM BW as follows:</p>

No	Question	Module 2: Responsibilities and functions of the regulatory body																
	<table border="1" data-bbox="295 363 1489 821"> <thead> <tr> <th data-bbox="295 363 931 496">Main Regulatory Functions</th> <th data-bbox="931 363 1211 496">Federation „Bund“ (BMU)</th> <th data-bbox="1211 363 1489 496">Federal States „Länder“ (UM BW)</th> </tr> </thead> <tbody> <tr> <td data-bbox="295 496 931 568">Authorization (Module IV)</td> <td data-bbox="931 496 1211 568">Supervising*</td> <td data-bbox="1211 496 1489 568">Responsible</td> </tr> <tr> <td data-bbox="295 568 931 639">Review and Assessment (Module V)</td> <td data-bbox="931 568 1211 639">Supervising*</td> <td data-bbox="1211 568 1489 639">Responsible</td> </tr> <tr> <td data-bbox="295 639 931 711">Inspection and Enforcement (Module VI)</td> <td data-bbox="931 639 1211 711">Supervising*</td> <td data-bbox="1211 639 1489 711">Responsible</td> </tr> <tr> <td data-bbox="295 711 931 821">Development of Regulations and Guides (Module VII)</td> <td data-bbox="931 711 1211 821">Responsible</td> <td data-bbox="1211 711 1489 821">Participating</td> </tr> </tbody> </table> <p data-bbox="295 826 1489 949">* the BMU is responsible for the standard national application of the Atomic Energy Act with regard to lawfulness and appropriateness. In this respect, the Federal Regulator shares not formal, but content-related responsibility regarding the fulfilment of the above-mentioned functions. In case of differing opinions between Federal and Länder Regulator, the Federal Regulator may enforce his opinion with regard to the above-mentioned functions by issuing directives in individual cases.</p> <p data-bbox="277 991 2033 1204">Accordingly, the Länder are responsible for the functions "Authorization" (Module IV), "Review and Assessment" (Module V) and "Inspection and Enforcement" (Module VI). The main function of the Federation on the other hand is the development of Regulations and Guides that put the requirements of the Atomic Energy Act in concrete terms. The regulatory function of the Federation is presented in detail in Module VII (Development of Regulations and Guides). Therefore reference is made to the answers in connection with Module VII. Policies, safety principles and associated criteria of the BMU are not available completely and not fully up to date. Regulations and guides are largely complete but also require updating (see. Module VII).</p> <p data-bbox="277 1238 2040 1297">The fundamental bases of the state actions on the part of the nuclear supervisory authority in Baden-Württemberg are shown below. The UM BW has developed a management system for its work on the basis of the Atomic Energy Act; this can be divided into four levels, as the diagram below shows:</p>	Main Regulatory Functions	Federation „Bund“ (BMU)	Federal States „Länder“ (UM BW)	Authorization (Module IV)	Supervising*	Responsible	Review and Assessment (Module V)	Supervising*	Responsible	Inspection and Enforcement (Module VI)	Supervising*	Responsible	Development of Regulations and Guides (Module VII)	Responsible	Participating		
Main Regulatory Functions	Federation „Bund“ (BMU)	Federal States „Länder“ (UM BW)																
Authorization (Module IV)	Supervising*	Responsible																
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Development of Regulations and Guides (Module VII)	Responsible	Participating																

No	Question	Module 2: Responsibilities and functions of the regulatory body
	<div data-bbox="286 304 1272 817" data-label="Diagram"> </div> <p data-bbox="286 850 2024 911"> Shown at the top are the basics of the management systems with the definition of the mission of the authority, characteristics of its work, the mission statement as frame of action, and the definition of targets. (cf. Organisation Manual -OHB-, Chap. 0). </p> <p data-bbox="286 943 2033 1098"> The next level below is that of the Oversight Concept. This is the programmatic basis for the oversight activity of the authority and describes the general legal conditions of state actions as well as the safety philosophy and methodical proceeding of the authority. It also defines the tasks of the authority and reflects oversight practice in its general context. This is in the form of a systematic representation of those involved in oversight, the objects of oversight, the tasks and criteria, the powers of inspection and inspection methods, the intervention possibilities as well as the obligations of the authority and the cost of oversight (cf. "Concept for regulatory oversight of nuclear power plants in Baden-Württemberg" -AK-). </p> <p data-bbox="286 1129 2024 1284"> On the next level there are the regulatory authority's manuals, containing processes, rules and instructions for the practical work. Oversight is in practice mainly done by the oversight manual. This manual builds on the oversight concept, and its structure is guided by this concept. At the end of each chapter of the Oversight Concept it contains concrete working aids and instructions that supplement the conceptual basics and fill them with detailed content, i.e. instructions, check lists, lists of noted items, and descriptions of procedures that are meant not only to support and facilitate but also to standardise the work (cf. "Manual for regulatory oversight of nuclear power plants in Baden-Württemberg" -AHB-). </p> <p data-bbox="286 1316 2047 1375"> The Oversight Concept together with the Oversight Manual forms the basis of a best possible consistent, orderly, well-targeted and effectively devised regulatory oversight of the nuclear power plants in Baden-Württemberg. It serves for guaranteeing the high level of safety of the nuclear installations in </p>	

No	Question	Module 2: Responsibilities and functions of the regulatory body
	<p>Baden-Württemberg in the long run.</p> <p>A separate manual (Emergency manual –SHB -) regulates the actions of the authority in the event of a nuclear emergency and in any other extraordinary nuclear events. It builds on Section 7.3.5, "Emergency or accident" of the Oversight Manual.</p> <p>Internal organisational arrangements within the authority are contained in the organisation manual (cf. Organisation manual -OHB-).</p>	
46.	<p>Does the Regulatory Body establish, promote or adopt regulations and guides upon which its regulatory actions are based?</p> <p>The regulatory body shall establish, promote or adopt regulations and guides upon which its regulatory actions are based;</p> <p><i>SS Ref.: GS-R-1 para 3.2 (1)</i></p>	Assessment: UM BW 3/BMU 2
47.	<p>Does the Regulatory Body review and assess submissions on safety from the operators both prior to authorization and periodically during operation as required?</p> <p>The regulatory body shall review and assess submissions on safety from the operators both prior to authorization and periodically during operation as required;</p> <p><i>SS Ref.: GS-R-1 para 3.2 (2)</i></p>	Assessment: UM BW 3/BMU 2
	<p>Answer: see Answer Question 45.</p>	
	<p>Answer: Yes. The execution of the licensing procedure is regulated in detail in the Nuclear Licensing Procedures Ordinance (AtVV) under the Atomic Energy Act, as described in Module I.</p> <p>In the licensing procedure, safety analysis reports have to be presented by the applicant as essential licensing documents. These safety analysis reports are reviewed by the competent authority and by authorised experts before a licence is granted.</p> <p>The regulatory authority also demands and reviews safety analysis reports in connection with modifications of the plant or of operation which, although they do not require licensing, are still subject to authority approval, and in connection with refuelling and any safety-relevant events.</p> <p>In addition, further regular reporting obligations are specified in the annexes to the operating licences for the nuclear power plants. For example, there are daily reports about the operation of the plant and about any special operational occurrences within the framework of the so-called <u>I</u>ntegrated</p>	

No	Question Module 2: Responsibilities and functions of the regulatory body
	<p>Safety-Information System (ISIS). The reports to be presented monthly to the authority contain relevant operating data and the information necessary for an assessment of the safety of the plant. These as well as other reports to be presented on a regular basis, i. a. about operational conditions and on safety, are evaluated mainly by the regulatory authority. Sometimes experts are consulted for support (cf. Chap. 7.3.2.1.2 of the Oversight Concept).</p> <p>During the plants' operating lifetimes, comprehensive safety reviews have to be conducted at ten-year intervals, and the results have to be presented to the regulatory authority (§19a AtG). These safety reviews comprise deterministic as well as probabilistic analyses of the safety of the plants and reviews of the safety concepts. The quality of these safety reviews is examined and assessed by the regulatory authorities and their authorised experts (cf. Chap. 7.3.2.3 of the Oversight Concept).</p> <p>More detailed information on the assessment of safety is contained in Chapter 14 (i) of the CNS Report.</p> <p>The BMU fulfils management and steering functions by giving instructions to the Länder authorities within the framework of its supervision of lawfulness and expediency. Such instructions and checks of the BMU are not systematic but rather more selective in individual cases. The requisite depth and follow-up of BMU assessments is not guaranteed due to staffing bottlenecks.</p>
48.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>the facilities, activities or inventories of sources covered by the authorization</i>?</p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) the facilities, activities or inventories of sources covered by the authorization;</p> <p>SS Ref.: GS-R-1 para 3.2 (3) (i)</p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The existing nuclear licences contain exact details on the nuclear installation that is the object of the licence and define exactly the scope of the licensed activities (cf. e.g. the fourth partial licence of GKN II). In other administrative deeds such as modification licences or in regulatory permissions, too, the scope of permission is described precisely in accordance with the principle that administrative decisions should be precise, clear and unambiguous. More on the topic of "Authorisation" can be found in the answers to the questions of Module IV.</p> <p>With the amendment of the Atomic Energy Act of 2002, the legislator decided " to phase out the use of nuclear energy for the commercial generation of electricity in a structured manner, and to ensure on-going operation up until the date of discontinuation" (§ 1 AtG). In line with this purpose of the Atomic Energy Act, no further licences are granted for the construction and operation of nuclear power plants (§ 7 AtG). For the existing power plants this means that nuclear licences will only be granted in connection with essential changes of the plant or its operation. Compared with the regulatory oversight of the nuclear power plants, the licensing procedure has correspondingly become less important.</p>

No	Question	Module 2: Responsibilities and functions of the regulatory body
49.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>the requirements for notifying the Regulatory Body of any modifications to safety related aspects?</i></p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) the requirements for notifying the regulatory body of any modifications to safety related aspects;</p> <p>SS Ref.: GS-R-1 para 3.2 (3) (ii)</p>	Assessment: 3
<p>Answer: Yes. The licences for the nuclear power plants in Baden-Württemberg stipulate that any changes to the plant or its operation have to be treated according to a procedure defined by the authority. In this context a modification procedures is applied which is graded according to the safety-related effects of the planned modifications. Any changes that are to be classified as essential in the sense of § 7 para. 1 AtG require licensing themselves (modification licence). Any changes that have only irrelevant or no safety effects require authority approval or are carried out according to a plant-internal modification procedure (cf. Chap. 7.3.4 of the Oversight Concept and Land-wide standardised modification procedure in Chap. 7.3.4/1 of the Oversight Manual).</p>		
50.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>the obligations of the operator in respect of its facility, equipment, radiation source(s) and personnel?</i></p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) the obligations of the operator in respect of its facility, equipment, radiation source(s) and personnel;</p> <p>SS Ref.: GS-R-1 para 3.2 (3) (iii)</p>	Assessment: 3
<p>Answer: Yes. All obligations of the operator are laid down in the licence and the associated requirements or in the authority approvals unless specified elsewhere by legal requirements.</p>		

No	Question Module 2: Responsibilities and functions of the regulatory body
51.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>any limits on operation and use, (such as dose or discharge limits, action levels or limits on the duration of the authorization)?</i></p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) any limits on operation and use (such as dose or discharge limits, action levels or limits on the duration of the authorization);</p> <p><i>SS Ref.: GS-R-1 para 3.2 (3) (iv)</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The licences specify exactly within which limits and under which boundary conditions the plant may be operated. For example, the licence defines the maximum thermal power and fuel element specifications as well as the permissible activity releases with exhaust air and waste water and the handling of radioactive waste (cf. fourth partial licence GKN II and Chap. 19 (ii) of the CNS Report, "Operational Limits and Conditions for Safe Operation").</p> <p>The operating licences for power reactors according to § 7 AtG are unlimited in time. However, with the entry into force of the new Atomic Energy Act in 2002, the operating lifetime of the existing nuclear power plants were limited by the fact that on the basis of an operating lifetime of 32 years, residual electricity volumes were defined for each nuclear power plant that may yet be produced until the authorisation to power operation expires (§ 7 para. 1a AtG). Other licences may have limits of different kinds, as e.g. the licences for the additional on-site storage places for CASTOR casks at the nuclear power plant sites, which were limited to five years.</p>
52.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>conditioning criteria for radioactive waste processing for existing or foreseen waste facilities</i></p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) conditioning criteria for radioactive waste processing for existing or foreseen waste management facilities;</p> <p><i>SS Ref.: GS-R—para 3.2 (3) (v)</i></p>

No	Question	Module 2: Responsibilities and functions of the regulatory body
	<p>Answer: Yes. Provisions on how to handle the residual radioactive materials arising during the operation of a nuclear power plant, which according to § 9a AtG the waste originator either has to utilise without detrimental effects or dispose of as radioactive waste in a regulated manner, are contained in the licensing scope of the operating licence. The applicant has to draw up a waste management concept in this respect which is a licensing document and thus part of the licence. Further requirements for the handling of residual radioactive materials, e.g. to update the waste management concept, to present documents on waste treatment and waste conditioning measures or on the control of radioactive waste, are laid down in the licensing requirements with legally binding character (cf. Chap. 19 (viii) of the CNS Report and the fourth partial licence GKN II).</p>	Assessment: 3
53.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>any additional separate authorizations that the operator is required to obtain from the Regulatory Body</i>?</p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) any additional separate authorizations that the operator is required to obtain from the regulatory body;</p> <p><i>SS Ref.: GS-R-1 para 3.2 (3) (vi)</i></p>	Assessment: 3
54.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>the requirements for incident reporting</i>?</p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) the requirements for incident reporting;</p> <p><i>SS Ref.: GS-R-1 para 3.2 (3) (vii)</i></p>	

No	Question	Module 2: Responsibilities and functions of the regulatory body
	<p>Answer: Yes. The obligation to report special events in nuclear installations is regulated on the level of statutory ordinance. According to the Radiation Protection Ordinance, the occurrence of an accident, incident or other safety-related significant event has to be reported immediately to the regulatory authority (§ 51 StrlSchV). This general reporting obligation is elaborated in more detail in the Nuclear Safety Officer and Reporting Ordinance (AtSMV). According to this ordinance, the operators of nuclear power plants have to report any accidents, incidents or other events which are important in terms of nuclear safety to the competent regulatory authority according to standardised reporting criteria applying throughout the Federation. A further regulation of the reporting obligation in the licensing decision is not mandatory. The licences may include further stipulations in the form of additional requirements. (cf. Chap. 7.3.2.4.1 of the Oversight Concept and Chap. 19 (vi) of the CNS Report).</p>	Assessment: 3
55.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>the reports that the operator is required to make to the Regulatory Body</i>?</p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) the reports that the operator is required to make to the regulatory body;</p> <p><i>SS Ref.: GS-R-1 para 3.2 (3) (viii)</i></p>	Assessment: 3
56.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>the records that the operator is required to retain and for how long</i>?</p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) the records that the operator is required to retain and the time periods for which they must be retained;</p> <p><i>SS Ref.: GS-R-1 para 3.2 (3) (ix)</i></p>	

No	Question	Module 2: Responsibilities and functions of the regulatory body
	<p>Answer: Yes. The operator's documentation obligations as well as his reporting obligations are subjects of the licensing requirements and of other legislative requirements, such as the Radiation Protection Ordinance. Documentation has to be maintained according to the "Principles for the Applicant's / Licensee's Documentation of Technical Documents Pertaining to the Construction, Operation, and Decommissioning of Nuclear Power Plants", a guideline issued jointly by the Federation and the Länder. The documentation manuals are licensing documents and therefore part of the licence.</p>	Assessment: 3
57.	<p>When issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, does the Regulatory Body's authorization specify <i>the emergency preparedness arrangements</i>?</p> <p>The regulatory body shall provide for issuing, amending, suspending or revoking authorizations, subject to any necessary conditions, that are clear and unambiguous and which shall specify (unless elsewhere specified) the emergency preparedness arrangements.</p> <p><i>SS Ref.: GS-R-1 para 3.2 (3) (x)</i></p>	Assessment: 3
	<p>Answer: Yes. The operator's measures provided to cope with emergencies are specified in the operating rules, e.g. in the emergency manual. As regards content, they are based on the recommendations of the Reactor Safety Commission and are subject to authority examination and approval (cf. Chap.16 and 19 (iv) of the CNS Report).</p>	
58.	<p>Does the Regulatory Body carry out regulatory inspections?</p> <p>The regulatory body shall carry out regulatory inspections;</p> <p><i>SS Ref.: GS-R-1 para 3.2 (4)</i></p>	Assessment: 3
	<p>Answer: Yes. The regulatory authorities do carry out inspections in the plants. More details on the kind and scope of such inspections are given in the answers to the questions in Module VI, 125 ff.</p>	

No	Question Module 2: Responsibilities and functions of the regulatory body
59.	<p>Does the Regulatory body ensure that corrective actions are taken if unsafe or potentially unsafe conditions are detected?</p> <p>The regulatory body shall ensure that corrective actions are taken if unsafe or potentially unsafe conditions are detected;</p> <p><i>SS Ref.: GS-R-1 para 3.2 (5)</i></p> <p style="text-align: right;">Assessment: UM BW 3/BMU 2</p> <p>Answer: Yes. Generally, the operator himself is responsible for the safe operation of his plant and correspondingly has to take care that in the event of any unsafe or potentially unsafe condition, adequate corrective actions are taken without the authority having to demand them first. It is the authority's task, however, to enforce if necessary the establishment of safe and lawful conditions. The possibilities and powers of justified intervention as well as of imposing sanctions in connection with state supervision are described in detail in the answers to the questions in Module VI, 139-149 (cf. also Chap. 8 of the Oversight Concept).</p> <p>Although the staff capacity of the BMU allows it to take the initiative in important individual cases, the Federal Ministry is not in a position to guarantee that events will be followed up in the long run.</p>
60.	<p>Does the Regulatory Body take the necessary enforcement action in the event of violations of safety requirements?</p> <p>The regulatory body shall take the necessary enforcement action in the event of violations of safety requirements.</p> <p><i>SS Ref.: GS-R-1 para 3.2 (6)</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The stipulations and requirements contained in the licensing documents for the safe operation of the plant are, just like the safety requirements defined by laws and ordinances, mandatory and have to be fulfilled by the operator. If any violations of these specifications and requirements become known, the regulatory authority will take the necessary action to enforce a lawful condition. The possibilities and powers of justified intervention as well as of imposing sanctions in connection with state supervision are described in detail in the answers to the questions in Module VI, 139-149 (cf. also Chap. 8 of the Oversight Concept).</p>

No	Question Module 2: Responsibilities and functions of the regulatory body
61.	<p>Does the Regulatory Body establish a process for dealing with applications, such as applications for the issuing of an authorization, accepting a notification or the granting of an exemption, or for the removal from regulatory control?</p> <p>The regulatory body shall establish a process for dealing with applications, such as applications for the issuing of an authorization, accepting a notification or the granting of an exemption, or for removal from regulatory control;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (1)</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The nuclear power plant operators direct their licensing applications, modification notices, etc. to the competent licensing and oversight authorities. With only a few exceptions, such as licences for the construction of interim storage facilities or licences for the carriage of nuclear fuels, it is the Länder authorities that are responsible for dealing with these applications and notifications. The procedure of granting licences according to § 7 AtG is regulated in the Nuclear Licensing Procedures Ordinance (AtVfV). General regulations at Länder level are contained in the administrative procedures acts of the Länder. In Baden-Württemberg, the Ministry of the Environment is the competent authority responsible for licensing according to § 7 AtG. The procedure is described in a Licensing Guideline (cf. Chap. 2.8 of the Organisation Manual - OHB - and the Licensing Guideline of the "Nuclear Supervision, Environmental Radioactivity" Division).</p> <p>One focus of nuclear supervision is the supervision of modifications of the plant or its mode of operation. In Baden-Württemberg, the operators are obliged to notify any modifications of the plant or its operation and to have them examined for their safety relevance and the possible need for having them licensed. Here, the so-called Land-wide standardised modification procedure is applied. According to this Land-wide standardised modification procedure, the modifications are classified into different categories according to their safety-related effects, with graded procedures to be provided for the individual categories (cf. Chap. 7.3.4 of the Oversight Concept and further details in Chap. 7.3.4/1 of the Oversight Manual)</p> <p>The clearance of radioactive materials as well as of moveable objects, buildings, land areas, plants or plant components that have been activated or contaminated is regulated in principle in the Radiation Protection Ordinance. The specific contents of the clearance procedure in Baden-Württemberg is described in detail in a corresponding guideline ("Guideline on Removal according to § 29 StrlSchV").</p>
62.	<p>Does the Regulatory Body establish a process for changing conditions of authorization?</p> <p>The regulatory body shall establish a process for changing conditions of authorization;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (2)</i></p>

No	Question	Module 2: Responsibilities and functions of the regulatory body
	<p>Answer: Yes, it is generally possible to impose additional requirements for a licence that has already been granted if one of the following conditions is fulfilled:</p> <ul style="list-style-type: none"> - the plant poses a risk, or - the state of the art in science and technology has developed thus far that the current state is no longer tolerable. <p>§§ 17 and 18 AtG form the corresponding legal basis. They contain regulations on additional requirements for and the revocation and withdrawal of licences that have already been granted as well as on compensation in such cases.</p>	Assessment: 3
63.	<p>Does the Regulatory Body provide guidance to the operator on developing and presenting safety assessments or any other required safety related information?</p> <p>The regulatory body shall provide guidance to the operator on developing and presenting safety assessments or any other required safety related information;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (3)</i></p>	Assessment: 3
	<p>Answer: Yes. Safety assessments have to be presented to the authority for examination as required e.g. by licensing conditions, in connection with modification procedures, or following events. The scope of the documents and the assessment are also defined, e.g. in the case of events in the Nuclear Safety Officer and Reporting Ordinance (<i>AtSMV</i>) or, for modifications of the plant or its operation, in the Land-wide standardised modification procedure (cf. Chap. 7.3.4/1 of the Oversight Manual). More details on this topic are also given in Chap. 14 (i) of the CNS Report and in the answers to the questions of Module V).</p> <p>In addition, according to § 19 AtG, the nuclear power plant operators have to conduct safety reviews every ten years (cf. also Chap. 14 (i) of the CNS Report). Such a safety review comprises</p> <ul style="list-style-type: none"> - a deterministic safety status analysis in the form of a protection-goal-oriented review of the safety status of the plant, - a probabilistic safety analysis and - a review of the physical protection concept of the plant (deterministic physical protection analysis) <p>The procedures for these reviews are laid down in special guidelines (cf. Guides for the Periodic Safety Review of Nuclear Power Plants):</p> <ul style="list-style-type: none"> - Basic Fundamentals of Periodic Safety Reviews for Nuclear Power Plants - Guideline on Safety Status Analyses - Guideline on Probabilistic Safety Analyses. 	Assessment: 3

No	Question	Module 2: Responsibilities and functions of the regulatory body
64.	<p>Does the Regulatory Body ensure that sensitive information such as proprietary information is protected?</p> <p>The regulatory body shall ensure that proprietary information is protected;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (4)</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The business and trade secrets of the operators as well as personal data are protected as a matter of principle. Corresponding information may only be used for the fulfilment of the tasks regulated by law. The regulations of the trading regulations (§ 139 GewO) and the Environmental Information Act apply.</p> <p>The obligations of the regulatory authority regarding the handling of information are described in Chap. 9 of the Oversight Concept.</p>
65.	<p>Does the Regulatory Body provide an explanation of the reasons for the rejection of a submission?</p> <p>The regulatory body shall provide an explanation of the reasons for the rejection of a submission;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (5)</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The reasons for the rejection of an application are explained in writing in the rejection notification. The applicant is free to take legal action.</p>
66.	<p>Does the Regulatory Body communicate with, and provide information to other competent governmental bodies?</p> <p>The regulatory body shall communicate with, and provide information to, other competent governmental bodies, international organizations and the public;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (6)</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. In line with their competences, other authorities, like e.g. the Baden-Württemberg Economy and Interior Ministries, or special authorities, like the Federal Office for Radiation Protection (BfS) and the Land Institute for the Environment, Measurements and Nature Conservation Baden-Württemberg (LUBW), are tied into the individual procedures or are informed. The agencies and bodies involved in regulatory supervision are described in detail in Chap. 2 of the Oversight Concept.</p>

No	Question Module 2: Responsibilities and functions of the regulatory body
67.	<p>Does the Regulatory Body communicate with, and provide information to, international organization?</p> <p>The regulatory body shall communicate with, and provide information to, other competent governmental bodies, international organizations and the public;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (6)</i></p> <p style="text-align: right;">Assessment: 2</p> <p>Answer: The BMU is responsible as Federal authority for international co-operation and is represented on many relevant committees, either by its own staff members or by staff from the Federal Office for Radiation Protection (BfS) or from expert organisations like Gesellschaft für Anlagen- und Reaktorsicherheit (GRS). There is a comprehensive flow of information between the international organisations and the BMU. Co-operation is particularly strong in the area of the radiation protection and emergency preparedness. Here, the BMU works closely together with the IAEA and the OECD/NEA as well as with the EU.</p> <p>Baden-Württemberg is so far represented only on some international committees, but in future intends to participate in the international exchange of experience at an increased rate. The Ministry of the Environment Baden-Württemberg sees this target confirmed by a corresponding recommendation of the International Committee on Nuclear Technology (ILK) (cf. ILK Report on the Assessment of Nuclear Oversight Activities of the Ministry of Environment, Baden-Württemberg, ILK-28 of December 2006 and Action Plan).</p>
68.	<p>Does the Regulatory Body communicate with, and provide information to, the public?</p> <p>The regulatory body shall communicate with, and provide information to, other competent governmental bodies, international organizations and the public;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (6)</i></p> <p style="text-align: right;">Assessment: 2</p> <p>Answer: The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety informs the general public through</p> <ul style="list-style-type: none"> - media relations (press releases, press conferences, visits to certain locations to which the media are invited), - campaigns, competitions and happenings, - printed matter, - the Internet, - audiovisual media, - implementation of the Environmental Information Act (UIG), - answers to individual enquiries,

No	Question	Module 2: Responsibilities and functions of the regulatory body
	<ul style="list-style-type: none"> - guiding groups of visitors, and - public lectures on demand. <p>The Ministry of the Environment Baden-Württemberg makes a variety of both basic and current information available on the Internet. Furthermore, the public relations activities are supported by active press work. The Nuclear Supervision, Environmental Radioactivity Department intends on the one hand to further expand the Internet presence considerably and on the other hand to get in direct contact with the citizens concerned by staging local events at the nuclear power plant sites and inform them about the activity of the supervisory authority (cf. Action Plan).</p>	
69.	<p>Does the Regulatory Body ensure that operating experience is appropriately analyzed and that lessons to be learned are disseminated?</p> <p>The regulatory body shall ensure that operating experience is appropriately analysed and that lessons to be learned are disseminated;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (7)</i></p> <p>Answer: Yes. A comprehensive system exists in Germany for the collection and use of operating experience from nuclear facilities. Besides specific studies and analyses, it is mainly special occurrences and notifiable events that serve as a source of experience feedback (cf. Chap. 19 (vii) of the CNS Report as well as Chap. 7.3.2.1.11 and 7.3.2.4.2 of the Oversight Concept). There is a need for improvement regarding the international experience feedback, e.g. increased input into the IRS system.</p>	Assessment: 2
70.	<p>Does the Regulatory Body ensure that appropriate records relating to the safety of facilities and activities are retained and retrievable?</p> <p>The regulatory body shall ensure that appropriate records relating to the safety of facilities and activities are retained and retrievable;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (8)</i></p> <p>Answer: Yes. The operator's documentation obligations are laid down in the licence (cf. answer to Question 56).</p> <p>File management and document management of the Nuclear Supervision, Environmental Radioactivity Department at the Ministry of the environment Baden-Württemberg is laid down in detail in the Organisation Manual of the department (cf. Chap. 3.2 of the Organisation Manual). Identification systematically follows a Land-wide standardised filing plan.</p>	Assessment: 3

No	Question Module 2: Responsibilities and functions of the regulatory body
71.	<p>Does the Regulatory Body ensure that its regulatory principles and criteria are adequate and valid?</p> <p>The regulatory body shall ensure that its regulatory principles and criteria are adequate and valid, and shall take into consideration internationally endorsed standards and recommendations;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (9)</i></p> <p style="text-align: right;">Assessment: UM BW 3/BMU 2</p> <p>Answer: Yes. The regulatory activities are based on the department's Oversight Concept, which describes on the one hand the general legal conditions of regulatory supervision and on the other hand the safety philosophy and methodical approach of the regulatory authority. The Oversight Manual, which builds on this concept, contains concrete working aids instructions. The contents of both the Oversight Concept and the Oversight Manual are continually checked by the department along the lines of a PDCA cycle and undergo continual development. No corresponding complete and integrated document exists for the BMU.</p>
72.	<p>Do the Regulatory Body's regulatory principles and criteria take into consideration internationally endorsed standards and recommendations?</p> <p>The regulatory body shall ensure that its regulatory principles and criteria are adequate and valid, and shall take into consideration internationally endorsed standards and recommendations;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (9)</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. Germany participates in the international development of regulations and also implements these in the German regulations (for more details see Chap. 7 (2i) of the CNS Report). For example, in November 2006 the BMU presented a first draft of an action plan for the customisation of regulations and safety practices to the WENRA reference levels, which is developed further in co-ordination with the Länder authorities and after hearing the operators.</p> <p>The Nuclear Supervision, Environmental Radioactivity Department at the Ministry of the Environment Baden-Württemberg follows international developments and takes into account international standards and recommendations in the development of its internal departmental regulations. The regulatory work was last reviewed by the International Committee on Nuclear Technology (ILK) at the end of 2006 when mainly the Oversight Concept and the practical regulatory work of the department were assessed in terms of internationally accepted procedures of oversight and corresponding specifications of the IAEA. As a result of this review the ILK came to the conclusion that the nuclear oversight procedure in Baden-Württemberg is appropriate and effective and meets IAEA requirements (cf. ILK Report on the Assessment of Nuclear Oversight Activities of the Ministry of Environment, Baden-Württemberg, ILK-28 of December 2006).</p>

No	Question Module 2: Responsibilities and functions of the regulatory body
73.	<p>Does the Regulatory Body establish and inform the operator of any requirements for systematic safety reassessment or periodic review?</p> <p>The regulatory body shall establish and inform the operator of any requirements for systematic safety reassessment or periodic safety review;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (10)</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The guidelines on the execution of periodic safety reviews according to § 19a AtG (cf. also answer to Question 63) are continually developed further, and new knowledge is taken into account correspondingly. If revised versions are available, these are published on behalf of the BMU and given to the attention of the operators.</p>
74.	<p>Does the Regulatory Body advise the government on matters relating to the safety of facilities and activities?</p> <p>The regulatory body shall advise the government on matters related to the safety of facilities and activities;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (11)</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: The supervisory authorities of Federation and Länder are ministries and are thus themselves part of the federal and Länder governments. Further special authorities of the nuclear field are consulted at federal and Länder level.</p>
75.	<p>Does the Regulatory Body confirm the competence of personnel responsible for the safe operation of the facility or activity?</p> <p>The regulatory body shall confirm the competence of personnel responsible for the safe operation of the facility or activity;</p> <p><i>SS Ref.: GS-R-1 para 3.3 (12)</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The supervision of the technical qualification of the personnel responsible and of the persons otherwise engaged in the operation of the nuclear power plants is part of the supervisory procedure. The supervisory authority verifies the required technical qualification of the personnel in accordance with the technical qualification guidelines issued jointly by the Federation and the Länder. The preservation of the technical qualification at the respectively required level is also monitored in the supervisory procedure. (cf. Chap. 11 (2) of the CNS Report as well as Chap. 7.3.2.1.14 of the Oversight Concept and 7.3.2.1.14/1 of the Oversight Manual).</p>

No	Question Module 2: Responsibilities and functions of the regulatory body
76.	<p>Does the Regulatory Body confirm that the safety is managed adequately by operator?</p> <p>The regulatory body shall confirm that safety is managed adequately by the operator.</p> <p><i>SS Ref.: GS-R-1 para 3.3 (13)</i></p> <p style="text-align: right;">Assessment: UM BW 3/BMU 2</p> <p>Answer: Yes. The nuclear power plant operators in Baden-Württemberg were obliged in 2003 by an additional requirement to their operating licences to introduce safety management systems to their plants and to apply them in operational practice and improve them continually. The concept, basic structures and selected processes were assessed by the regulatory authority already during the development of the system. The safety management system applied since 2006 continues to be subject to supervision and is reviewed every year (cf. Chap. 7.3.2.1.5 of the Oversight Concept and the answer to Question 129 of Module VI). The BMU has so far not been able to verify that safety management systems (SMS) have been implemented in all German NPPs. The operators have agreed to present a report on implementation by the summer of 2008 (Link: Press Release BMU).</p>
77.	<p>Does the Regulatory Body cooperate with other relevant authorities, advise them and provide them with information in the areas, as necessary?</p> <ol style="list-style-type: none"> 1.Environmental protection; 2.Public and occupational health; 3.Emergency planning and preparedness 4.Radioactive waste management (including determination of national policy); 5.Public liability (including implementation of national regulations and international conventions concerning third party liability); 6.Water use and consumption of food; 7.Land use and planning; and 8.Safety in the transport of dangerous goods. <p>The regulatory body shall co-operate with other relevant authorities, advise them and provide them with information on safety matters in the following areas, as necessary: (1) environmental protection;</p>

No	Question	Module 2: Responsibilities and functions of the regulatory body
	<p>(2) public and occupational health; (3) emergency planning and preparedness; (4) radioactive waste management (including determination of national policy); (5) public liability (including implementation of national regulations and international conventions concerning third party liability); (6) physical protection and safeguards; (7) water use and consumption of food; (8) land use and planning; and (9) safety in the transport of dangerous goods.</p> <p><i>SS Ref.: GS-R-1 para 3.4</i></p>	<p>Assessment: 3</p>
78.	<p>Does the Regulatory Body have additional functions, e.g. independent radiological monitoring in and around nuclear facilities, providing personnel monitoring services and conducting medical examinations, independent testing and quality control measurements, regulatory control of industrial safety?</p> <p>The regulatory body may also have additional functions. Such functions may include: (1) independent radiological monitoring in and around nuclear facilities; (2) independent testing and quality control measurements; (3) initiating, co-ordinating and monitoring safety related research and development work in support of its regulatory functions; (4) providing personnel monitoring services and conducting medical examinations; (5) monitoring of nuclear non-proliferation; and (6) regulatory control of industrial safety.</p> <p><i>SS Ref.: GS-R-1 para 3.5</i></p>	<p>Assessment: 3</p>
	<p>Answer: Yes. Depending on their competence, other authorities are involved in the individual procedures, advised, or provided with information.</p>	
	<p>Answer: Yes. The supervisory authorities of the Federation and the Länder fulfil additional functions in the areas of environmental monitoring of the nuclear power plants and the monitoring of environmental radioactivity as well as in the fields of individual monitoring and medical supervision. The Nuclear Reactor Remote Monitoring System (KFÜ) operated in Baden-Württemberg is integrated into the supervisory procedure for the nuclear power plants (cf. Chap. 7.3.2.1.3 of the Oversight Concept). Some areas are, however, kept clearly separate, such as occupational health and safety, for which the Ministry of the Environment Baden-Württemberg is not responsible.</p>	

No	Question Module 2: Responsibilities and functions of the regulatory body
79.	<p>Where the Regulatory Body has additional functions, does the Regulatory Body ensure that any conflict with its main regulatory functions is avoided?</p> <p>The regulatory body may also have additional functions. Such functions may include:</p> <ul style="list-style-type: none"> (1) independent radiological monitoring in and around nuclear facilities; (2) independent testing and quality control measurements; (3) initiating, co-ordinating and monitoring safety related research and development work in support of its regulatory functions; (4) providing personnel monitoring services and conducting medical examinations; (5) monitoring of nuclear non-proliferation; and (6) regulatory control of industrial safety. <p><i>SS Ref.: GS-R-1 para 3.5</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. It is ensured that the additional tasks are not in conflict with the regulatory core functions of the state regulatory authorities. The department at the Ministry of the Environment Baden-Württemberg in charge of licensing and oversight of the nuclear power plants in Baden-Württemberg does not unite any competing functions in this respect.</p>
80.	<p>Where the Regulatory Body has additional functions, does the Regulatory body ensure that the prime responsibility of the operator for safety is not diminished?</p> <p>The regulatory body may also have additional functions. Such functions may include:</p> <ul style="list-style-type: none"> (1) independent radiological monitoring in and around nuclear facilities; (2) independent testing and quality control measurements; (3) initiating, co-ordinating and monitoring safety related research and development work in support of its regulatory functions; (4) providing personnel monitoring services and conducting medical examinations; (5) monitoring of nuclear non-proliferation; and (6) regulatory control of industrial safety. <p><i>SS Ref.: GS-R-1 para 3.5</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The operator's responsibility remains unaffected by the examination and inspection procedures applied and the fulfilment of any further functions by the regulatory authority.</p>

3.2.3 Module 3: Organisation of the regulatory body – Answers BMU

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
81.	<p>Have one or more authorities been established by the Government to undertake the role of the Regulatory Body?</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body's reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 4.1</i></p>	Assessment: 2
	<p>Answer:</p> <p>Germany is a federal republic. Unless otherwise specified, the execution of federal laws lies within the responsibility of the federal states, the <i>Länder</i>. In the case of the use of nuclear energy, where it is particularly important that laws are executed in a uniform manner across the Federation, the order for the <i>Länder</i> is that they execute the laws acting as agents of the Federation (federal executive administration). This means that in executing the Atomic Energy Act and its associated ordinances, the <i>Länder</i> are under the supervision of the Federation with regard to the lawfulness and expediency of their actions and are subject to the directives issued by the Federal Government (Article 85 Basic Law, § 24 Atomic Energy Act).</p> <p>The nuclear licensing and supervisory authorities are ministries of those <i>Länder</i> in which the site of the nuclear installation is located. The federal supervisory authority is the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).</p> <p>The Federal Ministry of Economics and Technology currently provides approximately € 17 millions annually for reactor safety research. This research deals, among others, with experimental or analytical studies of the plant behaviour of light water reactors under accident conditions, the safety of pressure retaining components, core meltdown, human factors, non-destructive early detection of damage for materials difficult to inspect, and the development of safety analysis methods (cf. CNS-Report, page 8).</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
82.	<p>Does the Regulatory Body's position in the government's organizational structure ensure effective independence from organizations charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities?</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body's reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 4.1</i></p>	Assessment: 2
83.	<p>Is the Regulatory Body structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently?</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body's reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 4.1</i></p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
	<p data-bbox="1854 300 2058 323">Assessment: 2</p> <p data-bbox="248 331 360 355">Answer:</p> <p data-bbox="248 360 2058 512">The structures of the regulatory body do not fully ensure effective and efficient fulfilment of its tasks. The communication structure between Federal Government and <i>Land</i> authorities impairs effectiveness. From the point of view of the BMU it is required that the <i>Länder</i> inform the federal supervisor about safety problems at the plants voluntarily and without delay – upon request also by detailed documents – so that the federal supervisor can determine the necessity for intervention and generic activities in a substantiated manner. Another problem regarding federal supervision is the consultation of experts (cf. questions 84, 90 and 94 and Module 5).</p> <p data-bbox="248 544 2058 603">The assignment of competences and functions of the regulatory body to authorities at the level of the Federal Government and the level of the <i>Länder</i> is presented in Chapter 8(1) (cf. Table 8-2) of the CNS report.</p> <p data-bbox="248 639 2058 699">With regard to safety (without physical protection) of nuclear power plants, Working Group RS I 3 fulfils at the technical level in particular the following tasks:</p> <ul data-bbox="300 703 1240 858" style="list-style-type: none"> • Development of general requirements on law enforcement • Information on operating experience and new findings • Support of projects on technical rule-making • Support of “regulatory research” at expert organisations • Review of lawfulness and expediency in selected administrative procedures <p data-bbox="248 863 2058 986">The group consists of 11 technical/scientific employees (desk officers and assistant desk officers) and 2 legal expert. A lawyer is head of the legal section and controls the affairs of the whole working group, a physicist is head of the technical/scientific section. The tasks in this area are distributed according to technical topics and according to plants so that all there are competent both for specific nuclear power plants and for specific topics with regard to federal supervision and rule-making.</p> <p data-bbox="248 1018 2058 1141">The working group receives expert support, e.g. by the Reactor Safety Commission (RSK) (cf. RSK statutes) and GRS (co-operation agreement) by the subordinate Federal Office for Radiation Protection (BfS) (Act on the Establishment of a Federal Office for Radiation Protection). The tasks delegated to it are, in particular, the first assessment and registration of reportable events, licensing documentation and research management, as far as there is any relation to federal supervision.</p> <p data-bbox="248 1173 2058 1295">Regarding federal supervision on the safety of nuclear power plants, Working Group RS I 3 supports the other divisions of the directorates, in particular the working units competent for research co-ordination and for international aspects of nuclear safety. Within the hierarchy, Working Group RS I 3 is subordinate to head of Directorate RS I, the head of Directorate-General RS, the permanent state secretary and the minister. (cf. also chapter 2.3.1)</p> <p data-bbox="248 1300 2058 1359">For strengthening the rule-making activities of the BMU and interlocking with international findings, a new entity was established which joins these areas of Working Group RS I 3 and the division for international regulatory co-operation.</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
	<p>In case of severe events, an emergency staff can be implemented immediately. The necessary logistic prerequisites are ensured at any time. (Emergency Task Force Organisation)</p>	
84.	<p>Is the structure and size of the Regulatory Body matched with the extent and nature of facilities and activities it regulates?</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body's reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 4.1</i></p> <p>Answer: The number of technical/scientific staff of the authorities still does not meet the requirements to be fulfilled today. Structure and size of the nuclear authorities with regard to the safety of nuclear power plants is described under 83.</p> <p>Altogether, sufficient technical expertise is available in Germany. The ratio authorities/authorised experts of 1 to 10 is imbalanced, since the experts are only consulted to furnish proofs for establishing the facts and must not anticipate the assessment of the authority on whether the plant under supervision is sufficiently safe. This, however, occurs regularly if it is left to the authorised expert to judge a safety problem as “not relevant for start-up”.</p>	Assessment: 2
85.	<p>If the Regulatory Body consists of more than one authority, what are the arrangements in place to ensure that regulatory responsibilities and functions are consistent, clearly defined and coordinated (i.e. that duplication and/or omissions are avoided and that conflicting requirements are not placed on the operator)?</p> <p>If the regulatory body consists of more than one authority, effective arrangements shall be made to ensure that regulatory responsibilities and functions are clearly defined and co-ordinated, in order to avoid any omissions or unnecessary duplication and to prevent conflicting requirements being placed on the operator. The main functions of review and assessment and inspection and enforcement shall be organized in such a way as to achieve consistency and to enable the necessary feedback and exchange of information. In addition, the authorities responsible for the different disciplines concerned in the regulatory process, such as those responsible for nuclear, radiation, radioactive waste and transport safety, shall be effectively co-ordinated.</p> <p><i>SS Ref.: GS-R-1 para 4.2</i></p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
	<p>Answer: Until today, federal supervision has not achieved a uniform application of safety criteria in Germany. This is due, among others, that there are no consistent review criteria for nuclear power plants. Consistent application is only possible where the same criteria have been agreed upon in consensus between the Federal Government and the <i>Länder</i>.</p> <p>In the Federal Republic of Germany, it is ensured by the constitutional regulations on the fulfilment of the authority's duties that finally, in the individual administrative procedure, <u>one</u> decision on the merits of the case is taken. This decision is taken by the supervisory or licensing authority, or, if federal supervision intervenes, the BMU. Also in this case, the competence to execute the duties (= binding actions of the authority towards the operator) remains with the <i>Land</i> authority.</p> <p>Less clearly defined is the responsibility in the general context, i.e. beyond concrete administrative procedures. The BMU assumes that the <i>Land</i> authorities also adhere to general provisions of the BMU as supreme nuclear authority and make all necessary data and information available to the BMU. The majority of the <i>Land</i> authorities, however, only want to adhere to legal provision and the rules unanimously adopted by the <i>Länder</i> Committee for Nuclear Energy (LAA) and only make "basic information" available to the BMU.</p> <p>For <i>Länder</i> Committee for Nuclear Energy (LAA), cf. CNS report, 8.1</p>	<p>Assessment: 2</p>
86.	<p>Where the Regulatory Body consists of more than one authority, are they organized in such a way as to enable the necessary feedback and exchange of information?</p> <p>If the regulatory body consists of more than one authority, effective arrangements shall be made to ensure that regulatory responsibilities and functions are clearly defined and co-ordinated, in order to avoid any omissions or unnecessary duplication and to prevent conflicting requirements being placed on the operator. The main functions of review and assessment and inspection and enforcement shall be organized in such a way as to achieve consistency and to enable the necessary feedback and exchange of information. In addition, the authorities responsible for the different disciplines concerned in the regulatory process, such as those responsible for nuclear, radiation, radioactive waste and transport safety, shall be effectively co-ordinated.</p> <p><i>SS Ref.: GS-R-1 para 4.2</i></p>	<p>Assessment: 2</p> <p>Answer: Experience feedback and exchange of information between the Federal Government and the <i>Länder</i> only take place to an insufficient extent. In particular: There is no general obligation to report on upcoming significant and general decisions of the <i>Land</i> nuclear authorities to enable early intervention by the BMU.</p> <p>The BMU repeatedly notices that information is not substantial and detailed enough. There were also conflicts on the question in which form information</p>

No	Question Module 3: Organisation of the regulatory body – Answers BMU
	<p>is submitted to the Federal Government (participation of the Federal Government in interviews of the operator personnel and authorised experts and whether an in-depth obligation to provide information to the Federal Government only exists if it issued a directive (= conferment of the competence for the subject matter).</p> <p>A general information exchange takes place at the meetings of the LAA both on major topics and on current issues by reporting. The necessary exchange of information and feedback only takes place there partially. Thus, it is not a comprehensive approach. Further exchange of information takes place by following reporting requirements:</p> <p>a) <i>BMU > Länder</i> The BMU informs the <i>Länder</i> by means of “information notices” (GRS commissioned generally and in the individual case <i>ad hoc</i> with prior review by the BMU) on events at nuclear installations in Germany and abroad, as far as findings could also be relevant for (other) installations in Germany or on new scientific findings that could be relevant for the installations. In urgent cases, the BMU informs in advance by circular letters. The BfS (Incident Registration Centre) informs the <i>Länder</i>, operators and experts on behalf of the BMU by quarterly reports about the evaluation of reportable events.</p> <p>b) <i>Länder > BMU</i> The <i>Länder</i> inform the BMU as agreed or due to a general request (circular letter) about</p> <ul style="list-style-type: none"> • reportable events (reporting form) • licences granted (transmittal) • applications for <ul style="list-style-type: none"> ○ thermal power increase ○ burn-up increase ○ digital I&C for safety systems ○ test interval extensions • The treatment of “information notices” (see above) <p>Further, the <i>Länder</i> inform in matters on which the BMU requests the Land to report for a special reason. However, the <i>Länder</i> ask the BMU at their own discretion to submit statements – also with consultation of the RSK – on pending important decisions. The BMU decides whether it will make a statement. In this case, the <i>Land</i> will, in practice, follow the reasoning of the BMU.</p>
87.	<p>Is the Regulatory Body entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection?</p> <p>If the regulatory body is not entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and</p>

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
	<p>assessment or inspection, it shall seek advice or assistance, as appropriate, from consultants. Whoever may provide such advice or assistance (such as a dedicated support organization, universities or private consultants), arrangements shall be made to ensure that the consultants are effectively independent of the operator. If this is not possible, then advice or assistance may be sought from other States or from international organizations whose expertise in the field concerned is well established and recognized.</p> <p><i>SS Ref.: GS-R-1 para 4.3</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: Federal supervision relies to a large extent on independent experts (cf. CNS report, 8(1)).</p> <p>Also cf. question 91.</p> <p>Within the framework of its controlling and managing functions, the federal supervisor is directly responsible for review and assessment and indirectly for inspections. The performance of inspections falls within the responsibility of the <i>Land</i> authorities. In the individual case, the federal supervisor may assume the competence for the subject matter regarding review and assessment, inspections may be initiated by the federal supervisor and subjected to conditions.</p>
88.	<p>If the Regulatory Body is not entirely self-sufficient in all the technical or functional areas, does it seek advice or assistance from consultants (such as private consultants, universities or dedicated support organizations)?</p> <p>If the regulatory body is not entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection, it shall seek advice or assistance, as appropriate, from consultants. Whoever may provide such advice or assistance (such as a dedicated support organization, universities or private consultants), arrangements shall be made to ensure that the consultants are effectively independent of the operator. If this is not possible, then advice or assistance may be sought from other States or from international organizations whose expertise in the field concerned is well established and recognized.</p> <p><i>SS Ref.: GS-R-1 para 4.3</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. (by GRS and other experts); the BfS as part of the authority is not accounted as consultant.</p>

No	Question Module 3: Organisation of the regulatory body – Answers BMU
89.	<p>Does the Regulatory Body make arrangements to ensure that the consultants are effectively independent of the operator?</p> <p>If the regulatory body is not entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection, it shall seek advice or assistance, as appropriate, from consultants. Whoever may provide such advice or assistance (such as a dedicated support organization, universities or private consultants), arrangements shall be made to ensure that the consultants are effectively independent of the operator. If this is not possible, then advice or assistance may be sought from other States or from international organizations whose expertise in the field concerned is well established and recognized.</p> <p><i>SS Ref.: GS-R-1 para 4.3</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Independence, as we define it, means that the consultants in the field of nuclear technology do not provide advisory services for the plant operators as an institution. Moreover, individual staff members must not provide advisory services for the plant operators either or receive any benefit or advantage from them. Exceptions to this general requirement "no advisory services for operators" may be made in special cases upon approval of the authority.</p> <p>The exclusion of advisory services for the operator is regulated by contract (cf. framework contract GRS – BMU).</p> <p>The general provisions of administrative procedure law on the required independence of authority staff also apply to the consultants (authorised experts) (§§ 26, 20-21 VwVfG).</p> <p>The Framework Guideline on the Preparation of Expert Opinions in Nuclear Administrative Procedures of 15.12.1983 (GMBI. 1984, S. 21) stipulates in particular that the expert in his expert opinion</p> <ul style="list-style-type: none"> – has to distinguish clearly between facts, information provided by the applicant and own calculations, assumptions, examination results and conclusions, – has to emphasise clearly any discrepancies with the information provided by the applicant with regard to facts, results and assessments, and – with his signature has to certify that he prepared his expert opinion free from any directives concerning the results. <p>As far as the BMU refers to consultants for its regulatory activities, these have to adhere to the expert principles of federal supervision on nuclear power plants of July 2001 which prescribe application of the above framework guideline and include, in particular, supplementary regulations on independence.</p>
90.	<p>If independent advice or assistance is unavailable does the Regulatory Body seek advice or assistance from other States or from international organizations whose expertise in the field is well established and recognized?</p> <p>If the regulatory body is not entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection, it shall seek advice or assistance, as appropriate, from consultants. Whoever may provide such advice or assistance (such as a dedicated support organization, universities or private consultants), arrangements shall be made to ensure that the consultants are effectively independent of the operator. If this is not possible, then advice or assistance may be sought from other States or from international organizations whose expertise in the field concerned is well established and recognized.</p>

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
	<p><i>SS Ref.: GS-R-1 para 4.3</i></p>	Assessment: 3
91.	<p>Does the use of consultants relieve the Regulatory Body of any of its responsibilities?</p> <p>The use of consultants shall not relieve the regulatory body of any of its responsibilities. In particular, the regulatory body's responsibility for making decisions and recommendations shall not be delegated.</p> <p><i>SS Ref.: GS-R-1 para 4.4</i></p>	Assessment: 2
	<p>Answer: Federal supervision requires that the nuclear authorities also assume responsibility for the contents of decisions.</p> <p>Sometimes, responsibility for the contents is delegated to the consultants of the federal or <i>Land</i> authority. This is the case if experts are not only consulted for fact finding but make recommendations that are not always reviewed by the authority to the required depth.</p> <p>Also in these cases, the formal responsibility remains with the authorities.</p> <p>Authorities have to be equipped such that the executive can completely control and assess the process of consulting experts and the results. This is not the case for federal supervision in Germany due to the imbalanced ratio of the number of authorised experts and the number of competent and qualified authority staff. Therefore, in practice, the expert may decide whether a safety deficiency can be accepted or not.</p> <p>There is the problem that there are measures of the operator which only require approval by the authorised expert instead of approval by the authority. This takes place, however, within a framework given by the licence and is limited to measures of minor significance for safety. Nevertheless, the federal supervisor also notes that the experts are taking the position of the authority by not only establishing the facts but also anticipate the decision of the authority: "not relevant for start-up", "no short-term measures required". In these cases, the authority can override the recommendation of the expert. This, however, requires considerable standing of the individual official who has to assert his point of view within the hierarchy and in possible legal proceedings against the expertise of the large technical expert organisations (TÜV) and the operator. Cases of conflict in which the authority makes a stand against the TÜV are therefore very rare.</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
92.	<p>When the Regulatory Body uses consultants is it ensured that the responsibility for making regulatory decisions and recommendations is not delegated? Do decisions and recommendations remain under the responsibility of Regulatory Body and are not delegated?</p> <p>The use of consultants shall not relieve the regulatory body of any of its responsibilities. In particular, the regulatory body's responsibility for making decisions and recommendations shall not be delegated.</p> <p><i>SS Ref.: GS-R-1 para 4.4</i></p>	
	<p>Answer: cf. question 91</p>	Assessment: 2
93.	<p>Has the Regulatory Body established and implemented a systematic approach to quality management that extends throughout the range of responsibilities and functions undertaken?</p> <p>The regulatory body shall establish and implement appropriate arrangements for a systematic approach to quality management which extend throughout the range of responsibilities and functions undertaken.</p> <p><i>SS Ref.: GS-R-1 para 4.5</i></p>	
	<p>Answer: Reference is made to the answers on Module VIII, question 196 ff.</p>	Assessment: --
94.	<p>Does the Regulatory Body employ sufficient staff with the necessary qualification, experience and expertise to adequately fulfil its regulatory functions and responsibilities?</p> <p>The regulatory body shall employ a sufficient number of personnel with the necessary qualifications, experience and expertise to undertake its functions and responsibilities. It is likely that there will be positions of a specialist nature and positions needing more general skills and expertise. The regulatory body shall acquire and maintain the competence to judge, on an overall basis, the safety of facilities and activities and to make the necessary regulatory decisions.</p> <p><i>SS Ref.: GS-R-1 para 4.6</i></p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
	<p>Answer: The qualification of those performing tasks described under 83 is at a high level and also balanced regarding age structure and experience. However, the number of technical/scientific BMU staff is not sufficient to be able to cope with the requirements imposed on the BMU today. From the point of view of the BMU, this also applies to the <i>Länder</i> (no capacities for international co-operation, process of review of nuclear rules and regulations, comprehensive co-ordination of expert consultation). The BMU tries to compensate for this deficit partly by increased delegation to GRS and RSK. At present, activities related to the federal authority cannot be delegated to a larger extent to the BfS due to its small number of personnel.</p>	Assessment: 2
95.	<p>Does the Regulatory Body have a recruitment strategy and staffing plan in order to acquire and maintain the competence to judge, on an overall basis, the safety of facilities and activities and make the necessary regulatory decisions?</p> <p>The regulatory body shall employ a sufficient number of personnel with the necessary qualifications, experience and expertise to undertake its functions and responsibilities. It is likely that there will be positions of a specialist nature and positions needing more general skills and expertise. The regulatory body shall acquire and maintain the competence to judge, on an overall basis, the safety of facilities and activities and to make the necessary regulatory decisions.</p> <p><i>SS Ref.: GS-R-1 para 4.6</i></p>	Assessment: 3
	<p>Answer: The general rules of personnel planning of the BMU are applicable. For federal supervision, a schedule was developed for personnel planning in the Directorate-General Reactor Safety. The staffing is determined annually by parliamentary resolution.</p>	
96.	<p>Does the Regulatory Body have a well-defined training programme to ensure that its staff acquire the proper skills, maintain the relevant competencies and are aware of technological developments and new safety principles and concepts?</p> <p>In order to ensure that the proper skills are acquired and that adequate levels of competence are achieved and maintained, the regulatory body shall ensure that its staff members participate in well defined training programmes. This training should ensure that staff are aware of technological developments and new safety principles and concepts.</p> <p><i>SS Ref.: GS-R-1 para 4.7</i></p>	Assessment: 2
	<p>Answer: There is no comprehensive training programme. There are offers that can be made use of individually by the staff members which is supported by the superiors. For new staff members of the federal supervisor, there is a training opportunity in the framework of which individual technical/scientific instructions by experienced GRS experts are given. (cf. Training of Authority Staff in Germany). This opportunity, however, does not represent a</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
	consistent, comprehensive training programme in terms of the question. A systematic training programme can only be introduced after implementation of the schedule.	
97.	<p>In conducting its own review and assessment does the Regulatory Body rely solely on any safety assessment performed for it by consultants or on that conducted by the operator?</p> <p>In undertaking its own review and assessment of a safety submission presented by the operator, the regulatory body shall not rely solely on any safety assessment performed for it by consultants or on that conducted by the operator. Accordingly, the regulatory body shall have a full time staff capable of either performing regulatory reviews and assessments, or evaluating any assessments performed for it by consultants.</p> <p><i>SS Ref.: GS-R-1 para 4.8</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: The BMU does not solely rely on the assessment of the consultants and operator. Also cf. answer to question 91.</p>
98.	<p>Does the Regulatory Body have sufficient staff capable of either performing regulatory reviews and assessments or evaluating reviews and assessments performed for it by consultants?</p> <p>In undertaking its own review and assessment of a safety submission presented by the operator, the regulatory body shall not rely solely on any safety assessment performed for it by consultants or on that conducted by the operator. Accordingly, the regulatory body shall have a full time staff capable of either performing regulatory reviews and assessments, or evaluating any assessments performed for it by consultants.</p> <p><i>SS Ref.: GS-R-1 para 4.8</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: cf. question 91</p> <p>In the individual case, the BMU is able to perform review and assessment to the required depth by pooling staff resources available at the BMU. However, this can only be done by neglecting other major tasks. The capacities of federal supervision are limited such that only few cases can be handled.</p>

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
99.	<p>Does the Regulatory Body or Government use Advisory Bodies?</p> <p>The government or the regulatory body may choose to give formal structure to the processes by which expert opinion and advice are provided to the regulatory body; the need or otherwise for such formal advisory bodies is determined by many factors. When the establishment of advisory bodies is considered necessary, on a temporary or permanent basis, such bodies shall give independent advice. The advice given may be technical or non-technical (in advising, for example, on ethical issues in the use of radiation in medicine). Any advice offered shall not relieve the regulatory body of its responsibilities for making decisions and recommendations.</p> <p><i>SS Ref.: GS-R-1 para 4.9</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. For giving advice to the BMU on safety issues and associated issues related to the physical protection of nuclear installations and the disposal of radioactive wastes, the Reactor Safety Commission (RSK) was established. Composition and advisory activities are regulated in the statutes passed by the BMU. The BMU also established the Nuclear Safety Standards Commission (KTA, cf. KTA Legal Basis and Procedures) which develops nuclear safety standards that are published by the BMU. The statements of the RSK and the safety standards of the KTA are considered as applicable criteria for the assessment of plant safety, unless in the individual case there was no further development of the state of the art.</p>
100.	<p>Does the Regulatory Body or Government give formal structure to the processes by which it obtains expert opinion and advice from Advisory Bodies?</p> <p>The government or the regulatory body may choose to give formal structure to the processes by which expert opinion and advice are provided to the regulatory body; the need or otherwise for such formal advisory bodies is determined by many factors. When the establishment of advisory bodies is considered necessary, on a temporary or permanent basis, such bodies shall give independent advice. The advice given may be technical or non-technical (in advising, for example, on ethical issues in the use of radiation in medicine). Any advice offered shall not relieve the regulatory body of its responsibilities for making decisions and recommendations.</p> <p><i>SS Ref.: GS-R-1 para 4.9</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. Statutes exist for each advisory body of the Federal Government (RSK statutes) that regulate the advisory activities and there are internal regulations of the BMU (BMU QM Process: “Work instructions - Order for advising, issued to the RSK/SSK”) for the assignment of advisory contracts.</p>

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
101.	<p>How is it assured that the advice from the Advisory Bodies is independent?</p> <p>The government or the regulatory body may choose to give formal structure to the processes by which expert opinion and advice are provided to the regulatory body; the need or otherwise for such formal advisory bodies is determined by many factors. When the establishment of advisory bodies is considered necessary, on a temporary or permanent basis, such bodies shall give independent advice. The advice given may be technical or non-technical (in advising, for example, on ethical issues in the use of radiation in medicine). Any advice offered shall not relieve the regulatory body of its responsibilities for making decisions and recommendations.</p> <p><i>SS Ref.: GS-R-1 para 4.9</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The advisory commission of the BMU is the RSK. The independence of advisory services is assured by the regulations on partiality, the personal appointment of the members and freedom from instructions. Composition and advisory activities are regulated in the statutes passed by the BMU. In order to ensure well-balanced advice, the RSK shall be composed such that the entire range of views acceptable according to the state of the art is represented. A member of the RSK is excluded from advisory activities in individual licensing or supervisory procedures if partiality is to be feared (e.g. because he is an employee of the operator or, besides his activities in the RSK in the matter being discussed or to be discussed in the Commission, prepared an expert opinion for the operator, gave advice to him or otherwise provided services to him).</p> <p>The following applies to the RSK: Statements and specifications of this commission only will have a binding effect if they are applied by the competent authority in the administrative procedure. Thus, the decision on how to apply them lies within the responsibility of the authority.</p>
102.	<p>How is it ensured that the advice given does not in any way relieve the Regulatory Body of its responsibilities to make decisions and recommendations?</p> <p>The government or the regulatory body may choose to give formal structure to the processes by which expert opinion and advice are provided to the regulatory body; the need or otherwise for such formal advisory bodies is determined by many factors. When the establishment of advisory bodies is considered necessary, on a temporary or permanent basis, such bodies shall give independent advice. The advice given may be technical or non-technical (in advising, for example, on ethical issues in the use of radiation in medicine). Any advice offered shall not relieve the regulatory body of its responsibilities for making decisions and recommendations.</p> <p><i>SS Ref.: GS-R-1 para 4.9</i></p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
	<p>Answer: cf. question 91</p> <p>(cf. RSK statement “Requirements for the demonstration of effective emergency core cooling during loss-of-coolant accidents involving the release of insulation material and other substances“ and RSK statement „Loss-of-coolant accidents involving the release of insulation material and other substances in pressurised water reactors - removal of deposits on sump strainers“)</p>	Assessment: 2
103.	<p>Does the Regulatory Body promote a frank and open and formal relationship with the operator?</p> <p>Mutual understanding and respect between the regulatory body and the operator, and a frank, open and yet formal relationship, shall be fostered.</p> <p><i>SS Ref.: GS-R-1 para 4.10</i></p>	Assessment: 3
104.	<p>What formal arrangements exist to facilitate discussions between the Regulatory Body and the operator?</p> <p>Mutual understanding and respect between the regulatory body and the operator, and a frank, open and yet formal relationship, shall be fostered.</p> <p><i>SS Ref.: GS-R-1 para 4.10</i></p>	Assessment: 3
	<p>Answer: cf. question 103</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers BMU
105.	<p>Has the State established arrangements for the exchange of safety related information: bi-laterally or regionally, with neighbouring States and other interested States, and with relevant intergovernmental organizations, both to fulfil safety obligations and to promote cooperation?</p> <p>The safety of facilities and activities is of international concern. Several international conventions relating to various aspects of safety are in force. National authorities, with the assistance of the regulatory body, as appropriate, shall establish arrangements for the exchange of safety related information, bilaterally or regionally, with neighbouring States and other interested States, and with relevant intergovernmental organizations, both to fulfil safety obligations and to promote co-operation.</p> <p><i>SS Ref.: GS-R-1 para 4.11</i></p>	
	<p>Answer:</p> <p>Germany signed bilateral agreements with six of the nine neighbouring countries on information exchange on nuclear installations in the border regions (the Netherlands, France, Switzerland, Austria, the Czech Republic and Denmark). Within the framework of these agreements, joint commissions for regular consultations on questions of reactor safety and radiation protection were formed with five countries (the Netherlands, France, Switzerland, Austria and the Czech Republic). Bilateral agreements on the safety of nuclear installations and radiation protection were signed with more than 20 countries. Of political significance are the agreements with neighbouring and EU countries and the Central and Eastern European countries, countries with German nuclear technology, as well with the USA, Japan and China. Further, there is a close co-operation with all EU member states within the framework of the EURATOM Treaty.</p>	<p>Assessment: 3</p>

3.2.4 Module 3: Organisation of the regulatory body – Answers UM BW

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
81.	<p>Have one or more authorities been established by the Government to undertake the role of the Regulatory Body?</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body's reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 4.1</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Germany is a federal republic. Thus, the “regulatory body” consists of authorities of the Federation and the <i>Länder</i> (cf. CNS report, 8(1)).</p> <p>In Baden-Württemberg, licensing and oversight for nuclear power plants falls within the responsibility of the Ministry of the Environment of the <i>Land</i> Baden-Württemberg. In licensing procedures, including subsequently imposed obligations, the approval of the Ministry of the Interior and the Ministry of Economic Affairs of Baden-Württemberg to licensing notices and imposed obligations is required. In the field of radiological environmental monitoring, the Ministry of the Environment is supported by the Institute for Environment, Measurements and Nature Conservation Baden-Württemberg (LUBW). In Baden-Württemberg, disaster control measures for nuclear accidents fall within the responsibility of the Ministry of the Interior and the subordinate regional councils. These authorities will in the case of a disaster receive advice and support by the Ministry of the Environment regarding the assessment of the radiological situation.</p>

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
82.	<p>Does the Regulatory Body's position in the government's organizational structure ensure effective independence from organizations charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities?</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body's reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 4.1</i></p>	Assessment: 3
<p>Answer: The independence of the "regulatory body" from organisations charged with the promotion of nuclear technologies or those using them with the associated responsibilities is described in the CNS report (cf. CNS report, 8(2)). The following applies to the competent Ministry of the Environment in the <i>Land</i> of Baden-Württemberg: The Ministry of the Environment has no tasks or responsibilities regarding the promotion or use of nuclear energy.</p> <p>Note: Due to the portfolio demarcation of the ministries, the Ministry of Economic Affairs has no possibility to prevent subsequently imposed obligations.</p>		
83.	<p>Is the Regulatory Body structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently?</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body's reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 4.1</i></p>	Assessment: 3
<p>Answer: The allocation of responsibilities and functions of the regulatory body to federal authorities and authorities of the <i>Länder</i> is presented in Chapter 8 of the CNS report (cf. Tab. 8-2).</p> <p>The organisation of the Ministry of the Environment is defined in the organisational chart (cf. Chapter 1.1 of the organisational manual) and in the</p>		

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
	<p>schedule of responsibilities (cf. Chapter 0 of the organisational manual). The tasks of the “regulatory body” are fulfilled by Division 3 Nuclear Supervision, Environmental Radioactivity of the Ministry of the Environment.</p> <p>The fundamental organisation principle in Division 3 is that for oversight of a nuclear installation, only one section is in charge. Thus, plant-specific information is available at this section. Regulatory requirements on the nuclear installation can only be made by this section or in agreement with this section. In this way, it is also ensured that no concurrent requirements can be imposed on a plant.</p> <p>Sections 33 and 34 are responsible for licensing and oversight at the nuclear power plants GKN, KWO and KKP. Sections 35 and 36 oversee other nuclear facilities. Moreover, they deal, as Sections 31 and 32 do, with cross-sectional tasks performed for all nuclear installations and facilities. In this way, similar procedures are performed in a comparable manner for all nuclear power plants and unnecessary extra work is avoided. In case of such general procedures, the sections competent for the respective plants are informed and involved in the decision-making processes. Examples for such tasks and procedures are the radiological environmental monitoring of the nuclear power plants, radioactive waste and spent fuel management, clearance of radioactive substances according to § 29 of the Radiation Protection Ordinance, supervisory accompaniment of development and introduction of safety management systems or the implementation of measures for the protection of nuclear power plants against aircraft crash due to a terrorist attack.</p> <p>For coping with special events (design-basis accident, emergency, event relevant for physical protection, etc.), Division 3 Nuclear Supervision, Environmental Radioactivity provided an emergency task force organisation. It modifies the organisation of the sections within the division and consists of task forces communication, radiation protection and engineering. The emergency task force organisation is initiated and managed by the division head. Details are regulated in the emergency manual of the division.</p> <p>For special issues, technical co-ordinators are appointed in Division 3 (cf. Chapter 1.7 of the organisational manual). These persons have in-depth technical knowledge in the respective fields. They support the plant-related sections in their fields of expertise and deepen their knowledge by further qualification measures.</p> <p>Cross-sectional working groups are established for special tasks. Project or working groups are set up by the division head in agreement with the sections heads.</p> <p>A permanent cross-sectional working group is the clearing agency for reportable events (cf. Chapter 1.2 of the organisational manual). Its task is the fast technical assessment of a (potentially) reportable situation and to support the plant-related section this way regarding measures to be taken. In 2007, the so-called MTO group was installed as another permanent cross-sectional working group (cf. Chapter 1.3 of the organisational manual). It serves to strengthen the MTO approach, i.e. an integral approach comprising man, technology and organisation, in the supervisory procedures.</p> <p>The structural organisation and the special organisational units (sections, clearing agency, MTO group, emergency organisation, technical co-ordinators, project and working groups) are presented in detail in the organisational manual of the Division Nuclear Supervision, Environmental Radioactivity.</p> <p>The fundamental organisation principle of allocating responsibilities according to plants – contrary to an organisation according to technical fields –</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
		<p>exists since the erection of the nuclear power plants and has proven itself. The allocation of tasks and plants to the different sections is adjusted according to the requirements. So, a new cross-sectional section “General affairs of nuclear supervision” was established in 2003. This section deals with general technical issues, until then dealt with by Section 31, and new tasks, in particular oversight in the personnel/organisational area. In 2004, one section was dissolved. The tasks were allocated to Section 33 (KWO plant), Section 35 (KNK facility) and Section 34 (Siemens training reactors).</p> <p>Findings and experiences are used for organisation optimisation. So, the clearing agency for reportable events has been established at the beginning of 2002. In 2007, the MTO group was introduced as cross-sectional organisation.</p> <p>For in-depth reviews by the authority, oversight priorities are defined. For the work on oversight priorities, temporary cross-sectional project groups are established.</p> <p>For the topics of organisational review and available resources, cf. answer to question 84.</p> <p>The organisation in the Ministry of the Environment and its Division Nuclear Supervision, Environmental Radioactivity allows an effective and efficient fulfilment of responsibilities and tasks.</p>
84.	<p>Is the structure and size of the Regulatory Body matched with the extent and nature of facilities and activities it regulates?</p> <p>The regulatory body shall be structured so as to ensure that it is capable of discharging its responsibilities and fulfilling its functions effectively and efficiently. The regulatory body shall have an organizational structure and size commensurate with the extent and nature of the facilities and activities it must regulate, and it shall be provided with adequate resources and the necessary authority to discharge its responsibilities. The structure and size of the regulatory body are influenced by many factors, and it is not appropriate to require a single organizational model. The regulatory body’s reporting line in the governmental infrastructure shall ensure effective independence from organizations or bodies charged with the promotion of nuclear or radiation related technologies, or those responsible for facilities or activities.</p> <p><i>SS Ref.: GS-R-1 para 4.1</i></p>	
	<p>Answer:</p> <p>Yes. The size of Division 3, responsible in the Ministry of the Environment for nuclear supervision, is correlated with its tasks. The number of officials competent for oversight increased with the erection of the nuclear power plants. Increases in personnel strength have, for example, also been made after setting-up of the parliamentary investigation committee on the Obrigheim nuclear power plant in 1992 and after an organisational review in 2003. With the reduced number of tasks combined with the departure of personnel, some posts have been cut. The personnel strength of the division today corresponds approximately to that of 1990.</p> <p>Regarding the organisational structure and size of Division 3 it is to be considered that experts are consulted to a large extent. For the four nuclear power plant units in operation, there are about 120 full-time employees on the part of TÜV Süd ET.</p>	Assessment: 3

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
	<p>The manner, in which the tasks are fulfilled in Division 3 and the resources required for it are reviewed from time to time and adjusted to the requirements. The last major reviews of the assignment of tasks were performed in 2002 by the Kienbaum consulting company and in 2006 by a working group of the International Committee on Nuclear Technology (Internationale Länderkommission Kerntechnik - ILK). The results of the review were evaluated and adjustments in the task areas performed. So, for example, in 2003, the number of personnel and the budget for further qualification measures were increased. In 2007, the MTO group was introduced as new organisational unit.</p> <p>Structure and size of Division 3 commensurate with its tasks and responsibilities.</p>	
85.	<p>If the Regulatory Body consists of more than one authority, what are the arrangements in place to ensure that regulatory responsibilities and functions are consistent, clearly defined and coordinated (i.e. that duplication and/or omissions are avoided and that conflicting requirements are not placed on the operator)?</p> <p>If the regulatory body consists of more than one authority, effective arrangements shall be made to ensure that regulatory responsibilities and functions are clearly defined and co-ordinated, in order to avoid any omissions or unnecessary duplication and to prevent conflicting requirements being placed on the operator. The main functions of review and assessment and inspection and enforcement shall be organized in such a way as to achieve consistency and to enable the necessary feedback and exchange of information. In addition, the authorities responsible for the different disciplines concerned in the regulatory process, such as those responsible for nuclear, radiation, radioactive waste and transport safety, shall be effectively co-ordinated.</p> <p><i>SS Ref.: GS-R-1 para 4.2</i></p>	Assessment: 3
	<p>Answer:</p> <p>The enforcement tasks in the field of licensing and oversight of nuclear power plants in Baden-Württemberg lie within the responsibility of Division 3 at the Ministry of the Environment. Interfaces with other authorities have been defined. Procedures for mutual involvement and information have been established. In the licensing procedure, the co-operation of the licensing authorities Ministry of the Environment, Ministry of the Interior and the Ministry of Economic Affairs are regulated. The different ministry units involved review the aspects that lie within their sphere of responsibility (Ministry of Economic Affairs: construction law, energy economics; Ministry of the Interior: physical protection, disaster control; Ministry of the Environment: nuclear safety, water law, immission control, and other aspects). The results are brought together in a joint licence for which responsibility is taken by all authorities involved in the licensing. The Ministry of the Environment has the lead (procedure control). In case of modifications not subject to licensing, the Ministry of the Environment asks the authorities concerned to submit technical statements before approving the modification. The proceeding is stipulated in the <i>Land-wide standardised modification procedure</i> (“Landeseinheitliches Änderungsverfahren”) in Chapter 7.3.4 of the oversight concept and Chapter 7.3.4/1 of the oversight manual. By obligations imposed in the operating licences of the nuclear power plants (cf. obligation 1.4 of the operating licences of GKN II) it is regulated that authority decisions where nuclear safety is not concerned and thus the Ministry of the Environment is not involved, are submitted to the Ministry of the Environment for information.</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
	<p>The competence to execute the duties (i.e. the announcement of the binding decision towards the operator) is exclusively at the level of the <i>Länder</i> and the nuclear responsibilities for the nuclear power plants are concentrated in one division of the <i>Land</i> authority. This generally ensures a consistent performance of the tasks and prevention of imposing conflicting requirements on the operator.</p>	
86.	<p>Where the Regulatory Body consists of more than one authority, are they organized in such a way as to enable the necessary feedback and exchange of information?</p> <p>If the regulatory body consists of more than one authority, effective arrangements shall be made to ensure that regulatory responsibilities and functions are clearly defined and co-ordinated, in order to avoid any omissions or unnecessary duplication and to prevent conflicting requirements being placed on the operator. The main functions of review and assessment and inspection and enforcement shall be organized in such a way as to achieve consistency and to enable the necessary feedback and exchange of information. In addition, the authorities responsible for the different disciplines concerned in the regulatory process, such as those responsible for nuclear, radiation, radioactive waste and transport safety, shall be effectively co-ordinated.</p> <p><i>SS Ref.: GS-R-1 para 4.2</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: GS-R-1, para 4.2 addresses the interaction of the main regulatory functions "review and assessment" and "inspection and enforcement". The two main functions are performed by Division 3 of the Ministry of the Environment Baden-Württemberg and thus by one authority.</p> <p>The internal organisation in Division 3 of the Ministry of the Environment provides that for one nuclear power plant there is only one section responsible. This section fulfils the tasks of the oversight areas "review and assessment" and "inspection and enforcement". This ensures that findings from one area of oversight can be used in the other oversight area. Also regarding the different section members, there is no separation between the two areas. For example, the section member competent for radiation protection deals with review and assessment of documents and reports on topics related to radiation protection as well as with plant inspections in the area of radiation protection. The information exchange between the different plants is supported by the intensive communication in Division 3 in form of regular section meetings and meetings of section heads and, at the informal level, meetings of the responsible division members.</p>

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
87.	<p>Is the Regulatory Body entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection?</p> <p>If the regulatory body is not entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection, it shall seek advice or assistance, as appropriate, from consultants. Whoever may provide such advice or assistance (such as a dedicated support organization, universities or private consultants), arrangements shall be made to ensure that the consultants are effectively independent of the operator. If this is not possible, then advice or assistance may be sought from other States or from international organizations whose expertise in the field concerned is well established and recognized.</p> <p><i>SS Ref.: GS-R-1 para 4.3</i></p>	Assessment: Cf. No. 88
88.	<p>If the Regulatory Body is not entirely self-sufficient in all the technical or functional areas, does it seek advice or assistance from consultants (such as private consultants, universities or dedicated support organizations)?</p> <p>If the regulatory body is not entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection, it shall seek advice or assistance, as appropriate, from consultants. Whoever may provide such advice or assistance (such as a dedicated support organization, universities or private consultants), arrangements shall be made to ensure that the consultants are effectively independent of the operator. If this is not possible, then advice or assistance may be sought from other States or from international organizations whose expertise in the field concerned is well established and recognized.</p> <p><i>SS Ref.: GS-R-1 para 4.3</i></p>	Assessment: 3

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
	<p>are consulted as experts on the basis of existing framework agreements (cf. Chapter 2.4/1 to 2.4/4 of the oversight manual). Further experts, both institutions and individual experts, are commissioned on a case-by-case basis. The authority may consult the experts to the required extent. In this regard, there are no financial constraints.</p> <p>It is ensured that the authority receives support to the required extent and also in a timely manner.</p>	
89.	<p>Does the Regulatory Body make arrangements to ensure that the consultants are effectively independent of the operator?</p> <p>If the regulatory body is not entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection, it shall seek advice or assistance, as appropriate, from consultants. Whoever may provide such advice or assistance (such as a dedicated support organization, universities or private consultants), arrangements shall be made to ensure that the consultants are effectively independent of the operator. If this is not possible, then advice or assistance may be sought from other States or from international organizations whose expertise in the field concerned is well established and recognized.</p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The independence of the expert from the operator is an essential aspect for the selection of an expert. Only those experts may be consulted who are economically and factually independent. So, the expert must not have performed any activities for the operator side that could have an influence on his independent expert opinion. Beyond the independence from the operator, the individual experts have to confirm that they prepared their expert opinion or statement free from orders.</p>
90.	<p>If independent advice or assistance is unavailable does the Regulatory Body seek advice or assistance from other States or from international organizations whose expertise in the field is well established and recognized?</p> <p>If the regulatory body is not entirely self-sufficient in all the technical or functional areas necessary to discharge its responsibilities for review and assessment or inspection, it shall seek advice or assistance, as appropriate, from consultants. Whoever may provide such advice or assistance (such as a dedicated support organization, universities or private consultants), arrangements shall be made to ensure that the consultants are effectively independent of the operator. If this is not possible, then advice or assistance may be sought from other States or from international organizations whose expertise in the field concerned is well established and recognized.</p> <p><i>SS Ref.: GS-R-1 para 4.3</i></p>	

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
	<p>Answer: In the licensing and supervisory practice of the Ministry of the Environment Baden-Württemberg there is no case known in which adequate external support by experts has not been available. Accordingly, support by other states or international organisations was not required in this area.</p>	<p>Assessment: Cf. No. 88</p>
91.	<p>Does the use of consultants relieve the Regulatory Body of any of its responsibilities?</p> <p>The use of consultants shall not relieve the regulatory body of any of its responsibilities. In particular, the regulatory body's responsibility for making decisions and recommendations shall not be delegated.</p> <p><i>SS Ref.: GS-R-1 para 4.4</i></p>	<p>Assessment: 3</p> <p>Answer: No. There is no delegation of or relieve from responsibilities of the regulatory body. The Ministry of the Environment Baden-Württemberg consults the experts for preparing its decision. The task of the experts is the determination and assessment of facts, clearly indicating the assessment bases. The statements and expert opinions of the experts are an aid to the authority in their decision-making. In addition to statements and expert opinions, the authority also has to consider other sources of information in their decisions. The authority has to review the expert results, before consideration in the decision. The actual decision is made solely by the authority. The authority also has the sole responsibility for the decision.</p> <p>Attention is paid by organisational regulations that responsibilities will not be blurred. So, recommendations or requirements stated in the expert opinions will only become effective if they were imposed on the operator by the authority in written.</p> <p>The inspection reports, statements and opinions of the experts are submitted to the authority. If in a complex procedure an expert should for his review require further documents from the operator or supplementary interviews with operator personnel, the authority will be informed. It also will receive the documents and participates in the meetings, if required.</p> <p>As a matter of fact, the allocation of responsibilities is clear to those involved, both on the operators side and the expert and authority side. The decisions in the licensing and supervisory procedures are taken by the authority, and the authority bears the responsibility for the decisions. There is no assumption of responsibilities by the experts.</p>

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
92.	<p>When the Regulatory Body uses consultants is it ensured that the responsibility for making regulatory decisions and recommendations is not delegated? Do decisions and recommendations remain under the responsibility of Regulatory Body and are not delegated?</p> <p>The use of consultants shall not relieve the regulatory body of any of its responsibilities. In particular, the regulatory body's responsibility for making decisions and recommendations shall not be delegated.</p> <p><i>SS Ref.: GS-R-1 para 4.4</i></p>	<p style="text-align: right;">Assessment: --</p> <p>Answer: cf. answer to question 91.</p>
93.	<p>Has the Regulatory Body established and implemented a systematic approach to quality management that extends throughout the range of responsibilities and functions undertaken?</p> <p>The regulatory body shall establish and implement appropriate arrangements for a systematic approach to quality management which extend throughout the range of responsibilities and functions undertaken.</p> <p><i>SS Ref.: GS-R-1 para 4.5</i></p>	<p style="text-align: right;">Assessment: --</p> <p>Answer: cf. answers on Module VIII.</p>
94.	<p>Does the Regulatory Body employ sufficient staff with the necessary qualification, experience and expertise to adequately fulfil its regulatory functions and responsibilities?</p> <p>The regulatory body shall employ a sufficient number of personnel with the necessary qualifications, experience and expertise to undertake its functions and responsibilities. It is likely that there will be positions of a specialist nature and positions needing more general skills and expertise. The regulatory body shall acquire and maintain the competence to judge, on an overall basis, the safety of facilities and activities and to make the necessary regulatory decisions.</p> <p><i>SS Ref.: GS-R-1 para 4.6</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The Division Nuclear Supervision, Environmental Radioactivity at the Ministry of the Environment Baden-Württemberg employs about 44 specialist staff (mainly scientists and engineers, 3 lawyers and 4 administrators). Most of these persons have a university degree, more than one third have a</p>

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
	<p>doctorate. Most of the division members perform reviews and assessments as well as inspections and enforcement tasks (there is no assignment of oversight officials to "assessment" or "inspection"). The tasks also include the control of the experts and review and assessment of the expert's statements. Here, basic oversight (cf. Chapter 7.3.2.1 of the oversight concept) presents the main field of work with about 40 % of the working time. About 10 % are used for modifications (cf. Chapter 7.3.4 of the oversight concept) and event-induced oversight (cf. Chapter 7.3.2.4 of the oversight concept) each. The participation in the development of rules and regulations, legal procedures and tasks related to plants near the border consume altogether about 15 % of the working time. The assignment of persons to the different plants and tasks is described in the schedule of responsibilities of the Ministry of the Environment.</p> <p>On the basis of an expert framework agreement, TÜV SÜD ET provides support to the authority to a considerable extent. The expenses for the four nuclear power plants amount to about 25 Mio. Euro per year (equivalent to 120 full-time employees approx.). About 25 % of the work of TÜV SÜD ET is dedicated to the inspection of periodic tests of the operator and the assessment of testing instructions, about 35 % to reviews in modification procedures, about 25 % to support of the general oversight of the regulatory body (e.g. fulfilment of obligations) and about 15 % to special assignments (e.g. assessment of PSR). TÜV SÜD ET employs about 180 technical staff. The organisation provides six main divisions (cf. organisational chart of TÜV SÜD ET).</p> <p>On behalf of the Ministry of the Environment, the Institute for Environment, Measurements and Nature Conservation Baden-Württemberg (LUBW) operates the remote monitoring system for nuclear reactors (KFÜ) and performs measurements in the surroundings of the nuclear power plants. The manpower required includes about 12 full-time employees.</p> <p>A comprehensive review of tasks and personnel resources of Division 3 at the Ministry of the Environment was performed in 2002 by the Kienbaum consulting company.</p> <p>Regarding the definition of new oversight activities, amendments to the oversight programme, definition of oversight priorities etc., the personnel resources are considered, priorities are set or adjustments performed by relocation of staff within the division. A review of staffing is performed in general also in case of replacements. Moreover, comparisons are performed with nuclear authorities in Germany and abroad.</p> <p>The definition of the tasks of the experts and their scope is commissioned by the licensing and supervisory authority. Commissioning takes place where it is required. There is no financial limit.</p> <p>In 2006, the fulfilment of tasks of Division 3 was reviewed by a team of the International Committee on Nuclear Technology (ILK) on the basis of IAEA requirements (cf. ILK report ILK-28 of December 2006). The review did not identify any area where the Ministry of the Environment has not sufficient information for an evaluation of the safe operational management of the operator. The review concluded that the Ministry of the Environment has the personnel, competence and the financial means to fulfil its responsibilities which leads to an effective oversight of nuclear power plants in Baden-Württemberg. According to the ILK review, no major personnel changes were required.</p>	

No	Question Module 3: Organisation of the regulatory body – Answers UM BW
	<p>Since 2006 the number of staff members has decreased. Due to the good labour market situation for engineers and a high demand for qualified personnel in the nuclear industry, it is currently difficult to fill vacancies of retiring staff.</p>
95.	<p>Does the Regulatory Body have a recruitment strategy and staffing plan in order to acquire and maintain the competence to judge, on an overall basis, the safety of facilities and activities and make the necessary regulatory decisions?</p> <p>The regulatory body shall employ a sufficient number of personnel with the necessary qualifications, experience and expertise to undertake its functions and responsibilities. It is likely that there will be positions of a specialist nature and positions needing more general skills and expertise. The regulatory body shall acquire and maintain the competence to judge, on an overall basis, the safety of facilities and activities and to make the necessary regulatory decisions.</p> <p><i>SS Ref.: GS-R-1 para 4.6</i></p>
	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The schedule of responsibilities of the Ministry of the Environment includes the positions and describes the tasks and functions of the different positions.</p> <p>One condition of employment for technical personnel (supervisory officials) in Division 3 of the Ministry of the Environment is a university degree in a scientific/technical discipline (physics, chemistry, mechanical engineering, electrical engineering, process engineering and others). The objective is to have personnel with qualification in the main subjects of nuclear safety in-house. A catalogue of competences (cf. Chapter 3.4 of the organisational manual, Annex 1) describes the desired skills and abilities. The catalogue of competences serves as a basis for personnel selection and further qualification of the employees.</p> <p>Special importance is attached to a broad generalist knowledge. Since technical issues can be reviewed in detail by consulting authorised experts, the review by the technical personnel of the authority concentrates more on general aspects, e.g. whether an expert statement covers all relevant aspects. Moreover, the authority personnel has the task to make a decision on the basis of possibly different statements.</p> <p>In addition to university graduates, personnel are recruited with professional experience in trade control, in expert organisations, in industry and science. The Ministry of the Environment applies the strategy to recruit well educated staff and to qualify it for the tasks at the authority by introduction to their work, intensive training, further qualification, etc.</p> <p>In Division 3, importance is attached to long-term employment. In order to benefit in addition to the positive aspects of changing the workplace (dissemination of experience, maintenance of flexibility, intensification of communication, strengthening of the analytical and critical point of view and other things) job rotations are provided in Division 3 (cf. Chapter 3.1 of the organisational manual).</p> <p>For the different subject fields, so-called technical co-ordinators have been appointed in Division 3. These have special knowledge in their fields and their task is to further deepen the knowledge (cf. Chapter 1.7 of the organisational manual).</p>

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
	For the topic of maintenance of competence, also cf. answer to question 96.	
96.	<p>Does the Regulatory Body have a well-defined training programme to ensure that its staff acquire the proper skills, maintain the relevant competencies and are aware of technological developments and new safety principles and concepts?</p> <p>In order to ensure that the proper skills are acquired and that adequate levels of competence are achieved and maintained, the regulatory body shall ensure that its staff members participate in well defined training programmes. This training should ensure that staff are aware of technological developments and new safety principles and concepts.</p> <p><i>SS Ref.: GS-R-1 para 4.7</i></p> <p style="text-align: right;">Assessment: 2</p> <p>Answer: The further education and training programme is described in Chapter 3.4 of the organisational manual of the Division Nuclear Supervision, Environmental Radioactivity.</p> <p>For new staff, the training programme provides seminars, courses and intensive on-the-job training under the guidance of a personal contact person/mentor.</p> <p>In addition to a good initial training, continuous further qualification is required for the authority staff. The exchange on which measures are useful for the individual staff member is, among other things, subject matter of the annual appraisal interview of the employee by his/her supervisor.</p> <p>The ILK review recommended (cf. Chapter 3.2 of the ILK review), that the Ministry of the Environment should ensure that there is always sufficient knowledge about the results of research and developments in the fields of nuclear safety technology and radiation protection. Due to this recommendation, the following measures are strengthened:</p> <ul style="list-style-type: none"> - Participation in symposia and conferences, - advanced training courses within the division, - evaluation of technical journals and research reports, - participation in initiatives on rules and regulations of the BMU and the Nuclear Safety Standards Commission (KTA), - monitoring of international developments and participation in initiatives of IAEA, NEA, WENRA or others. <p>Increased participation in the international exchange of experiences is a subject area in the action plan.</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
97.	<p>In conducting its own review and assessment does the Regulatory Body rely solely on any safety assessment performed for it by consultants or on that conducted by the operator?</p> <p>In undertaking its own review and assessment of a safety submission presented by the operator, the regulatory body shall not rely solely on any safety assessment performed for it by consultants or on that conducted by the operator. Accordingly, the regulatory body shall have a full time staff capable of either performing regulatory reviews and assessments, or evaluating any assessments performed for it by consultants.</p> <p><i>SS Ref.: GS-R-1 para 4.8</i></p>	Assessment: 3
<p>Answer: The Ministry of the Environment Baden-Württemberg has personnel capable of performing assessments independently. Irrespective of the consultation of authorised experts, it is a fundamental objective of the regulatory authority to have sufficient expertise itself. This is primarily ensured by the circumstance that scientific/technical personnel perform the tasks and that great importance is attached to technical competence when recruiting new personnel. The existing capabilities are promoted by further qualification. The technical discussions with operators, manufacturers and experts leads to deepening technical knowledge – on the basis of the existing expertise – and to the formation of an independent opinion of the authority staff. In this way, an independent technical assessment of a document of the operator or statement of an authorised expert is possible.</p>		
98.	<p>Does the Regulatory Body have sufficient staff capable of either performing regulatory reviews and assessments or evaluating reviews and assessments performed for it by consultants?</p> <p>In undertaking its own review and assessment of a safety submission presented by the operator, the regulatory body shall not rely solely on any safety assessment performed for it by consultants or on that conducted by the operator. Accordingly, the regulatory body shall have a full time staff capable of either performing regulatory reviews and assessments, or evaluating any assessments performed for it by consultants.</p> <p><i>SS Ref.: GS-R-1 para 4.8</i></p>	Assessment: 3
<p>Answer: The evaluation of expert opinions, statements and assessments of authorised experts is one of the main tasks of the Ministry of the Environment Baden-Württemberg as regulatory authority. For this task, there is sufficient staff available, as also shown by external reviews.</p> <p>There are often intensive discussions on the results of the experts with the experts. The authority staff pursue the aim to track technical reviews and assessments of the experts to such an extent that they can derive adequate steps and judgements. The performance of own reviews and assessments by the authority is not a priority. Instead, the aim is to use personnel capacities as intensive as possible for the evaluation of expert opinions, statements and assessments. The appointment of technical co-ordinators (cf. Chapter 1.7 of the organisational manual) for specific issues allows the development and maintenance of in-depth technical knowledge in these subject areas.</p>		

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
99.	<p>Does the Regulatory Body or Government use Advisory Bodies?</p> <p>The government or the regulatory body may choose to give formal structure to the processes by which expert opinion and advice are provided to the regulatory body; the need or otherwise for such formal advisory bodies is determined by many factors. When the establishment of advisory bodies is considered necessary, on a temporary or permanent basis, such bodies shall give independent advice. The advice given may be technical or non-technical (in advising, for example, on ethical issues in the use of radiation in medicine). Any advice offered shall not relieve the regulatory body of its responsibilities for making decisions and recommendations.</p> <p><i>SS Ref.: GS-R-1 para 4.9</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: In 1999, the <i>Länder</i> of Baden-Württemberg, Bavaria and Hesse set up the International Committee on Nuclear Technology (ILK). It advises the nuclear regulatory authorities of the <i>Länder</i> on general issues of nuclear safety, radioactive waste management and risk assessment of nuclear facilities. It publishes the results achieved in the form of statements and recommendations.</p>
100.	<p>Does the Regulatory Body or Government give formal structure to the processes by which it obtains expert opinion and advice from Advisory Bodies?</p> <p>The government or the regulatory body may choose to give formal structure to the processes by which expert opinion and advice are provided to the regulatory body; the need or otherwise for such formal advisory bodies is determined by many factors. When the establishment of advisory bodies is considered necessary, on a temporary or permanent basis, such bodies shall give independent advice. The advice given may be technical or non-technical (in advising, for example, on ethical issues in the use of radiation in medicine). Any advice offered shall not relieve the regulatory body of its responsibilities for making decisions and recommendations.</p> <p><i>SS Ref.: GS-R-1 para 4.9</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The organisation of the ILK is based on an administrative agreement of the three <i>Länder</i> involved.</p> <p>The co-operation of Division 3 of the Ministry of the Environments with the ILK (way of working of the ILK, consultation process and implementation of the results of the discussions by Division 3, among other things) is described in Chapter 2.5/1 of the oversight manual. The accompaniment of the consultation process of the Reactor Safety Commission (RSK) and implementation of the results of the discussions of the RSK by Division 3 of the Ministry of the Environment is described in Chapter 2.2/1 of the oversight manual.</p>

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
101.	<p>How is it assured that the advice from the Advisory Bodies is independent?</p> <p>The government or the regulatory body may choose to give formal structure to the processes by which expert opinion and advice are provided to the regulatory body; the need or otherwise for such formal advisory bodies is determined by many factors. When the establishment of advisory bodies is considered necessary, on a temporary or permanent basis, such bodies shall give independent advice. The advice given may be technical or non-technical (in advising, for example, on ethical issues in the use of radiation in medicine). Any advice offered shall not relieve the regulatory body of its responsibilities for making decisions and recommendations.</p> <p><i>SS Ref.: GS-R-1 para 4.9</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: In the administrative agreement on setting up the ILK, independent and objective advice is explicitly stated as task and aim of the ILK. Likewise, the following is stipulated: The committee is not subject to orders of the <i>Länder</i> Baden-Württemberg, Hesse and Bavaria. The members are nominated by the three minister presidents for a period of three calendar years.</p>
102.	<p>How is it ensured that the advice given does not in any way relieve the Regulatory Body of its responsibilities to make decisions and recommendations?</p> <p>The government or the regulatory body may choose to give formal structure to the processes by which expert opinion and advice are provided to the regulatory body; the need or otherwise for such formal advisory bodies is determined by many factors. When the establishment of advisory bodies is considered necessary, on a temporary or permanent basis, such bodies shall give independent advice. The advice given may be technical or non-technical (in advising, for example, on ethical issues in the use of radiation in medicine). Any advice offered shall not relieve the regulatory body of its responsibilities for making decisions and recommendations.</p> <p><i>SS Ref.: GS-R-1 para 4.9</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The results of the deliberations of RSK and ILK are submitted to the authorities to whom they provide advice. They do not have a direct effect for the operators of the nuclear power plants.</p> <p>The Ministry of the Environment Baden-Württemberg reviews the recommendations and decides which consequences result for the operator. The nuclear power plant operators are informed about these regulatory requirements in written. Only the “implementation” of the recommendations or statements towards the nuclear power plant operators by the regulatory authority results in tasks or obligations of the operators. The evaluation and implementation of results of the discussions of RSK and ILK are described in Chapter 2.2/1 and Chapter 2.5/1 of the oversight manual.</p>

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
103.	<p>Does the Regulatory Body promote a frank and open and formal relationship with the operator?</p> <p>Mutual understanding and respect between the regulatory body and the operator, and a frank, open and yet formal relationship, shall be fostered.</p> <p><i>SS Ref.: GS-R-1 para 4.10</i></p>	Assessment: 3
	<p>Answer: Yes. The relationship of the Ministry of the Environment Baden-Württemberg with the nuclear power plant operators is frank and open and, nevertheless, formal.</p> <p>The relationship within the licensing and oversight procedure is object of the strategic dialogue and meetings at the management level (cf. Chapter 7.3.2.1.4 of the oversight concept). There, problems in the relationships can be addressed at an early stage and so be eliminated. Moreover, open communication is fostered at all levels during inspections and technical meetings.</p> <p>The mission statement of Division 3 includes guiding principles on the relationship of operator and authority, There it reads, among other things: “Within the framework of licensing and oversight, we maintain an objective and open relationship with the operator based on mutual trust. In this respect, we are always aware of our special role as supervisory authority.”</p> <p>The fact that the operator gives both positive and negative feedback on oversight and oversight officials indicates that there is an open relationship.</p> <p>The dealing of the operator with the authority during inspections is assessed by the oversight officials within the framework of the inspection instrument KOMFORT applied for on-site inspections (cf. Chapter 7.3.2.1.1/2 of the oversight manual). In most of the cases the dealing is found to be exemplary or good.</p>	
104.	<p>What formal arrangements exist to facilitate discussions between the Regulatory Body and the operator?</p> <p>Mutual understanding and respect between the regulatory body and the operator, and a frank, open and yet formal relationship, shall be fostered.</p> <p><i>SS Ref.: GS-R-1 para 4.10</i></p>	Assessment:--
	<p>Answer: cf. answer to question 103.</p>	

No	Question	Module 3: Organisation of the regulatory body – Answers UM BW
105.	<p>Has the State established arrangements for the exchange of safety related information: bi-laterally or regionally, with neighbouring States and other interested States, and with relevant intergovernmental organizations, both to fulfil safety obligations and to promote cooperation?</p> <p>The safety of facilities and activities is of international concern. Several international conventions relating to various aspects of safety are in force. National authorities, with the assistance of the regulatory body, as appropriate, shall establish arrangements for the exchange of safety related information, bilaterally or regionally, with neighbouring States and other interested States, and with relevant intergovernmental organizations, both to fulfil safety obligations and to promote co-operation.</p> <p><i>SS Ref.: GS-R-1 para 4.11</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The Ministry of the Environment Baden-Württemberg participates intensively in the bilateral commissions DFK (German-French commission) and DSK (German-Swiss commission) for the safety of nuclear installations.</p>

3.2.5 Module 4: Authorization by the regulatory body

No	Question	Module 4: Authorization by the regulatory body
106.	<p>Does the Regulatory Body ensure that any facility or activity or practice has in force a notification, prior authorization, or exemption as appropriate?</p> <p>For all facilities and activities, a prior authorization, a notification or an exemption shall be in force. Alternatively, activities of a particular type may be authorized in general to be performed in strict accordance with detailed technical regulations (such as the routine shipment of radioactive materials in packages approved under detailed transport safety regulations).</p> <p><i>SS Ref.: GS-R-1 para 5.2</i></p> <p>Answer: Yes. The Atomic Energy Act (AtG), the Radiation Protection Ordinance (StrlSchV), further statutory ordinances (such as the Nuclear Licensing Procedures Ordinance - AtVfV) and regulations form the basis.</p> <p><u>Licences and notifications:</u> The erection, operation, essential changes, decommissioning, safe enclosure and dismantling of a nuclear power plant require licensing according to § 7 AtG (see Oversight Conception Chapters 1.3.1 and 7.3.6). The handling of nuclear fuels is regulated in § 9 AtG.</p> <p>The handling of radioactive material is licensed pursuant to §7 StrlSchV.</p> <p>As a rule, the licences for nuclear power plants according to § 7 AtG cover the handling of nuclear fuels and radioactive material.</p> <p>The clearance of radioactive material for disposal carried out pursuant to § 29 StrlSchV. The carriage of radioactive material is licensed pursuant to § 4 AtG and §§ 16 and 17 StrlSchV.</p> <p>The conditions for the granting of licence or a notification are always mentioned in the wording of the law or the ordinance.</p> <p><u>Regulatory approvals:</u> For non-essential changes (e.g. modifications in a nuclear power plant that are of such little safety-significance that they do not require licensing according to the AtG), there exists a special procedure, namely the Land-wide standardised modification procedure (see Oversight Concept Chap. 7.3.4)</p>	Assessment: 3

No	Question	Module 4: Authorization by the regulatory body
	<p>Additional licensing requirements contain demands for special approval by the regulatory authority, in particular regarding extraordinary activities such as the restart of the plant following refuelling or longer plant standstills, the loading of fuel element transport casks, etc.</p> <p>Separate permits by the regulatory authority are required for persons working in nuclear power plants. For example, the regulatory authorities carry out reliability checks of the persons working in the nuclear power plant pursuant to § 12 b AtG (see AtZüV, Oversight Concept 7.3.2.1.13).</p> <p>Before the deployment of responsible staff, the consent of the regulatory authority is required. This consent is given provided that the persons in question can show the experience and training mentioned in the corresponding guideline (cf. Chap 7.3.2.1.13 Oversight Concept and Oversight Manual).</p> <p>Note: As far as the BMU is not explicit mentioned in the answers, the answers describe the functions and procedure of the Länder regulatory authority. Role and functions of the BMU in the context of the licensing procedure are explained in the following answers. The licensing system is explained in Chapter 7(2ii) of the CNS Report.</p>	
107.	<p>Prior to the granting of an authorization, are applicants required to submit a detailed demonstration of safety appropriate to the facility, activity or practice?</p> <p>Prior to the granting of an authorization, the applicant shall be required to submit a detailed demonstration of safety, which shall be reviewed and assessed by the regulatory body in accordance with clearly defined procedures. The extent of the control applied shall be commensurate with the potential magnitude and nature of the hazard presented. Thus, for example, a dental X ray machine may require only registration with the regulatory body, whereas for a radioactive waste repository a multistage authorization process may be required.</p> <p><i>SS Ref. GS-R-1 para 5.3</i></p>	
	<p>Answer: Yes. Licences and approvals may only be granted if the conditions are fulfilled. Documents have to be provided to demonstrate fulfilment of the conditions. This is regulated in detail in the corresponding acts of law, statutory ordinances and also in the non-mandatory guidance instruments.</p> <p>Licences according to § 7 AtG may only be granted if the conditions mentioned in § 7 para. 2 AtG are fulfilled. These conditions are completed and specified by ordinances, e.g. by the Nuclear Licensing Procedures Ordinance (AtVfV), the Radiation Protection Ordinance (StrlSchV) or the Nuclear Financial Security Ordinance (AtDeckV). When determining the state of the art in science and technology, the non-mandatory guidance instruments, consisting i.a. of KTA Safety Standards, BMI/BMU Guidelines, RSK Guidelines, RSK Comments and DIN Standards, are applied as criteria. The operator has to submit documents together with his application which show that these conditions are fulfilled.</p>	Assessment: 3

No	Question Module 4: Authorization by the regulatory body
	<p>A list of the required documents can be found in §3 of the Nuclear Licensing Procedures Ordinance AtVfV. One of the essential documents to be presented by the applicant is the safety analysis report (cf. AtVfV §3 (1) 1). This outlines the essential effects of the project with regard to nuclear safety and radiation protection and describes its concept as well as the precaution against damage necessary pursuant to §7 para. 2 no. 3 AtG in accordance with the state of the art in science and technology.</p> <p>In the case of any non-essential modifications, the operator presents documents that describe the project and its safety relevance. These documents form the basis for the authority's approval. The scope and contents of these documents are described in the Land-wide standardised modification procedure (cf. Chap. 7.3.4/1 of the Oversight Manual).</p>
108.	<p>Are applications for authorization reviewed and assessed by the Regulatory Body in accordance with clearly defined written procedures?</p> <p>Prior to the granting of an authorization, the applicant shall be required to submit a detailed demonstration of safety, which shall be reviewed and assessed by the regulatory body in accordance with clearly defined procedures. The extent of the control applied shall be commensurate with the potential magnitude and nature of the hazard presented. Thus, for example, a dental X ray machine may require only registration with the regulatory body, whereas for a radioactive waste repository a multistage authorization process may be required.</p> <p><i>SS Ref.: GS-R-1 para 5.3</i></p>
	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The provisions of the Nuclear Licensing Procedures Ordinance (AtVfV), the State Administration Procedures Act (LVwVfG) and the decrees issued by the supreme Länder authorities to subordinate authorities apply (e.g. in the case of licences according to § 7 StrISchV or notifications according to § 29 StrISchV).</p> <p>The procedure of granting a licence according to § 7 AtG is carried out according to the Nuclear Licensing Procedures Ordinance (AtVfV). The AtVfV specifies in what steps the licensing procedure has to be executed, which documents have to be presented, how the general public, other authorities and third parties are to be involved, and in which form and with which content the licensing notification may be issued. The fulfilment criteria for the licensing conditions laid down in the Atomic Energy Act (AtG) and the Radiation Protection Ordinance (StrISchV) relating to the state of the art in science and technology are the non-mandatory guidance instruments, such as KTA Safety Standards, BMI/BMU Guidelines, RSK Guidelines, RSK Comments and DIN Standards.</p> <p>The BMU will intervene in a pending licensing procedure if federal inspection appears necessary owing to the relevance of the project. This decision and the possible subsequent procedure federal regulatory inspection is guided by the process description "Federal supervision - licensing procedure" of the BMU's QA system.</p>

No	Question	Module 4: Authorization by the regulatory body
	As a result of its examination, the BMU issues a statement on the draft licence to the Länder regulatory authority. The procedure for non-essential modifications is specified in the Land-wide standardised modification procedure (see Oversight Manual 7.3.4.)	
109.	<p>Are the processes and requirements of authorization commensurate with the potential magnitude and nature of the hazard presented?</p> <p>Prior to the granting of an authorization, the applicant shall be required to submit a detailed demonstration of safety, which shall be reviewed and assessed by the regulatory body in accordance with clearly defined procedures. The extent of the control applied shall be commensurate with the potential magnitude and nature of the hazard presented. Thus, for example, a dental X ray machine may require only registration with the regulatory body, whereas for a radioactive waste repository a multistage authorization process may be required.</p> <p><i>SS Ref.: GS-R-1 para 5.3</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The State Administration Procedures Act (LVwVfG) commits the authorities to acting in an adequate manner. This is implemented by the authorities.</p> <p>Applications according to § 7 AtG are as a matter of principle categorised according to their safety significance as essential modifications which require a licence or as non-essential modifications not requiring a licence.</p> <p>Non-essential changes in a plant according to § 7 AtG are carried out in accordance with the Land-wide standardised modification procedure. Here, the planned modifications are categorised according to their safety significance as modifications subject to authority examination or even authority approval and modifications that may be carried out within the operators own responsibility.</p> <p>Depending on the modification category, the effort involved is reduced from a comprehensive examination on the basis of an assessment by experts with subsequent approval by the authority up to a mere random examination of correct categorisation in the case of any modifications that may be carried out within the operators own responsibility.</p> <p>Depending on the possible effects of the project on the environment and the associated risk, the category of modification projects subject to licensing provides for the involvement of the general public and for an environmental impact assessment. The contents and scope of the examination by experts are defined by the authority in general agreements, special commissioning and specification as well as by agreeing upon the structure of the expert opinion to be prepared. The decision on the importance of a licence and thus on whether the BMU will intervene in the pending licensing procedure is taken on the basis of the criteria specified in the "Federal supervision - licensing procedure" process description. Such criteria are e.g. a potentially increased risk or risk reduction that may not be state-of-the-art in science and technology.</p>

No	Question	Module 4: Authorization by the regulatory body
110.	<p>Does the Regulatory Body issue guidance to the operator on the format and content of documents to be submitted in support of an application for authorization?</p> <p>The regulatory body shall issue guidance on the format and content of documents to be submitted by the operator in support of applications for authorization. The operator shall be required to submit or make available to the regulatory body, in accordance with agreed time-scales, all information that is specified or requested. For complex facilities (such as a nuclear power plant) authorization may be carried out in several stages, each requiring hold points, separate permits or licences. In such cases, each stage of the process shall be subject to review and assessment, with account taken of feedback from the previous stages.</p> <p><i>SS Ref.: GS-R-1 para 5.4</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The provisions of the Nuclear Licensing Procedures Ordinance (AtVfV), the State Administration Procedures Act (LVwVfG) and the decrees issued by the supreme Länder authorities to subordinate authorities apply (e.g. in the case of licences according to § 7 StrlSchV or notifications according to § 29 StrlSchV).</p> <p>The documents to be presented when applying for a nuclear licence are listed in the Nuclear Licensing Procedures Ordinance (AtVfV). If necessary, further documents to be presented are specified at the start of the licensing procedure during a preliminary clarification according to § 1b AtVfV.</p> <p>Further requirements for the documents are contained in the guideline on the „Compilation of Information Required for Review Purposes under Licensing and Supervisory Procedures for Nuclear Power Plants“. This may be modified by the authority.</p> <p>As for non-essential modifications, an application is filed pursuant to the Land-wide standardised modification procedure according to a schedule agreed between operator and authority in which it is also specified who is to be involved and how, and which documents have to be submitted in each case. If necessary, the operator will be required to produce further documents if needed by the authority for its approval or by the authorised expert for his opinion.</p>

No	Question	Module 4: Authorization by the regulatory body
111.	<p>Is the operator required to submit or make available within an agreed time scale all information that is specified and requested by the Regulatory Body?</p> <p>The regulatory body shall issue guidance on the format and content of documents to be submitted by the operator in support of applications for authorization. The operator shall be required to submit or make available to the regulatory body, in accordance with agreed time-scales, all information that is specified or requested. For complex facilities (such as a nuclear power plant) authorization may be carried out in several stages, each requiring hold points, separate permits or licences. In such cases, each stage of the process shall be subject to review and assessment, with account taken of feedback from the previous stages.</p> <p><i>SS Ref.: GS-R-1 para 5.4</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes.</p> <p>The applicant in the licensing procedure according to § 7 AtG is obliged pursuant to AtVfV to present all the information and documents necessary for the examination of a licence application. As far as these documents are not already mentioned in § 3 AtVfV, they are specified in a preliminary clarification in agreement between applicant, authority and authorised expert. The deadline for presentation of the documents is also specified in co-ordination between the respective parties involved.</p> <p>The applicant is obliged pursuant to § 19 AtG para. 1 in combination with §139b GewO to provide in the supervisory procedure all information needed by the authority to fulfil its functions as required in § 19 AtG.</p> <p>If a modification is carried out in the own interest of the operator, there are no temporal specifications for the presentation of documents. If regulatory findings (e.g. according to §17 (3) AtG) for the basis for a modification, the regulatory authority may impose deadlines for the presentation of documents.</p>
112.	<p>Where several discrete stages of authorization are involved, are hold points, separate permits or separate licences issued?</p> <p>The regulatory body shall issue guidance on the format and content of documents to be submitted by the operator in support of applications for authorization. The operator shall be required to submit or make available to the regulatory body, in accordance with agreed time-scales, all information that is specified or requested. For complex facilities (such as a nuclear power plant) authorization may be carried out in several stages, each requiring hold points, separate permits or licences. In such cases, each stage of the process shall be subject to review and assessment, with account taken of feedback from the previous stages.</p> <p><i>SS Ref.: GS-R-1 para 5.4</i></p>	

No	Question	Module 4: Authorization by the regulatory body
	<p>Answer: Yes. Complex projects, like the erection or decommissioning of a nuclear facility, may on application be carried out in several phases (see § 18 AtVfV). In these cases, a separate licence is issued for each phase, referring to a defined step of erection, operation, or decommissioning. The steps are adjusted to the respective technical conditions, so that the previous licence forms the basis for the following one. The licences for erecting a nuclear power plant, for example, were divided into construction and operating licenses.</p> <p>Licensing requirements contain regular stops and approval conditions for certain activities, such as plant restart following refuelling.</p>	Assessment: 3
113.	<p>Where several discrete stages of authorization are involved, is each stage subject to review and assessment, with account taken of feedback from the previous stages?</p> <p>The regulatory body shall issue guidance on the format and content of documents to be submitted by the operator in support of applications for authorization. The operator shall be required to submit or make available to the regulatory body, in accordance with agreed time-scales, all information that is specified or requested. For complex facilities (such as a nuclear power plant) authorization may be carried out in several stages, each requiring hold points, separate permits or licences. In such cases, each stage of the process shall be subject to review and assessment, with account taken of feedback from the previous stages.</p> <p><i>SS Ref.: GS-R-1 para 5.4</i></p>	Assessment: 3
114.	<p>Following the review and assessment and in granting an authorization does the Regulatory Body impose conditions and limitations on the operator's activities as appropriate?</p> <p>The regulatory review and assessment will lead to a series of regulatory decisions. At a certain stage in the authorization process, the regulatory body shall take formal actions which will result in either: (1) the granting of an authorization which, if appropriate, imposes conditions or limitations on the operator's subsequent activities; or (2) the refusal of such an authorization. The regulatory body shall formally record the basis for these decisions.</p> <p><i>SS Ref.: GS-R-1 para 5.5</i></p>	

No	Question	Module 4: Authorization by the regulatory body
	<p>Answer: Yes. According to the State Administrative Procedures Act, each administrative deed may be supplemented by further requirements under certain conditions.</p> <p>The licences are granted on the basis of the licence documents and the applicable rules and guidelines. In these documents, the framework and the conditions are specified under which the licence is valid. It is furthermore allowed according to § 17 AtG to add requirements to licences (pursuant to AtG and StrlSchV) and to restrict them in content. With the exception of licences pursuant to § 7 AtG, the terms of licences may be restricted.</p> <p>The requirements regulate the framework within which the licence granted is valid. The requirements have to be appropriate and justified. Compliance with the requirements is supervised and checked by the regulatory authority.</p> <p>Requirements may also be made in the form of additional requirements at a later stage (cf. §17 AtG). For example, additional requirements were imposed in 2003 regarding the establishment of a management system.</p> <p>The result of a federal supervisory examination of a licence application (see Questions 108 and 109) can also take the form of an approval of the draft licence under certain conditions. The BMU will then ask the Länder regulatory authority to confirm that the federal supervisory requirements have been the fulfilment or to oversee them in operation (see QM process: "Federal supervision - supervisory procedure")</p>	<p style="text-align: right;">Assessment: 3</p>
115.	<p>Does the Regulatory Body formally record the basis for:</p> <ul style="list-style-type: none"> • granting an authorization?, • refusing an authorization? <p>The regulatory review and assessment will lead to a series of regulatory decisions. At a certain stage in the authorization process, the regulatory body shall take formal actions which will result in either:</p> <p>(1) the granting of an authorization which, if appropriate, imposes conditions or limitations on the operator's subsequent activities; or</p> <p>(2) the refusal of such an authorization.</p> <p>The regulatory body shall formally record the basis for these decisions.</p> <p><i>SS Ref.: GS-R-1 para 5.5</i></p>	
	<p>Answer: Yes. The general administrative actions of the regulatory authority, e.g. the execution of administrative discretion, are regulated in the State Administrative Procedures Act (LVwVfG) (see Oversight Concept).</p>	<p style="text-align: right;">Assessment: 3</p>

No	Question	Module 4: Authorization by the regulatory body
	<p>The decision on the granting of the licence or the rejection of an application is made in formal written form (§ 15 AtVfV). This written communication makes reference to the essential documents which form the basis for the granting or refusal of a licence, e.g. the documents presented by the operator or the opinion of the authorised expert. The licence notification furthermore contains a "justification" section in which the reasons for the granting or refusal of the licence and for the imposition of further requirements are given. The entirety of all documents prepared during the procedure are archived, document the procedure, and render the decision-making process transparent.</p> <p>According to the QM process: "Federal supervision - supervisory procedure", the essential steps as well as the documents used are documented for federal regulatory examination. The Federal Regulatory Statement is the final document.</p>	
116.	<p>Are clearly defined procedures established for any subsequent amendment, renewal, suspension or revocation of an authorization?</p> <p>Any subsequent amendment, renewal, suspension or revocation of the authorization shall be undertaken in accordance with a clearly defined and established procedure. The procedure shall include requirements for the timely submission of applications for renewal or amendment of authorizations. For amendment and renewal, the associated regulatory review and assessment shall be consistent with the requirements of para. 5.3.</p> <p><i>SS Ref.: GS-R-1 para 5.6</i></p>	
	<p>Answer: Yes. A distinction has to be made between licences that can only be granted without restrictions on their term and those that may be limited.</p> <p>The licences according to § 7 AtG are granted for an indefinite period, therefore no prolongation of the licence is necessary. The licences can, however, under certain conditions be revoked, modified (so-called essential change according to § 7 AtG) or completed by additional requirements if certain conditions which are defined in § 17 AtG apply. Furthermore, the licences can – if necessary - be supplemented at short notice by orders (see Oversight Manual Chapter 8.2). Moreover, the licences generally include requirements according to which the consent of the supervisory authority is required at certain times. A facility may for example only be rendered critical again after refuelling once the regulatory authority has given its consent. The conditions for giving consent are also mentioned in the licence or in the associated additional requirements. The procedure to be followed in this respect is described in Chapter 7.3.3.1 of the Oversight Manual.</p> <p>In the case of limited licenses, any prolongation and the documents to be presented in this context are either regulated by additional requirements, or the licence expires.</p> <p>The QM process: "Federal supervision - supervisory procedure" contains a note under item 2 "Scope" that the procedures for regulatory clearance or approval are to be applied analogously. The same applies correspondingly to federal regulatory examinations such as in the case of licences. (cf. answer to Question 109)</p>	Assessment: 3

No	Question	Module 4: Authorization by the regulatory body
117.	<p>Are there requirements for the timely submission of applications for renewal or amendment of authorizations?</p> <p>Any subsequent amendment, renewal, suspension or revocation of the authorization shall be undertaken in accordance with a clearly defined and established procedure. The procedure shall include requirements for the timely submission of applications for renewal or amendment of authorizations. For amendment and renewal, the associated regulatory review and assessment shall be consistent with the requirements of para. 5.3.</p> <p><i>SS Ref.: GS-R-1 para 5.6</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. A distinction has to be made between licences that can only be granted without restrictions on their term and those that may be limited.</p> <p>Licences according to § 7 AtG that were granted without a limit on their term do not require any application for their prolongation at any particular date. If the supervision procedure yields any information that indicates that the safety of the plant is not guaranteed or is impaired, the authority has to react by revoking the licence or by imposing additional licensing requirements or issuing corresponding orders.</p> <p>According to § 7 AtG, the operator is obliged to carry out a safety review of his plant every ten years (see §19a AtG). The results of the reports or of the safety review may form the basis for a supplementation of the licence by additional requirements or for a revocation of the licence. The times when the safety reviews have to be carried out and their scope are defined in the AtG.</p> <p>In the case of limited licences e.g. according to StriSchV, the deadlines when documents in connection with an application for licence prolongation have to be presented can be specified by additional requirements, or the licence expires and has to be re-applied for following expiry of the deadline.</p>
118.	<p>For the amendment and renewal of an authorization does the Regulatory Body ensure that the review and assessment are commensurate with the potential magnitude and nature of the hazard?</p> <p>Any subsequent amendment, renewal, suspension or revocation of the authorization shall be undertaken in accordance with a clearly defined and established procedure. The procedure shall include requirements for the timely submission of applications for renewal or amendment of authorizations. For amendment and renewal, the associated regulatory review and assessment shall be consistent with the requirements of para. 5.3.</p> <p><i>SS Ref.: GS-R-1 para 5.6</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The State Administration Procedures Act (LVwVfG) commits the authorities to acting in an adequate manner. This is implemented by the authorities.</p>

No	Question	Module 4: Authorization by the regulatory body
	<p>Non-essential changes in a plant according to § 7 AtG are carried out in accordance with the Land-wide standardised modification procedure (cf. AHB Chapter 7.3.4/1). Here, the planned modifications are categorised according to their safety significance as modifications subject to authority examination or even authority approval and modifications that may be carried out within the operators own responsibility.</p> <p>Depending on the modification category, depth of examination also varies from a comprehensive examination up to a mere random examination of correct categorisation in the case of any modifications that may be carried out within the operators own responsibility.</p>	

3.2.6 Module 5: Review and assessment

No	Question	Module 5: Review and assessment
119.	<p>Is review and assessment performed in accordance with the stage in the regulatory process and the potential magnitude and nature of the hazard associated with the particular facility, activity or practice?</p> <p>Review and assessment shall be performed in accordance with the stage in the regulatory process and the potential magnitude and nature of the hazard associated with the particular facility or activity.</p> <p><i>SS Ref.: GS-R-1 para 5.7</i></p>	
	<p>Answer:</p> <p>Yes. The kind of review and assessment by the regulatory authority depends on the safety significance of the planned measures and the condition of the plant.</p> <p>The legal bases for the reviews and assessments are established in AtG § 19 and § 19a and are realised by the regulatory authority. Reviews and assessments are performed by the licensing and supervisory authority during licensing procedures, during refuelling, by evaluating reports regarding changes of the plant or its operation that are not subject to licensing, following special events, and in connection with the safety reviews (SR) required to be performed every 10 years. Further details are contained in Chapter 14 (i) of the CNS Report.</p> <p>For these reviews and assessments, authorised experts according to AtG § 20 are usually consulted for professional support. The task spectrum of the authorised experts reaches from examining the operators' reports for plausibility up to the performance of their own analyses and confirmatory calculations. Final assessment and decision stand in the power of the regulatory authority.</p> <p>Within the framework of the federal supervision of the regulatory procedures of the Länder (Federal State administration on behalf of the Federal Government), the BMU carries out its own reviews and assessments on receiving knowledge about events/occurrences in plants (reports according to AtSMV) or findings on circumstances that need clarification. The procedure of federal regulatory review and assessment is guided by the process description "Federal supervision – supervisory procedure" of the BMU's QM system. In a preliminary examination, the BMU initially verifies the safety relevance of the event/occurrence or the circumstance to be clarified. If this preliminary examination shows that the event/occurrence is relevant from a safety-related and federal regulatory point of view, the BMU intervenes. The BMU therefore assumes a quality assurance function. Examples</p> <ul style="list-style-type: none"> - assessment of an event: event involving the refuelling water storage tanks BW - applicability to other plants: event involving incorrectly installed anchors at Biblis - investigation of generic safety issues: RSK advice on sump clogging. 	<p>Assessment: 3</p>

No	Question	Module 5: Review and assessment
	<p>The BMU is entitled to be informed as soon as possible about the safety reviews to be presented according to § 19a AtG, thereby to be provided with an overview of the safety status of the nuclear power plants, and also to review these safety reviews itself as part of federal supervision. A corresponding federal supervision project with participation of GRS has been started.</p>	
120.	<p>Does the Regulatory Body define its review and assessment principles and associated criteria on which its judgements and decisions are based?</p> <p>In connection with its review and assessment activities, the regulatory body shall define and make available to the operator the principles and associated criteria on which its judgements and decisions are based.</p> <p><i>SS Ref.: GS-R-1 para 5.8</i></p> <p>Answer: Yes. The bases of the assessment are derived from the nuclear regulations. Here, the basic references are the Handbook on Nuclear Safety and Radiation Protection (RS-Handbuch) and the KTA Standards (cf. Module VII). In its reviews and assessments, the regulatory authority applies the state of the art in science and technology. If more recent knowledge from science and technology is available, then this has to be taken into account by the regulatory authority. In addition, operating experience and special design features of the plant are taken into account. If supplementary regulatory requirements have to be imposed, these are communicated explicitly to the operators and authorised experts. The assessment criteria have to be stated explicitly in the authorised experts' reports.</p> <p>Note by the BMU: The German non-mandatory guidance instruments are in need of updating. For the current status of the non-mandatory guidance instruments and the on-going measures to update them, see answer to Question 150 (Module VII).</p>	Assessment: 3
121.	<p>Does the Regulatory Body make available to the operator its review and assessment principles and associated criteria on which its judgements and decisions are based?</p> <p>In connection with its review and assessment activities, the regulatory body shall define and make available to the operator the principles and associated criteria on which its judgements and decisions are based.</p> <p><i>SS Ref.: GS-R-1 para 5.8</i></p> <p>Answer: Yes. The review and assessment criteria are known to the operator or communicated to him in particular cases.</p>	Assessment: 3

No	Question	Module 5: Review and assessment
122.	<p>Does the Regulatory Body perform thorough review and assessment of the operator's technical submission in order to determine whether the facility, activity or practice complies with the relevant safety objectives, principles and criteria?</p> <p>A primary basis for review and assessment is the information submitted by the operator. A thorough review and assessment of the operator's technical submission shall be performed by the regulatory body in order to determine whether the facility or activity complies with the relevant safety objectives, principles and criteria. In doing this, the regulatory body shall acquire an understanding of the design of the facility or equipment, the safety concepts on which the design is based and the operating principles proposed by the operator, to satisfy itself that:</p> <ul style="list-style-type: none"> (1) the available information demonstrates the safety of the facility or proposed activity; (2) the information contained in the operator's submissions is accurate and sufficient to enable confirmation of compliance with regulatory requirements; and (3) the technical solutions, and in particular any novel ones, have been proven or qualified by experience or testing or both, and are capable of achieving the required level of safety. <p><i>SS Ref.: GS-R-1 para 5.9</i></p>	
	<p>Answer:</p> <p>Yes. The regulatory body checks the technical documents submitted with regard to the fulfilment of safety-relevant aspects for completeness and technical correctness and consults different authorised experts in this process (see Module III). Assessment criteria are the absence of retroactive effects on other systems and components, compliance with nuclear regulations and the specifications of the licensing documents, and adherence to the safety specification. For this purpose, among other things plans and instructions of the Operating Manual taken into account. The authorised experts partly carry out their own independent calculations, examine design drawings, inspection plans and further documents. Furthermore, the regulatory authority and the authorised experts carry out accompanying examinations on-site in the plant as well as in-process inspections. If required, such in-process inspections are also performed at the suppliers' factories. Finally, completion and correct execution or implementation of the measure is inspected by walk-down.</p> <p>Regarding the Safety Reviews to be performed every ten years, the authorities have set themselves a limit of 2 years to evaluate these reviews.</p>	<p>Assessment: 3</p>

No	Question	Module 5: Review and assessment
123.	<p>Does the Regulatory Body satisfy itself that:</p> <ol style="list-style-type: none"> 1.the available information provided by the applicant demonstrates the safety of the facility or proposed activity or practice; 2.the information contained in the applicant’s submissions is accurate and sufficient to enable confirmation of compliance with regulatory requirements; and; and 3.the technical solutions, and in particular any novel ones, have been proven or qualified by experience or testing or both, and are capable of achieving the required level of safety?. <p>A primary basis for review and assessment is the information submitted by the operator. A thorough review and assessment of the operator’s technical submission shall be performed by the regulatory body in order to determine whether the facility or activity complies with the relevant safety objectives, principles and criteria. In doing this, the regulatory body shall acquire an understanding of the design of the facility or equipment, the safety concepts on which the design is based and the operating principles proposed by the operator, to satisfy itself that:</p> <ol style="list-style-type: none"> i. the available information demonstrates the safety of the facility or proposed activity; ii. the information contained in the operator’s submissions is accurate and sufficient to enable confirmation of compliance with regulatory requirements; and iii. the technical solutions, and in particular any novel ones, have been proven or qualified by experience or testing or both, and are capable of achieving the required level of safety. <p><i>SS Ref.: GS-R-1 para 5.9</i></p>	
	<p>Answer:</p> <p>Yes. The operator has to show that the technical solutions applied to fulfil the safety requirements in line with the state of the art in science and technology. In this respect he has to present documents on the suitability and proof testing or on proven service records. The correctness and suitability as well as the completeness of the documents and safety demonstrations presented are examined and assessed by the regulatory authority. The regulatory authority guarantees this by a corresponding structural and procedural organisation (see Oversight Manual and Module III).</p> <p>If necessary, authorised experts are consulted. Furthermore, the authority staff and experts apply additional measures to review the information provided in the documents, such as on-site inspections, interviews with the operator’s personnel in charge, and inspection of additional documents. The examinations are partly supported by the authorised expert’s own calculations.</p> <p>The number of authority staff in charge of managing the authorised experts is too low in relation to the number of experts at the TSOs. BMU and UM BW hold the view that each regulatory authority is entitled to have at least one trained expert at its disposal for each of the major specialist areas (material science, systems engineering, instrumentation and control, thermal hydraulics, etc.). At present, this demand is only partly fulfilled. The ability to ask the authorised experts and the operators the right questions and to deal with key technical issues to a sufficient degree is therefore limited.</p>	Assessment: 2

No	Question	Module 5: Review and assessment
124.	<p>Does the Regulatory Body prepare a programme of review and assessment of the facilities and activities and practices?</p> <p>The regulatory body shall prepare its own programme of review and assessment of the facilities and activities under scrutiny. The regulatory body shall follow the development of a facility or activity, as applicable, from initial selection of the site, through design, construction, commissioning and operation, to decommissioning, closure or closeout. Additional requirements for the review and assessment of a nuclear power plant are given in the Appendix.</p> <p><i>SS Ref.: GS-R-1 para 5.10</i></p> <p>Answer: Yes. Beyond the stipulations of the AtG and the nuclear regulations regarding the reviews and assessments of the plants, the regulatory authority sets itself its own review and assessment programme. The programme established by the Environment Ministry for the review and assessment of the nuclear power plants is defined in the Oversight Manual.</p> <p>The operating licences contain so-called oversight-steering requirements (cf. the operating licence of GKN II and the additional requirements imposed in November 2003). These requirements commit the operator to present to the authority at regular intervals i.a. verifications or reports on certain topics for examination, e.g. on the measures taken to guarantee the preservation of technical qualification, on the evaluation of events, on radiological emissions, or on the results of in-service inspections. This system of additional requirements is a basis of the oversight programme of the Oversight Manual.</p> <p>Further reviews are carried out on individual occasions if new knowledge comes to light from special events, operating experience or research projects.</p> <p>The concrete oversight work of the oversight programme is defined in the respective Ministry Section responsible for a special plant site. In addition these plant site sections are in co-ordination with the other Sections, for instance environmental radioactivity (see organisational chart). For this purpose, annual plans are drawn up and key oversight aspects, key activities of ministry Section etc. are defined. This is done in Section staff meetings and meetings of the Heads of the different Sections. The planning also considers the Safety Reviews required by the Atomic Energy Act with all their preparatory activities and studies.</p> <p>Beside the Guidelines on the Periodic Safety Review, the BMU does not dispose of any systematic programmes for a review and assessment of the plants.</p>	<p>Assessment: UM BW 3/BMU 2</p>
125.	<p>Does the Regulatory Body ensure that safety related modifications are subject to review and assessment commensurate with the potential magnitude and nature of the hazard presented?</p> <p>Any modification to safety related aspects of a facility or activity (or having an indirect but significant influence on safety related aspects) shall be subject to review and assessment, with the potential magnitude and nature of the associated hazard being taken into account.</p> <p><i>SS Ref.: GS-R-1 para 5.11</i></p>	

No	Question	Module 5: Review and assessment
	<p>Answer: Yes. The regulatory authority and the operators have agreed a Land-wide standardised modification procedure for modifications of the plants or their operation. This procedure defines different levels of detail and scope of the inspections, depending on the safety significance (which also includes the possible risk potential) of the modification applied for. The systems and components affected by the modification and the extent of the necessary measures resulting from the modifications are also relevant for the classification. The Land-wide standardised modification procedure commits the operator to document all modifications and to classify them according to their safety relevance into different categories. The categories reach from A to D and can be characterised as follows: A: execution of a formal licensing procedure (in the case of essential modifications), B: "regulatory approval required", C: "accompanying control by the authorised experts", D: "within the operator's own responsibility".</p> <p>A detailed description can be found in the Oversight Manual, Chapter 7.3.4.</p> <p>For all modifications except those that the operator carries out in his own responsibility, the operator has to present documents and safety demonstrations that prove that the safety requirements are fulfilled. The classification into categories and the documents are reviewed and assessed by the regulatory authorities, if necessary with support by authorised experts.</p> <p>At regular intervals, about once a year, a regulatory on-site inspection is carried out into whether the operator has made a correct classification into category D "within the operator's own responsibility".</p>	<p style="text-align: right;">Assessment: 3</p>

3.2.7 Module 6: Inspection and enforcement

No	Question Module 6: Inspection and enforcement
126.	<p>Does the Regulatory Body carry out inspections?</p> <p>Regulatory inspection and enforcement activities shall cover all areas of regulatory responsibility. The regulatory body shall conduct inspections to satisfy itself that the operator is in compliance with the conditions set out, for example, in the authorization or regulations. In addition, the regulatory body shall take into account, as necessary, the activities of suppliers of services and products to the operator. Enforcement actions shall be applied as necessary by the regulatory body in the event of deviations from, or non-compliance with, conditions and requirements.</p> <p><i>SS Ref.: GS-R-1 para 5.12</i></p> <p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The Atomic Energy Act (Atomgesetz – AtG) regulates, among other things, supervision by the government (§ 19 AtG). The performance of supervision, i.e. also of inspections, is a duty of the competent nuclear regulatory authority.</p> <p>As competent regulatory authority, the Ministry of the Environment Baden-Württemberg carries out inspections in the nuclear installations in the <i>Land</i> of Baden-Württemberg. The plant inspections are a central and indispensable part of the supervision strategy of the Ministry of the Environment Baden-Württemberg.</p> <p>Type, methods and scope of inspections are stipulated in the oversight manual and differ according to plant state (e.g. operation, revision and decommissioning).</p> <p>Within the framework of basic oversight of operation, an annual inspection programme is set up and performed for each unit of a nuclear power plant (cf. Section 7.3.2.1.1 of the oversight manual). The time consumed for the on-site inspections within this programme is about 48 man days per year and nuclear power plant unit. The annual inspection programme covers all inspection areas relevant for oversight. These are, in particular,</p> <ul style="list-style-type: none"> - modification procedures, - operational management, - maintenance/repair, - in-service inspections, - quality assurance, - technical qualification,

No	Question	Module 6: Inspection and enforcement
	<ul style="list-style-type: none"> - radiation protection, - chemistry, - integrated event analysis (GEA), - ageing management, - emergency protection, - physical protection, - handling of fuel elements, - fire protection at the site, - documentation, and - structural engineering <p>In this respect, the object of oversight is the entire plant.</p> <p>The on-site inspections have three essential functions:</p> <ul style="list-style-type: none"> - Presence function: regular contact with plant and personnel, perception of plant changes, insight into the operational processes. - Communication function: contact for operator, receipt of information, talks with the shift supervisor on the current condition of the plant. - Control function: walkdowns/inspections in specific parts of the plant, control of the shift log, verification of fulfilment of requirements of the licence. <p>Moreover, special occasions require additional on-site presence. So, further plant inspections are carried out, e.g., in case of reportable events, in connection with the annual inspection or within the framework of oversight priorities. Thus, the total time consumed for regulatory oversight activities at the site is about 1 to 2 man days per week and nuclear power plant unit.</p> <p>The inspections of the authority are supplemented by plant walkdowns and controls of operational management, performed by an expert consulted. These on-site controls by the authorised expert are performed on the basis of annual schedules agreed upon by the expert and the regulatory authority (also cf. Section 2.4/2 of the oversight manual, agreement with the expert KeTAG, Annex 3, work package 4).</p>	
127.	<p>Does the inspection programme cover all areas of the Regulatory Body's regulatory responsibility?</p> <p>Regulatory inspection and enforcement activities shall cover all areas of regulatory responsibility. The regulatory body shall conduct inspections to satisfy itself that the operator is in compliance with the conditions set out, for example, in the authorization or regulations. In addition, the regulatory body shall take into account, as necessary, the activities of suppliers of services and products to the operator. Enforcement actions shall be applied as necessary by the regulatory body in the event of deviations from, or non-compliance with, conditions and requirements.</p> <p><i>SS Ref.: GS-R-1 para 5.12</i></p>	

No	Question	Module 6: Inspection and enforcement
	<p>Answer: Yes. The annual inspection programme covers all inspection areas relevant in terms of nuclear supervision so that their regular inspection by the authority is ensured. As far as possible, compliance with the provisions relating to the scope of the licence and with the licence conditions or subsequently imposed obligations is also controlled by the regulatory authority through on-site inspections.</p>	Assessment: 3
128.	<p>How does the Regulatory Body take into account, as necessary, the activities of suppliers of services and products to the operator?</p> <p>Regulatory inspection and enforcement activities shall cover all areas of regulatory responsibility. The regulatory body shall conduct inspections to satisfy itself that the operator is in compliance with the conditions set out, for example, in the authorization or regulations. In addition, the regulatory body shall take into account, as necessary, the activities of suppliers of services and products to the operator. Enforcement actions shall be applied as necessary by the regulatory body in the event of deviations from, or non-compliance with, conditions and requirements.</p> <p><i>SS Ref.: GS-R-1 para 5.12</i></p> <p>Answer: As a basic principle, the plant operator bears full responsibility for all activities and processes in his plant, also if these are performed by contractors and external personnel. The operator has to possess adequate instruments to be able to ensure the quality of products of suppliers.</p> <p>The regulatory authority checks whether the operator has implemented the corresponding regulations and processes that ensure that</p> <ul style="list-style-type: none"> - contractors and suppliers have the necessary qualification, - the activities of the contractors are monitored adequately, - the work is performed and completed properly, and - the products are of the required quality and are accepted by the operator. <p>Further, the regulatory authority checks whether these regulations are applied by the operator and are functioning (control of monitoring by the operator).</p> <p>For safety-relevant components, controls during the manufacturing process are performed by the regulatory authority and its authorised experts. This accompanying control includes the review of the manufacturing documentation, the qualification of the vendor, the control of manufacture and audits in the manufacturing plant as well as the control of acceptance and functional tests and commissioning tests.</p>	Assessment: 3

No	Question	Module 6: Inspection and enforcement
129.	<p>Does the Regulatory Body ensure through the inspections and enforcement that:</p> <ol style="list-style-type: none"> 1. Facilities, equipment and work performance meet all necessary requirements;; 2. Relevant documents and instructions are valid and are being complied with; 3. Persons employed by the operator (including contractors) possess the necessary competence for the effective performance of their functions;; 4. Deficiencies and deviations are identified and are corrected or justified without undue delay;; 5. Any lessons learned are identified and propagated to other operators and suppliers and to the regulatory body as appropriate;; and 6. The operator is managing safety in a proper manner? <p>The main purposes of regulatory inspection and enforcement are to ensure that:</p> <ol style="list-style-type: none"> (1) facilities, equipment and work performance meet all necessary requirements; (2) relevant documents and instructions are valid and are being complied with; (3) persons employed by the operator (including contractors) possess the necessary competence for the effective performance of their functions; (4) deficiencies and deviations are identified and are corrected or justified without undue delay; (5) any lessons learned are identified and propagated to other operators and suppliers and to the regulatory body as appropriate; and (6) the operator is managing safety in a proper manner. <p>Regulatory inspections shall not diminish the operator's prime responsibility for safety or substitute for the control, supervision and verification activities that the operator must carry out.</p> <p><i>SS Ref.: GS-R-1 para 5.13</i></p>	
	<p>Answer: No. 1 - 6: Yes. First of all it is to be considered that the operators are obliged to ensure safe operation of their plants themselves and under their own responsibility. They have to ensure functioning monitoring and corresponding quality assurance measures. On this issue, the Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the <i>Land</i> authorities initiated the development and application of a safety management system by all plant operators. The BMU requested the operators to implement a process-based safety management complying with the state of the art until August 2008. The regulatory authority controls the effectiveness of the systems for monitoring by the operators on a random basis through, among other things, on-site inspections (cf. Section 7.3.2.1.1 of the oversight manual).</p> <p>In order to fulfil all safety-relevant tasks in a comprehensive manner, the operators of the nuclear power plants in Baden-Württemberg developed a process-based safety management system under consideration of DIN EN ISO 9001, the IAEA Safety Guide NS-G-2.4 and the INSAG 13 report and implemented it at the plants. The underlying process model includes all safety-relevant processes. The safety management system enables the operator to control and monitor the quality of the processes by means of indicators. The processes of the safety management system are primarily controlled by</p>	Assessment: 3

No	Question	Module 6: Inspection and enforcement
	<p>the operators themselves. In order to control the effectiveness of this indicator-based safety management system on the part of the regulatory authority, different activities are provided (cf. Sections 7.3.2.1.5 and 7.3.2.1.5/1 of the oversight manual), e.g. also the review of safety-relevant processes within the framework of plant inspection.</p> <ol style="list-style-type: none"> 1) One of the functions of plant inspections is to control the compliance with the requirements of the licence. For this purpose, 16 inspection areas were defined which, together, correspond to an annual inspection programme. Many on-site inspections include plant walkdowns during which, e.g., the overall condition of the plant, the condition of systems and components, the performance of modification measures or the compliance with the requirements and conditions for plant operation are controlled. Regular visits of the control room are also part of the inspection programme. These are considered especially important to seek dialogue with the shift supervisor and shift personnel to obtain, on the one hand, information about the current plant condition and current work and, on the other hand, to be available as contact person. Moreover, viewing the shift log, safe work permits and diverse minutes and operational records, e.g. safety-relevant alarms, provides a picture of the operational processes. 2) The provisions on the written operating rules and documentation are included in the operating licences. During on-site inspections, compliance with the operating rules and the documentation of the operator are reviewed as a matter of routine. So, e.g., it is controlled in the case of planned modifications whether documentation is updated without undue delay, or during visits of the control room whether the operating manual is available in an updated and complete form. Other objects of plant inspections are the performance and documentation of maintenance measures and in-service inspections (e.g. compliance with maintenance and test intervals as scheduled and documentation of test results) or compliance with provisions of radiation protection. 3) The requirements on training and practical experience for the personnel at nuclear power plants are defined in a guideline on technical qualification. The regulatory authority reviews the documents submitted as proof of the technical qualification for compliance with the provisions of the guideline and controls during on-site inspections the required technical qualification of the responsible personnel and the required knowledge of the persons otherwise engaged in the operation of the installation by talks and questions. The regulatory authority also takes part in oral examinations of the responsible shift personnel. When commissioning third parties, the qualification of the contractor of the operator is defined and verified. By on-site accompaniment and supervision of the activities as well as by acceptance procedures of the operator, proper performance is ensured. By random inspections, the regulatory authority controls if this system is actually applied as specified. 4) During on-site inspections it is checked whether deficiencies or deviations identified were properly corrected. In case of shortcomings, the operator will be requested to initiate appropriate measures for removal. The handling of safety-relevant alarms is controlled by means of the electronic computer-based operational management system of the operator on a random basis. 5) Recording and evaluation of events and experience feedback is an important process within the safety management system of the operator. Subject to evaluation are, in accordance with the requirements of the operating licence, reportable events from all nuclear power plant in Germany and 	

No	Question	Module 6: Inspection and enforcement
	<p>events abroad, as far as applicable to German plants.</p> <p>For example by questioning the shift personnel on knowledge available about special occurrences and events at the plant and how events at other plants are assessed and which measures are to be derived from it, the regulatory authority examines how such knowledge and findings are considered in practice and how the process “experience feedback” is lived.</p> <p>In addition to it, an own inspection area is dedicated to the integrated event analysis (GEA) with the aim to control the adequate application of the GEA and the SOL (<u>S</u>afety through <u>O</u>rganizational <u>L</u>earning) methodology. For this purpose, the treatment of events and the implementation of measures are subjected to on-site inspections.</p> <p>6) For control and improvement of safety, the operators introduced a safety management system which, in some parts, is also object of regulatory supervision. In order to judge the effectiveness of the safety management system, individual aspects are discussed in depth at annual meetings on the basis of the annual review report on the safety management system. Moreover, those processes or sub-processes are controlled during on-site inspections which form part of the subject of oversight to verify that these processes are indeed implemented.</p> <p>In order to obtain information about the safety culture of the operator, observations are made and impressions gathered during plant inspections, that relate to aspects of the plant’s safety culture and go beyond the actual subject of oversight. Even though such observations alone may not be conclusive, they can contribute to the overall picture. This is why the regulatory authority endeavours continuously to record, document and analyse certain organisational and personnel aspects, using the newly developed KOMFORT oversight tool (Catalogue for recording organisational and human factors during on-site inspections - <i>Katalog zur Erfassung organisationaler und menschlicher Faktoren bei Inspektionen vor Ort</i>) (cf. checklist and indicator catalogue for KOMFORT, Section 7.3.2.1.1/2 of the oversight manual).</p> <p>Talks within the framework of regulatory supervision at different levels (strategic dialogue, talks of the section heads with plant managers or talks at the technical level) are structured and evaluated such to ensure that the plant is operated safely and the personnel perform their duties.</p>	

No	Question	Module 6: Inspection and enforcement
130.	<p>Notwithstanding the legal requirement, how in practice does the Regulatory Body ensure that regulatory inspections do not diminish the operator's prime responsibility for safety or substitute for the control, supervision and verification activities the operator must carry out?</p> <p>The main purposes of regulatory inspection and enforcement are to ensure that:</p> <ol style="list-style-type: none"> (1) facilities, equipment and work performance meet all necessary requirements; (2) relevant documents and instructions are valid and are being complied with; (3) persons employed by the operator (including contractors) possess the necessary competence for the effective performance of their functions; (4) deficiencies and deviations are identified and are corrected or justified without undue delay; (5) any lessons learned are identified and propagated to other operators and suppliers and to the regulatory body as appropriate; and (6) the operator is managing safety in a proper manner. <p>Regulatory inspections shall not diminish the operator's prime responsibility for safety or substitute for the control, supervision and verification activities that the operator must carry out.</p> <p><i>SS Ref.: GS-R-1 para 5.13</i></p>	
	<p>Answer:</p> <p>The principle of responsibility of the licensee for safe operation is based on the regulations of the Atomic Energy Act (AtG) on licensing and supervision. According to § 7 AtG, a licence for erection and operation will only be granted if the applicant proves that he has taken the necessary technical and organisational precautions for safe operation. During operation, the plant operator has to fulfil his responsibility for safe operation continuously. This is verified and ensured by the regulatory authorities which have the means of §§ 17 and 19 of the Atomic Energy Act at their disposal.</p> <p>Uninterrupted supervision by the government both in terms of time and subject matter is not possible and, moreover, would not be conformable with the constitutional order and the legal position of the operator based on it. Further, one hundred percent control would also lead to inappropriate shifting of responsibilities.</p> <p>According to the principle of self-responsibility, the safety of a nuclear power plant lies within the responsibility of the plant operator who has to ensure safe plant operation by adequate control measures that comply with the requirements of monitoring performed by the operator (see Section 3.1.4 of the oversight concept). The task of the regulatory authority, however, is to use suitable tools to control on a random basis whether the operator fulfils his responsibility.</p> <p>The regulatory inspection procedures provide both inspections which are relatively independent of the monitoring by the operator (e.g. on-site inspections, remote monitoring of nuclear reactors) and those which are based on the monitoring by the operator (e.g. preventive maintenance, safety management systems). The responsibility of the operator for functioning monitoring by the operator remains unaffected by the applied inspection procedures of the regulatory authority.</p>	<p>Assessment: 3</p>

No	Question Module 6: Inspection and enforcement
	<p>In practice, this means the following:</p> <ul style="list-style-type: none"> - The scope of the on-site oversight activities performed by the authority with 1 to 2 man days per week and nuclear power plant unit is a control on a random basis. - Within the framework of its activities, the regulatory authority therefore pays increased attention to whether the operator has a functioning system for monitoring and application of his processes. In this respect, emphasis is laid on controlling the monitoring by the operator. - The regulatory authority ensures in particular that the operator himself removes the deficiencies identified by him in due course. - As a matter of principle, it is expected that the operator himself proposes or initiates the necessary measures for removal of deficiencies and deviations, proposes improvements and not primarily relies on the authority or the authorised expert. The initiative should always be taken by the operator. <p>The regulatory authority pays special attention to appropriate measures to avoid recurrence of events and will, in case of recurrence, be more responsive to it.</p>
131.	<p>Has the Regulatory Body established a planned and systematic inspection programme to satisfy itself that the operator is in compliance with the regulatory requirements?</p> <p>The regulatory body shall establish a planned and systematic inspection programme. The extent to which inspection is performed in the regulatory process will depend on the potential magnitude and nature of the hazard associated with the facility or activity.</p> <p><i>SS Ref.: GS-R-1 para 5.14</i></p>
	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes.</p> <p>Inspection by the <i>Länder</i> is performed in a systematic and planned manner. The regular evaluation of findings and results from the inspection procedures enables the <i>Länder</i> to organise their oversight, e.g. by additional inspections if relevant findings surface, such that safety-relevant issues are addressed with the appropriate attention.</p> <p>The entire inspection programme is based on the oversight concept and is subject of the oversight manual. It is structured systematically, covers all relevant areas and its content is subject to continuous improvement and further development.</p> <p>An important part of the regulatory inspection programme are on-site inspections which are performed in a planned and systematic manner in terms of an integrated plant assessment (see Section 7.3.2.1.1/1 of the oversight manual). This is to ensure that all inspection areas relevant for regulatory</p>

No	Question Module 6: Inspection and enforcement
	<p>oversight of the nuclear power plants are reviewed by the authority at regular intervals. The planning of on-site inspection is based on an annual inspection programme for each nuclear power plant. This programme consists of 16 inspection areas and is updated annually on the basis of findings and results from oversight activities of the preceding year. During evaluation of the annual inspection programme by the plant-related section, the results of all oversight activities are brought together and discussed and assessed within the framework of an overall view on the plant.</p>
132.	<p>Does the frequency and extent of the inspection depend of potential magnitude and nature of the hazard associated with the facility or activity or practice?</p> <p>The regulatory body shall establish a planned and systematic inspection programme. The extent to which inspection is performed in the regulatory process will depend on the potential magnitude and nature of the hazard associated with the facility or activity.</p> <p><i>SS Ref.: GS-R-1 para 5.14</i></p>
	<p style="text-align: right;">Assessment: 2</p> <p>Answer: Yes.</p> <p>Due to the high hazard potential of the nuclear power plants in operation, the inspection density for these plants is higher than that for decommissioned plants or other nuclear facilities (research laboratories, training reactors, interim storage facilities, etc.). However, for research reactors in operation (not existing in the <i>Land</i> of Baden-Württemberg), the same requirements on inspection density are generally imposed as for nuclear power plants, but in practice it will be considerably lower due to the considerably less number of components, safety-relevant systems and equipment and personnel.</p> <p>The scope of inspection activities for the different inspection areas provided in the annual inspection programmes of the nuclear power plants is based on many years of experience and practice and thus reflects the safety relevance of individual plant equipment, systems, components or operational processes in the selection of inspection areas and scope of inspection.</p> <p>There are discussions to consider the results of the probabilistic safety analyses for all plants in the further development of the annual inspection programme (risk-informed approach, see Action Plan).</p> <p>In case of special plant-internal events or significant occurrences at other plants, or in order to be able to perform in-depth reviews on specific areas within the framework of oversight priorities, additional inspections are performed, as required.</p> <p>Finally, the operator is requested in all cases where deficiencies were identified, to determine the cause and to provide corrective measures or improvements and to submit a corresponding report including their description to the regulatory authority. This report of the operator will be subject and starting point of further regulatory activities.</p>

No	Question	Module 6: Inspection and enforcement
133.	<p>Does the Regulatory Body undertake announced and unannounced inspections?</p> <p>Inspection by the regulatory body, both announced and unannounced, shall be a continuing activity. If the regulatory body uses the services of consultants for the inspections, then it shall have the responsibility for taking any actions on the basis of these inspections.</p> <p><i>SS Ref.: GS-R-1 para 5.15</i></p> <p>Answer: Yes. On-site inspection will generally be announced (regarding date and issues to be addressed) so that the operator can initiate the necessary preparations (e.g. provision of documents, attendance of contact persons, ensuring the accessibility to plant areas to be inspected).</p> <p>Within the framework of these inspection, there will also regulatory objects or related topics be considered about which the operator had not been informed in advance.</p> <p>In addition, there are unannounced plant inspections without informing the operator about the date and the areas to be inspected which may also be performed, depending on the subject of inspection, outside the usual office hours.</p>	Assessment: 3
134.	<p>Where the Regulatory Body uses consultants to perform inspections, does the Regulatory Body retain the responsibility for taking any actions on the basis of these inspections?</p> <p>Inspection by the regulatory body, both announced and unannounced, shall be a continuing activity. If the regulatory body uses the services of consultants for the inspections, then it shall have the responsibility for taking any actions on the basis of these inspections.</p> <p><i>SS Ref.: GS-R-1 para 5.15</i></p> <p>Answer: Yes. On-site inspections by the regulatory authority are supplemented by plant walkdowns and controls of operational management performed by experts consulted. These on-site controls by the authorised expert, agreed upon between expert and authority, are performed on the basis of annual schedules. The measures to be derived from the results of the plant inspections remain within the regulatory authority and are defined and enforced by it.</p>	Assessment: 3

No	Question	Module 6: Inspection and enforcement
135.	<p>Does the Regulatory Body undertake inspections at short notice in response to abnormal events that warrant immediate investigation?</p> <p>In addition to routine inspection activities, the regulatory body shall carry out inspections at short notice if an abnormal occurrence warrants immediate investigation. Such regulatory inspection shall not diminish the responsibility of the operator to investigate any such occurrence immediately.</p> <p><i>SS Ref.: GS-R-1 para 5.16</i></p> <p>Answer: Yes. The Ministry of the Environment considers it important to build its own picture at the site in case of significant events to be able to judge planned measures on the basis of an own assessment of the situation and, if required, to initiate further measures and co-ordinate the further proceeding.</p> <p>All plants are reachable from the Ministry of the Environment in less than 1.5 hours and thus in short time. The expert organisations are also located near to the plants. These boundary conditions allow short reaction times for the Ministry of the Environment.</p> <p>For events requiring immediate investigation, there is an on-call duty 24 hours a day both at the regulatory authority and at the expert organisations TÜV and KeTAG. Moreover, the phone numbers of the competent official of the authority is known to the operator. In this way, the operator is able to get quickly into contact with the regulatory authority which may send own staff but also authorised experts to the plant for clarification.</p> <p>For the case of an unplanned reactor scram, there is a co-ordinated procedure regulating the processes and regulatory reviews before restart (see Section 7.3.2.4.1/3 of the oversight manual). The proceedings and procedures applied in case of major abnormal events and emergencies are dealt with in the emergency manual.</p>	<p>Assessment: 3</p>
136.	<p>In the case of abnormal events that warrant short notice inspections, does the Regulatory Body ensure that such inspections do not diminish the responsibility of the operator to perform an immediate investigation of any such occurrence?</p> <p>In addition to routine inspection activities, the regulatory body shall carry out inspections at short notice if an abnormal occurrence warrants immediate investigation. Such regulatory inspection shall not diminish the responsibility of the operator to investigate any such occurrence immediately.</p> <p><i>SS Ref.: GS-R-1 para 5.16</i></p> <p>Answer: Yes. The self-responsibility of the operator is generally not diminished by supervisory activities of the authority. In the case of abnormal events, processes of the operator become effective that are part of the process-based safety management system.</p>	<p>Assessment: 3</p>

No	Question	Module 6: Inspection and enforcement
	<p>For recording of events and experience feedback and for the event analyses, there are individual processes ensuring thorough investigation and assessment of the events by the operator. The methods of the operator applied for event analysis and in connection with experience feedback are subject of oversight of event analysis performed by the operator (see Sections 7.3.2.1.11 and 7.3.2.1.11/1 of the oversight manual).</p> <p>Apart from that, the authority may perform or commission own investigations and determine necessary corrective measures and precautions against recurrence. The regulatory activities of the authority are always aimed at leaving the responsibility of the operator unaffected (also see answer to question 130).</p>	
137.	<p>Does the Regulatory Body require inspectors to prepare a report of their inspection activities and findings?</p> <p>Regulatory inspectors shall be required to prepare reports of their inspection activities and findings, which shall be fed back into the regulatory process.</p> <p><i>SS Ref.: GS-R-1 para 5.17</i></p> <p>Answer: Yes. The results of the on-site inspections are documented at the regulatory authority. For this purpose, the authority staff prepare inspection protocols for each plant inspection using a standard form. The inspection protocol is forwarded to the competent section head and the staff competent for the plant for information and then stored in the electronic system for supervision documentation (AGAVE).</p> <p>As far as during plant visits, particular circumstances are identified or important findings are made, these are addressed and discussed, among other things, for the purpose of information exchange within the framework of the routine section meetings and, if appropriate, also in the meeting of the section heads in all divisions.</p> <p>Shortcomings are communicated to the operator in a so-called redress letter (see Section 8.5 of the oversight concept). In this redress letter, it is also stipulated until when the deficiencies identified have to be removed.</p> <p>In addition, the entire oversight activities are summarised in monthly and annual reports.</p>	Assessment: 3
138.	<p>Does the Regulatory Body require the inspection findings to be fed back into the regulatory process?</p> <p>Regulatory inspectors shall be required to prepare reports of their inspection activities and findings, which shall be fed back into the regulatory process.</p> <p><i>SS Ref.: GS-R-1 para 5.17</i></p>	

No	Question	Module 6: Inspection and enforcement
	<p>Answer: Yes.</p> <p>The annual inspection programme is evaluated by the plant-related section every year. The results of this evaluation and the results from other inspection areas are included in the development of the next annual inspection programme. In this respect, the principle is applied that oversight is to be increased where there are obvious deficits and routine oversight is reduced where the operator has already reached a high safety level and no deficits can be identified.</p> <p>Moreover, the results of the section-internal evaluation of the annual inspection programmes are presented, discussed and approved at management level at the section head meetings.</p> <p>The oversight manual as overall inspection programme is, as “living work”, subject to continuous improvement.</p> <p>Due to the participation of oversight officials in the Nuclear Safety Standards Commission (KTA) and the technical committees and working groups of the <i>Länder</i> Committee for Nuclear Energy (LAA) (e.g. in the technical committee on reactor safety), findings and results from supervisory procedures are included in the experience exchange between the <i>Länder</i> and in regulatory projects.</p>	<p>Assessment: 3</p>
139.	<p>Does the Regulatory Body take enforcement action in the event of deviations from, or noncompliance with, the Regulatory Body conditions and requirements?</p> <p>Regulatory inspection and enforcement activities shall cover all areas of regulatory responsibility. The regulatory body shall conduct inspections to satisfy itself that the operator is in compliance with the conditions set out, for example, in the authorization or regulations. In addition, the regulatory body shall take into account, as necessary, the activities of suppliers of services and products to the operator. Enforcement actions shall be applied as necessary by the regulatory body in the event of deviations from, or non-compliance with, conditions and requirements.</p> <p><i>SS Ref.: GS-R-1 para 5.12</i></p>	
	<p>Answer: Yes.</p> <p>The enforcement of applicable regulations in the nuclear field is supported by certain measures contained in the Criminal Code, in the Atomic Energy Act and the nuclear regulatory ordinances in case of any violations.</p> <p>The enforcement methods, their legal basis and their scope are explained in detail in the answer to question 141 and described in detail in Section 8 of the oversight concept and in Chapter 7 (2iv) of the CNS report.</p>	<p>Assessment: 3</p>

No	Question	Module 6: Inspection and enforcement
	<p>In addition to the government measures to enforce safe and lawful conditions, such as “Corrective direction”, Means of coercion” and “Administrative fine“ (see Sections 8.2, 8.3 and 8.4 of the oversight concept) the regulatory authority also has the possibility to influence the operators without using official means of coercion through informal administrative action and co-operative administrative action (see Sections 8.5 and 8.6 of the oversight concept). Finally, the authority can pass on its findings from its inspections to other agencies, as e.g. the prosecuting authorities, which in turn have intervention powers of their own vis-à-vis the operators (see Section 8.7 of the oversight concept).</p>	
140.	<p>Are enforcement actions commensurate with the seriousness of the non-compliance?</p> <p>Enforcement actions are designed to respond to non-compliance with specified conditions and requirements. The action shall be commensurate with the seriousness of the non-compliance. Thus there are different enforcement actions, from written warnings to penalties and, ultimately, withdrawal of an authorization. In all cases the operator shall be required to remedy the non-compliance, to perform a thorough investigation in accordance with an agreed time-scale, and to take all necessary measures to prevent recurrence. The regulatory body shall ensure that the operator has effectively implemented any remedial actions.</p> <p><i>SS Ref.: GS-R-1 5.18</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. There are different possibilities of corrective intervention and of sanctions within the framework of federal supervision. The regulatory measures range from informal and co-operative administrative action in the area of more extensive control (see Section 5.4 of the oversight concept) to ordering of certain protection measures for averting danger or even to final cessation of the operation of a nuclear installation. In this respect, the principle of proportionality is to be adhered to (also see Section 8.2.2 of the oversight manual). This means that a regulatory measure, on the one hand, has to be suitable and necessary and, on the other hand, has to comply with the tenet of least possible intervention.</p>
141.	<p>What methods of enforcement (e.g. warning letters, penalties, withdrawal of authorisation) are available to the Regulatory Body?</p> <p>Enforcement actions are designed to respond to non-compliance with specified conditions and requirements. The action shall be commensurate with the seriousness of the non-compliance. Thus there are different enforcement actions, from written warnings to penalties and, ultimately, withdrawal of an authorization. In all cases the operator shall be required to remedy the non-compliance, to perform a thorough investigation in accordance with an agreed time-scale, and to take all necessary measures to prevent recurrence. The regulatory body shall ensure that the operator has effectively implemented any remedial actions.</p> <p><i>SS Ref.: GS-R-1 5.18</i></p>	

No	Question	Module 6: Inspection and enforcement
	<p>Answer: The enforcement methods, their legal basis and their scope are described in Chapter 8 of the oversight concept.</p> <p>These are, in particular,</p> <ul style="list-style-type: none"> - the corrective direction (see Section 8.2 of the oversight concept): The Atomic Energy Act (AtG) vests the regulatory authority with certain powers of intervention to enforce safe and lawful conditions. According to § 19 AtG, the authority may direct that unlawful or dangerous states be discontinued and, in particular, whether and which protective action must be taken; it may direct that radioactive materials be stored or kept in custody at a place it designates and that the construction and operation of nuclear power plants be suspended or, if a requisite licence is not granted or is definitely revoked, be discontinued. - Means of coercion (see Section 8.3 of the oversight concept): Both directions issued by the regulatory authority to enforce powers of inspection and directions issued in the course of corrective intervention are administrative acts which are enforced under the <i>Land</i> Administrative Enforcement Act (Landesverwaltungsvollstreckungsgesetz – LVwVG). This act permits the use of means of coercion. In addition to administrative fines and coercive detention, these means include directing a third party to take the necessary action, and direct enforcement. - Administrative fine (see Section 8.4 of the oversight concept): In addition to the possibilities of compulsory enforcement of administrative acts, the regulatory authority can, under certain conditions regulated in the Atomic Energy Act, impose an administrative fine, especially when the operator contravenes an enforceable requirement under the Atomic Energy Act. It is permissible to conduct administrative enforcement proceedings and proceedings for the imposition of an administrative fine at the same time, provided the legal requirements are satisfied in each case. However, the purposes of these proceedings differ. The administrative fine serves to impose a subsequent penalty for negligent offences. It aims to urge the persons concerned to abide by the law in future. The purpose of administrative enforcement proceedings, on the other hand, is strictly to enforce a certain official order against the will of the addressee. - Informal administrative action (see Section 8.5 of the oversight concept): In addition to formal action, i.e. an administrative act and the imposition of an administrative fine, there are communications, notices or approval by the regulatory authority which do not take the form of an administrative act. These include, e.g., <ul style="list-style-type: none"> • an informal letter by the regulator informing the operator of shortcomings identified during on-site inspections and asking him to remedy the situation (redress letter), • the communication that regulatory inspections, e.g. during revision, have been completed and the plant can be restarted, • the communication that after having reviewed intended minor modifications to the plant or its operation the regulator has no objections and hence agrees to the implementation of these modifications, or • the communication to the operators of the result of staff vetting. - Co-operative administrative action (see Section 8.6 of the oversight concept): The regulatory authority makes use of different forms of co-operative administrative action. The principle of co-operation which plays a significant 	<p style="text-align: right;">Assessment: 3</p>

No	Question Module 6: Inspection and enforcement
	<p>role in environmental law can also be found in different forms in nuclear law. By making reference to the extralegal standard of 'the state of the art', the Atomic Energy Act adopts this system, including the statements, assessments and evaluations of the expert communities involved. The state of the art is substantiated by private-law and public-law committees and bodies and the technical rules they have developed (see Section 5.5 of the oversight concept). These organisations are composed of representatives of technical support organisations, vendors, the authorities and the operators. Quite often, the basis for nuclear power plant backfittings is already created at this co-operative level.</p> <p>Also in the direct legal relationship between regulatory authority and operator, the two parties co-operate by way of preliminary negotiations, agreements and arrangements, occasionally also in the form of a contract under public law (see Section 10 of the oversight concept). However, these forms of co-operative administrative action are not suitable for averting danger. In the area of compliance control, they can only be applied in exceptional cases, e.g. to remedy purely formal shortcomings. This is why they will mostly be used for the purpose of more extensive control (see Section 4.3 of the oversight concept).</p> <ul style="list-style-type: none"> - Communications to third parties (see Section 8.7 of the oversight concept): Apart from issuing corrective orders and using other types of administrative action, the nuclear regulatory authority can also pass on its findings from its inspections to third parties (prosecuting authorities), which in turn have intervention powers of their own vis-à-vis the operators.
142.	<p>In all cases of non-compliance, does the Regulatory Body require the operator to:</p> <ol style="list-style-type: none"> a. Rectify the non-compliance; b. Perform a thorough investigation in an agreed time scale; c. Take all necessary measures to prevent recurrence? <p>Enforcement actions are designed to respond to non-compliance with specified conditions and requirements. The action shall be commensurate with the seriousness of the non-compliance. Thus there are different enforcement actions, from written warnings to penalties and, ultimately, withdrawal of an authorization. In all cases the operator shall be required to remedy the non-compliance, to perform a thorough investigation in accordance with an agreed time-scale, and to take all necessary measures to prevent recurrence. The regulatory body shall ensure that the operator has effectively implemented any remedial actions.</p> <p><i>SS Ref.: GS-R-1 5.18</i></p>
	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. In case of non-compliance with the provisions relating to the scope of the licence and with the licence conditions, the operators are generally called upon to eliminate them. The enforcement measures available to the regulatory authority are described in Chapter 9 of the oversight concept (also see answer to question 141).</p>

No	Question	Module 6: Inspection and enforcement
	<p>The occurrences are to be subjected to in-depth investigation by the operator and to identify the causes in order to initiate appropriate measures against recurrence.</p>	
143.	<p>Does the Regulatory Body ensure that the operator has effectively implemented any remedial actions identified from enforcement actions?</p> <p>Enforcement actions are designed to respond to non-compliance with specified conditions and requirements. The action shall be commensurate with the seriousness of the non-compliance. Thus there are different enforcement actions, from written warnings to penalties and, ultimately, withdrawal of an authorization. In all cases the operator shall be required to remedy the non-compliance, to perform a thorough investigation in accordance with an agreed time-scale, and to take all necessary measures to prevent recurrence. The regulatory body shall ensure that the operator has effectively implemented any remedial actions.</p> <p><i>SS Ref.: GS-R-1 5.18</i></p> <p>Answer: Yes. For implementation of the remedial measures, the operator generally has to present a concept and a schedule. The measures provided in the concept as well as their later implementation will be assessed and monitored by means of documents (e.g. applications for modifications if modifications are required) and by meetings on technical issues and status.</p> <p>During their on-site inspections, the authority staff pay particular attention that the measures performed by the operator are properly implemented and are also “lived”.</p> <p>The regulatory authority considers the occurrence of similar events or non-compliances as indication that the implementation of the measures might not have been effective. In such a case, the regulatory authority will initiate an in-depth analysis of the causes.</p>	<p>Assessment: 3</p>
144.	<p>On finding deviations from, or violations of, legal requirements, or unsatisfactory situations which have minor safety significance, does the Regulatory Body issue a written warning or directive that identifies the nature and regulatory basis of each violation and a period of time permitted for taking remedial action?</p> <p>Deviations from, or violations of, requirements, or unsatisfactory situations which have minor safety significance, may be identified at facilities or in the conduct of activities. In such circumstances, the regulatory body shall issue a written warning or directive to the operator which shall identify the nature and regulatory basis of each violation and the period of time permitted for taking remedial action.</p> <p><i>SS Ref.: GS-R-1 5.19</i></p>	

No	Question	Module 6: Inspection and enforcement
	<p>Answer: Yes. Deviations, violations or other shortcomings are either addressed orally or with an informal letter. By this, the operator is requested for remedial action, with deadline if appropriate. The authority monitors the fulfilment of its requirements within the framework of supervision.</p>	Assessment: 3
145.	<p>For situations deemed to be serious and considered to pose an imminent radiological hazard to workers, patients, the public or the environment, does the Regulatory Body require the operator to cease activities and to take prompt actions necessary to restore an adequate level of safety?</p> <p>If there is evidence of a deterioration in the level of safety, or in the event of serious violations which in the judgement of the regulatory body pose an imminent radiological hazard to workers, public or environment, the regulatory body shall require the operator to curtail activities and to take any further action necessary to restore an adequate level of safety.</p> <p><i>SS Ref.: GS-R-1 5.20</i></p>	
	<p>Answer: Yes. In case of serious violations requiring measures to avert danger, a formal direction is issued. In urgent cases, an oral direction is issued and later confirmed and justified in written. The formal direction generally comprises</p> <ul style="list-style-type: none"> - a prior hearing of those concerned unless an immediate decision has to be taken due to imminent danger; - a statement of reasons clearly showing which situation or state is deemed to be unlawful or dangerous and by what unlawfulness or danger is caused. If the reasons are obvious, the authority may refrain from giving a statement of reasons; - in the case of ordering immediate enforcement, a statement of reasons why the interest of the person concerned in the suspensory effect of an appeal has to be overridden by the interest in immediate enforcement. <p>In case of offences, the regulatory authority may also impose an administrative fine. As a follow-up to this, it has to be checked whether the stipulation of the direction shall be included in the licence by a subsequently imposed obligation.</p>	Assessment: 3

No	Question	Module 6: Inspection and enforcement
146.	<p>In the event of continual, persistent or extremely serious non-compliance, or a significant release of radioactive material to the environment due to serious malfunctioning at or damage to a facility, does the Regulatory Body:</p> <ul style="list-style-type: none"> • direct the operator to curtail activities; • suspend or revoke the authorization; • direct the operator to eliminate unsafe conditions? <p>In the event of continual, persistent or extremely serious non-compliance, or a significant release of radioactive material to the environment due to serious malfunctioning at or damage to a facility, the regulatory body shall direct the operator to curtail activities and may suspend or revoke the authorization. The operator shall be directed to eliminate any unsafe conditions.</p> <p><i>SS Ref.: GS-R-1 5.21</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. If measures for averting danger are required, a formal direction is issued. It is the duty of the regulatory authority to enforce – if necessary, by using its sovereign power - safe and lawful plant states and conditions. In case of a suspected offence, the criminal law authorities are informed. It is to be checked whether the licensing requirements are still fulfilled and whether it is required to impose subsequent licence conditions or to revoke the licence.</p>
147.	<p>Are all enforcement decisions confirmed to the operator in writing?</p> <p>All enforcement decisions shall be confirmed to the operator in writing.</p> <p><i>SS Ref.: GS-R-1 5.22</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. In general, all measures directed by the regulatory authority are communicated to the operator and justified in written. If required, directions may also be orally or by telephone. In this case, however, they will be confirmed in written as soon as possible. If on-site inspections reveal shortcomings, the operator will be informed about it in most of the cases by an informal letter. In this letter, it is also stipulated, as far as required, until when the deficiencies identified are to be removed.</p> <p>One exception are minor findings with extremely low safety significance. These may also be addressed orally during inspection.</p>

No	Question	Module 6: Inspection and enforcement
148.	<p>Has the Regulatory Body defined the extent to which inspectors can take on-the-spot enforcement actions?</p> <p>The extent of the authority of the regulatory inspectors to take on the spot enforcement actions shall be determined by the regulatory body.</p> <p>SS Ref.: GS-R-1 5.23</p>	
	<p>Answer: Yes. §§ 17, 19 of the Atomic Energy Act (AtG) regulate the possibility or duty to issue orders and directions by the regulatory authority.</p> <p>Each oversight official is authorised to issue directions. The measures directed have to be necessary and appropriate in terms of proportionality.</p> <p>A direction may only be issued in case of an unlawful situation or if a situation constitutes a hazard to life, health or property or in case of suspected danger. In case of obvious unlawfulness or considerable danger, the regulatory authority is obliged to intervene. Apart from this, it is in the discretion of the authority whether a mere indication with the request to establish proper conditions is adequate. A direction must always be appropriate, necessary and unambiguous and comply with the principle of minimum intervention. Prior to issuance of a direction, the person concerned is generally to be heard, unless immediate execution of the direction is indispensable due to immediate danger. Oral directions or by telephone are to be issued, if possible, in the presence of witnesses and to be confirmed and justified in written without any undue delay. The legal section of the regulatory authority is involved in this procedure. Further details on the procedure are described in the procedural instructions, Section 8.2/1 of the oversight manual.</p>	Assessment: 3
149.	<p>Where on-the-spot enforcement authority is not granted to individual inspectors, are procedures in place to ensure that the transmission of information to the Regulatory Body is suited to the urgency of the situation, so that the necessary actions are taken in a timely manner?</p> <p>Where on the spot enforcement authority is not granted to individual inspectors, the transmission of information to the regulatory body shall be suited to the urgency of the situation so that necessary actions are taken in a timely manner; information shall be transmitted immediately if the inspectors judge that the health and safety of workers or the public are at risk, or the environment is endangered.</p> <p>SS Ref.: GS-R-1 5.24</p>	
	<p>Answer: The inspectors of the regulatory authority are fully authorised, taking into account the principle of proportionality, to issue directions on the spot for discontinuation of unlawful or dangerous situations.</p> <p>The experts consulted by the authority cannot take any enforcement measures. However, they are contractually obliged to immediately inform the regulatory authority about facts and findings that might require immediate action of the authority.</p>	Assessment: 3

3.2.8 Module 7: Development of regulations and guides

No	Question	Module 7: Development of regulations and guides
150.	<p>Does the Regulatory Body develop regulations and guides in accordance with the legal system of the State and take account of the nature and extent of the facilities and activities and practices to be regulated?</p> <p>The system of regulations and guides shall be chosen so as to suit the legal system of the State, and the nature and extent of the facilities and activities to be regulated. Where regulations are not issued by the regulatory body, the legislative and governmental mechanisms shall ensure that such regulations are developed and approved in accordance with appropriate time-scales.</p> <p><i>SS Ref.: GS-R-1 para 5.25</i></p>	
	<p>Answer: A system of regulations and guides exists in Germany.</p> <p>A detailed complete view of the regulatory situation in Germany is given in the CNS Report (§ 7 (2 i)).</p> <p>The latter shows that in some areas, the system of regulations and guides is no longer in line with the state of the art in science and technology.</p> <p>The body of German regulations and guides is currently in a process of being revised to update them and close existing gaps, e.g. in the areas of low-power and shutdown operation, safety management, etc. The following projects are currently underway:</p> <p>a) Fundamental safety requirements for nuclear power plants are currently being prepared by BMU and the Länder and will be defined in a statutory ordinance (see also Chapter 4.2 for links to modules 1-11).</p> <p>b) General assessment criteria for the assessment of the safety of nuclear power plants according to the state of the art in science and technology are being drafted on behalf of the BMU.</p>	<p>Assessment: 2</p>

No	Question	Module 7: Development of regulations and guides
151.	<p>If the Regulatory Body does not issue regulations and guides, do the legislative and governmental mechanisms ensure that they are developed and approved in a timely manner?</p> <p>The system of regulations and guides shall be chosen so as to suit the legal system of the State, and the nature and extent of the facilities and activities to be regulated. Where regulations are not issued by the regulatory body, the legislative and governmental mechanisms shall ensure that such regulations are developed and approved in accordance with appropriate time-scales.</p> <p><i>SS Ref.: GS-R-1 para 5.25</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Question does not apply because statutory ordinances are decreed and non-mandatory guidance instruments issued by the Regulatory Body.</p> <p>Regulations regarding acts of law, statutory ordinances and guides are prepared and enforced by the Regulatory Body according to clearly defined procedures.</p> <p>At the level of guides, there is the Nuclear Safety Standards Commission (KTA). The Nuclear Safety Standards Commission (KTA) is established at the BMU. The role of the KTA is to ensure that safety standards are defined in areas of nuclear technology in which a common view emerges on the basis of experience among the designers, manufacturers and operators of nuclear power plants and the experts and authorities and to promote the application of such safety standards. These safety standards are brought in line with the state of the art in science and technology by regular review and, if necessary, by revision of the approved texts of the safety standards every five years at the latest.</p> <p>Although the KTA Standards have no legally binding effect, they still have a far-reaching binding effect in practice due to their development process (consensual procedure) and degree of detail.</p>
152.	<p>Do regulations establish requirements with which all operators must comply?</p> <p>The main purpose of regulations is to establish requirements with which all operators must comply. Such regulations shall provide a framework for more detailed conditions and requirements to be incorporated into individual authorizations.</p> <p><i>SS Ref.: GS-R-1 para 5.26</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: In this context, we understand requirements as being acts of law and statutory ordinances.</p> <p>The requirements mentioned in the Atomic Energy Act and in the subordinate ordinances (see question 150) are generally binding and must also be observed by all operators.</p>

No	Question	Module 7: Development of regulations and guides
	<p>A Nuclear Installations Safety Ordinance (AtASiV) is to be added to the existing statutory ordinances and is to contain the fundamental requirements for nuclear power plants.</p>	
153.	<p>Do regulations provide a framework for more detailed conditions and requirements to be incorporated into individual authorizations?</p> <p>The main purpose of regulations is to establish requirements with which all operators must comply. Such regulations shall provide a framework for more detailed conditions and requirements to be incorporated into individual authorizations.</p> <p><i>SS Ref.: GS-R-1 para 5.26</i></p> <p>Answer: Nuclear law (§ 17 para.1 AtG) provides the possibility to include detailed requirements, e.g. from the non-mandatory nuclear guidance instruments, in the licences.</p> <p>The existing non-mandatory nuclear guidance instruments contain in their entirety corresponding principles / general instructions which may then be used in the concrete licensing and supervisory procedure to formulate supplementary stipulations or additional requirements imposed at a later stage.</p> <p><i>(Material: Compilation of Information Required for Review Purposes under Licensing and Supervisory Procedures for Nuclear Power Plants (ZPI))</i></p>	<p>Assessment: 3</p>
154.	<p>Are non-mandatory guides prepared, as necessary, on how to comply with regulations?</p> <p>Guides, of a non-mandatory nature, on how to comply with the regulations shall be prepared, as necessary. These guides may also provide information on data and methods to be used in assessing the adequacy of the design and on analyses and documentation to be submitted to the regulatory body by the operator.</p> <p><i>SS Ref.: GS-R-1 para 5.27</i></p> <p>Answer: Non-mandatory guides are prepared whenever they are required.</p> <p>On the one hand, official guides issued by the authorities are prepared. For example, an official guide was developed for the performance of PSAs with added detailed technical documents such as a volume containing data and another volume contained descriptions of the methods for executing PSAs. On the other hand, non-mandatory guidance instruments are currently being prepared with a view to filling existing gaps (see Question 150).</p>	<p>Assessment: 2</p>

No	Question	Module 7: Development of regulations and guides
155.	<p>In developing regulations and guides, does the Regulatory Body take into consideration comments from interested parties and feedback based on experience?</p> <p>In developing regulations and guides, the regulatory body shall take into consideration comments from interested parties and the feedback of experience. Due account shall also be taken of internationally recognized standards and recommendations, such as IAEA safety standards.</p> <p><i>SS Ref.: GS-R-1 para 5.28</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Comments and experiences of authorities, operators, manufacturers, experts and social groups are considered in the preparation of regulations.</p> <p>To fulfil this condition, the following processes are adhered to for the different levels of regulation:</p> <ul style="list-style-type: none"> - <u>Acts and ordinances</u>: the hearing of those affected ("hearing of organisations") and the hearing of authorities is mandatory in the procedure (GGO). - <u>BMU regulations</u>: written and oral hearings have been/are conducted. - <u>KTA Safety Standards</u>: The procedure (KTA Code of Procedure) ensures that the comments of all stakeholders (incl. interested third parties) are considered.
156.	<p>When developing regulations and guides, does the Regulatory Body take into account internationally recognized safety standards and recommendations such as those of the IAEA?</p> <p>In developing regulations and guides, the regulatory body shall take into consideration comments from interested parties and the feedback of experience. Due account shall also be taken of internationally recognized standards and recommendations, such as IAEA safety standards.</p> <p><i>SS Ref.: GS-R-1 para 5.28</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. An Installation Safety Ordinance and a body of non-mandatory guidance instruments for NPPs are currently being prepared. In these processes, the international safety standards and recommendations of the IAEA are taken into account. This is ensured as follows:</p> <ul style="list-style-type: none"> - <u>Acts and ordinances</u>: The Atomic Energy Act defines the state of the art in science and technology as precaution criterion. The state of the art in science and technology comprises international safety standards and recommendations. International rules are also explicitly considered in the process of preparing the above-mentioned ordinance.

No	Question	Module 7: Development of regulations and guides
	<ul style="list-style-type: none">- <u>BMU regulations</u>: The criteria applied here are those defined in the AtG. International safety standards and recommendations are examined in detail, with subsequent documentation in the form of synopses of the reference documents (Material: Synopses of the reference documents Rev. B, extract).- <u>KTA Safety Standards</u>: The KTA Code of Procedure (link) explicitly provides for the consideration of relevant documents of foreign origin. Corresponding considerations become then part of the documentation.	

3.2.9 Module 8: Management system – Answers BMU

No	Question Module 8: Management system – Answers BMU
157.	<p>Has the Regulatory Body established and implemented a Management System and is it clearly aligned with the goals of the Regulatory Body?</p> <p>A management system shall be established, implemented, assessed and continually improved. It shall be aligned with the goals of the organization and shall contribute to their achievement. The main aim of the management system shall be to achieve and enhance safety by:</p> <ul style="list-style-type: none"> – Bringing together in a coherent manner all the requirements for managing the organization; – Describing the planned and systematic actions necessary to provide adequate confidence that all these requirements are satisfied; – Ensuring that health, environmental, security, quality and economic requirements are not considered separately from safety requirements, to help preclude their possible negative impact on safety. <p><i>SS Ref.: GS-R-3 para 2.1</i></p>
	<p style="text-align: right;">Assessment: 3</p> <p>Answer:</p> <p>Yes. The regulatory body at the federal level has instruments for the management of affairs adjusted to the characteristics of ministerial administration.</p> <p>The work of the regulatory body, which at the federal level comprises the predominant part of Directorate-General RS of the Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) (for details see the German CNS report 2008 on Art. 8 (1)), is based on general regulations and requirements. These include, in particular,</p> <ul style="list-style-type: none"> - the general and special requirements of the Basic Law (GG) (binding effect of law and justice, Art. 20 (3) GG; for the execution by the <i>Länder</i> on federal commission (federal executive administration), Art. 85 GG), - the acts (in particular the Atomic Energy Act) and ordinances based on them, - the common rules of procedure of the federal ministries and the rules of procedure of the BMU. - the schedule of responsibilities of the BMU. <p>Within this framework, the work is determined by</p> <ul style="list-style-type: none"> - the politically defined objectives of the BMU, and - the quality management system introduced in the directorate-general which includes strategic objectives, the determination of annual targets, their planning and control as well as monitoring, - stipulations based on decisions on minister and state secretary bills and in the meetings of the directorate and division heads of Directorate-General RS.

No	Question	Module 8: Management system – Answers BMU
	<p>Within the central field of work of federal supervision of nuclear regulatory authorities of the <i>Länder</i>, the processes are dealt with, apart from a few exceptions, on the own responsibility of the Directorate-General RS of the BMU; the head of the department is regularly informed about these technical processes. In individual cases of high significance, the minister or the state secretary may directly perform regulatory functions (e.g. meetings within the framework of federal supervision at the ministerial level; during the legislative period since November 2005, such a meeting at the management level has not been held yet).</p> <p>The part of federal supervision dealt with on the own authority of the Directorate-General RS of the BMU is generally suitable for setting up a comprehensive “plan, do, check, act” management system that goes beyond quality management; for this purpose, a federal supervision manual shall be introduced; on this issue, preparatory work has already been performed.</p> <p>For the other areas within the responsibility of Directorate-General RS more subjected to general provisions, such as the common rules of procedure of the federal ministries (e.g. preparation of law-making, international co-operation) the establishment of a special “plan, do, check, act” management system, however, is not appropriate.</p> <p>In the assessments on the following questions it is therefore to be considered whether the answer refers to both or only one of the areas mentioned.</p>	
158.	<p>Does the Management System bring together in a coherent manner all the requirements for managing the Regulatory Body?</p> <p>A management system shall be established, implemented, assessed and continually improved. It shall be aligned with the goals of the organization and shall contribute to their achievement. The main aim of the management system shall be to achieve and enhance safety by:</p> <ul style="list-style-type: none"> – Bringing together in a coherent manner all the requirements for managing the organization; – Describing the planned and systematic actions necessary to provide adequate confidence that all these requirements are satisfied; – Ensuring that health, environmental, security, quality and economic requirements are not considered separately from safety requirements, to help preclude their possible negative impact on safety. <p><i>SS Ref.: GS-R-3 para 2.1</i></p>	
	<p>Answer:</p> <p>In terms of a strict interpretation of the question, federal supervision does not have a comprehensive, complete and coherent management system that describes all requirements</p> <p>For the ministerial tasks of the Directorate-General RS such a management system would not be appropriate anyway (see answer to question 157).</p> <p>The system for the management of affairs adjusted to the characteristics of ministerial administration, covers the main requirements for managing the regulatory body in a coherent manner.</p> <p>The regulatory body has the fundamentals mentioned in answer to question 157 and instruments based on it which ensure the fulfilment of the main functions of a management system.</p>	<p style="text-align: right;">Assessment: 2</p>

No	Question	Module 8: Management system – Answers BMU
159.	<p>Does the Management System describe the planned and systematic actions necessary to provide adequate confidence that all these requirements are satisfied?</p> <p>A management system shall be established, implemented, assessed and continually improved. It shall be aligned with the goals of the organization and shall contribute to their achievement. The main aim of the management system shall be to achieve and enhance safety by:</p> <ul style="list-style-type: none"> – Bringing together in a coherent manner all the requirements for managing the organization; – Describing the planned and systematic actions necessary to provide adequate confidence that all these requirements are satisfied; – Ensuring that health, environmental, security, quality and economic requirements are not considered separately from safety requirements, to help preclude their possible negative impact on safety. <p><i>SS Ref.: GS-R-3 para 2.1</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: The entirety of the rules concerning the structures and contents of work ensure that all necessary conditions are given to be able to reach the defined safety objectives.</p> <ul style="list-style-type: none"> • The global objectives of Directorate-General RS and the respective annual targets define the strategic objectives for the execution of duties. • The schedule of responsibilities of the BMU allocates the duties to the divisions. For the main objectives of the execution of duties, there are project plans. Besides, permanent tasks are being performed. • As far as other requirements are to be considered that may have a negative effect on safety, the respective competent bodies are to be involved according to the common rules of procedure of the federal ministries or the rules of procedure of the BMU, or involvement of the BMU/Directorate-General RS by those bodies is required. <p>Notes:</p> <ul style="list-style-type: none"> • However, the management system does not yet cover the interface “federal regulator” – “Länder regulator“ to a sufficient extent. • Moreover, restrictions result from the current staffing which is to be improved on the basis of a schedule 2009-2011.
160.	<p>Does the Management System ensure that safety is paramount, overriding all other demands?</p> <p>Safety shall be paramount within the management system, overriding all other demands.</p> <p><i>SS Ref.: GS-R-3 para 2.2</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The management system is fully oriented towards the most important purpose of the Atomic Energy Act (AtG), the protection of life, health and property</p>

No	Question	Module 8: Management system – Answers BMU
	against the hazards of nuclear energy and the detrimental effects of ionising radiation (§ 1 para 2 AtG). The binding effect of law on the administration and the implementation of this bindingness in the quality management clearly give overriding priority to safety.	
161.	<p>Does the Management System identify and integrate the requirements contained in:</p> <ul style="list-style-type: none"> • statutory and regulatory requirements of the Member State?; • requirements formally agreed with stakeholders?; • other relevant IAEA Safety Requirements publications?; • requirements from other relevant codes and standards?. <p>The management system shall identify and integrate with the requirements contained within this publication:</p> <ul style="list-style-type: none"> – The statutory and regulatory requirements of the Member State; – Any requirements formally agreed with interested parties (also known as ‘stakeholders’7); – All other relevant IAEA Safety Requirements publications, such as those on emergency preparedness and response [8] and safety assessment [9]; – Requirements from other relevant codes and standards adopted for use by the organization. <p><i>SS Ref.: GS-R-3 para 2.3</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The binding effect of law and justice, the further provisions and the safety objectives derived from it directly present the basis of the management system and refer to the requirements included in GS-R-3 para 2.3.</p> <p>The requirements according to GS-R-3 para 2.3 are available to the respectively competent staff. They are mainly documented within the framework of knowledge management (so-called Reactor Safety (RS)-Portal). In the strategic target objectives of the quality management, the requirements are partly referred to (e.g. No. 10 of the strategic objectives of Directorate RS I 2008 which refers to IAEA standards and guides regarding the development of a nuclear plant safety ordinance).</p>
162.	<p>Can the Regulatory Body demonstrate the effective fulfilment of its Management System requirements?</p> <p>The organization shall be able to demonstrate the effective fulfilment of its management system requirements.</p> <p><i>SS Ref.: GS-R-3 para 2.4</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. Traceability results from the documentation. The decision processes are fully documented and traceable. On the basis of the documentation, the fulfilment of the management system requirements can be demonstrated. As part of the executive, the BMU is obliged to render account to the</p>

No	Question	Module 8: Management system – Answers BMU
	<p>parliament, the administrative courts and the public, where appropriate. This may be done with regard to individual processes but also in general form. One example are the annual and quarterly reports of the BMU/BfS submitted to the German Federal Parliament on reportable events in German nuclear power plants. Moreover, the BMU gives its opinion, partly in comprehensive form, on specific areas of responsibility and questions by answering parliamentary questions. Besides, there is a general right of access to environmental information defined in the Environmental Information Act (UIG) according to which the authority may issue information, allow records to be examined or make information media available in any other way (§ 3 UIG).</p>	
163.	<p>Does the Management System promote & support a strong safety culture by:</p> <ul style="list-style-type: none"> • ensuring a common understanding of the key aspects of safety culture?; • providing the means to support individuals and teams to carry out their tasks safely and successfully?; • reinforcing a learning and questioning attitude at all organizational levels?; • providing the means to continually develop and improve its safety culture? <p>The management system shall be used to promote and support a strong safety culture by:</p> <ul style="list-style-type: none"> – Ensuring a common understanding of the key aspects of safety culture within the organization; – Providing the means by which the organization supports individuals and teams in carrying out their tasks safely and successfully, taking into account the interaction between individuals, technology and the organization; – Reinforcing a learning and questioning attitude at all levels of the organization; – Providing the means by which the organization continually seeks to develop and improve its safety culture. <p>SS Ref.: GS-R-3 para 2.5</p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: see question 160</p>
164.	<p>Is the application of the Management System requirements graded so as to deploy appropriate resources, on the basis of the consideration of:</p> <ul style="list-style-type: none"> • the significance and complexity of each product or activity; • the hazard and magnitude of the potential risk associated with the safety, health, environmental, security, quality and economics of each product and activity; • the possible consequences if a product fails or an activity is carried out incorrectly? <p>The application of management system requirements shall be graded so as to deploy appropriate resources, on the basis of the consideration of:</p> <ul style="list-style-type: none"> – The significance and complexity of each product or activity; – The hazards and the magnitude of the potential impact (risks) associated with the safety, health, environmental, security, quality and economic elements of each product or activity; 	

No	Question	Module 8: Management system – Answers BMU
	<p>– The possible consequences if a product fails or an activity is carried out incorrectly.</p> <p><i>SS Ref.: GS-R-3 para 2.6</i></p> <p>Answer: Yes, the global objectives (Link) of the BMU/the Directorate-General RS and the strategic annual planning based on them are in particular oriented to the risks of the plants and activities within the sphere of responsibility of the Directorate-General RS. The flexible communication and decision structures ensure adequate safety-oriented behaviour. The depth of review by the federal supervisor is particularly oriented to the safety significance and the generic significance of individual events. In this respect, an essential basis of activities of federal supervision are the information notices on all reportable events in German nuclear power plants prepared by GRS as technical expert organisation of the BMU. These information notices include an in-depth analysis of these events which are also submitted to the nuclear regulatory authorities of the <i>Länder</i>. (Material: BMU-Global Aims: I, II, III, IV, V)</p>	Assessment: 3
165.	<p>Is grading applied to the products and activities of each process undertaken by the Regulatory Body?</p> <p>Grading of the application of management system requirements shall be applied to the products and activities of each process.</p> <p><i>SS Ref.: GS-R-3 para 2.7</i></p> <p>Answer: see question 164</p>	Assessment: 3
166.	<p>Is the Management System clearly documented and does it include:</p> <ul style="list-style-type: none"> • the policy statements of the Regulatory Body; • a description of the Management System; • a description of the structure of the Regulatory Body; • a description of the functional responsibilities, accountabilities, levels of authority and interactions of those managing, performing and assessing work; • a description of the processes and supporting information that explain how work is to be prepared, reviewed, carried out, recorded, assessed and improved? <p>The documentation of the management system shall include the following:</p> <ul style="list-style-type: none"> – The policy statements of the organization; – A description of the management system; – A description of the structure of the organization; – A description of the functional responsibilities, accountabilities, levels of authority and interactions of those managing, performing and assessing 	

No	Question	Module 8: Management system – Answers BMU
	<p>work;</p> <ul style="list-style-type: none"> – A description of the processes and supporting information that explain how work is to be prepared, reviewed, carried out, recorded, assessed and improved. <p><i>SS Ref.: GS-R-3 para 2.8</i></p>	
	<p>Answer: Yes. There is a complexly structured management system documented in different documents (in particular in the rules of procedure of the BMU, in the schedule of responsibilities and in the QM manual) (see answers to questions 157 and 158 and the German CNS report 2008 on Art. 8 (1)). For federal supervision, there is no coherent description of the management system so far. For the ministerial duties of Directorate-General RS (see answer to question 157), a coherent description in one document is not required.</p>	Assessment: 2
167.	<p>Is the documented Management System understandable, legible, readily identifiable and available to the Regulatory Body staff?</p> <p>The documentation of the management system shall be developed to be understandable to those who use it. Documents shall be readable, readily identifiable and available at the point of use.</p> <p><i>SS Ref.: GS-R-3 para 2.9</i></p>	
	<p>Answer: See answer to question 166.</p> <p>The documents mentioned, in particular the rules of procedure of the BMU, the schedule of responsibilities and the QM manual are available online to all staff members.</p>	Assessment: 3
168.	<p>.Does the documentation for the Management System reflect:</p> <ul style="list-style-type: none"> • the characteristics of the Regulatory Body and its activities; • the complexities of processes and their interactions? <p>The documentation of the management system shall reflect:</p> <ul style="list-style-type: none"> – The characteristics of the organization and its activities; – The complexities of processes and their interactions. <p><i>SS Ref.: GS-R-3 para 2.10</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: Yes. The schedule of responsibilities of the BMU and the QM manual of Directorate-General RS consider the characteristics of the regulatory body in Germany. Due to the complexity of the decision processes (cf. presentation in the German CNS report 2008, Art. 8(1)), the management system of the federal supervisor is not included in a closed documentation. This applies – beyond the general co-operation in the <i>Länder</i> Committee for Nuclear Energy (LAA) and the interaction in the individual case – also with regard to the processes concerning the interface “federal regulator” – “<i>Länder</i> regulator”.</p>	Assessment: 2
169.	<p>Does management at all levels demonstrate its commitment to the establishment, implementation, assessment and continual improvement of the Management System?</p> <p>Management at all levels shall demonstrate its commitment to the establishment, implementation, assessment and continual improvement of the management system and shall allocate adequate resources to carry out these activities.</p> <p><i>SS Ref.: GS-R-3 para 3.1</i></p>	
	<p>Answer: Yes. All management levels are committed to implement and further develop the management system. This is done, in particular, by intensive communication on all main projects and core tasks of the regulatory body (BMU). The flexibility of the management is improved by the establishment of project groups. Regarding their projects, the project leaders are part of the management.</p>	Assessment: 3
170.	<p>Does the management allocate adequate resources to carry out its commitment to the establishment, implementation, assessment and continual improvement of the Management System?</p> <p>Management at all levels shall demonstrate its commitment to the establishment, implementation, assessment and continual improvement of the management system and shall allocate adequate resources to carry out these activities.</p> <p><i>SS Ref.: GS-R-3 para 3.1</i></p>	
	<p>Answer: The framework conditions for the fulfilment of the requirements are given. However, there are not sufficient resources available for continuous improvement of the management system.</p>	Assessment: 2

No	Question	Module 8: Management system – Answers BMU
171.	<p>Does senior management develop individual values, institutional values and behavioural expectations for the Regulatory Body to support the implementation of the Management System?</p> <p>Senior management shall develop individual values, institutional values and behavioural expectations for the organization to support the implementation of the management system and shall act as role models in the promulgation of these values and expectations.</p> <p><i>SS Ref.: GS-R-3 para 3.2</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes, see answer to question 169. The work of the senior management is also directed to the development of a structure of values (criticism, self-criticism, quality, effectiveness, transparency, collegueship, team work). This value structure is imparted by intensive communication within Directorate-General RS.</p>
172.	<p>Does senior management act as role models in the visible promulgation of the individual values, institutional values and behavioural expectations of the Regulatory Body?</p> <p>Senior management shall develop individual values, institutional values and behavioural expectations for the organization to support the implementation of the management system and shall act as role models in the promulgation of these values and expectations.</p> <p><i>SS Ref.: GS-R-3 para 3.2</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes, see answer to question 171. There is a role model function of the senior management within the framework of the individual capacity and the difficult boundary conditions.</p>
173.	<p>Does management at all levels of the Regulatory Body communicate to individuals the need to adopt the individual values, institutional values and behavioural expectations as well as to comply with the requirements of the Management System?</p> <p>Management at all levels shall communicate to individuals the need to adopt these individual values, institutional values and behavioural expectations as well as to comply with the requirements of the management system.</p> <p><i>SS Ref.: GS-R-3 para 3.3</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: For general answer, see question 171.</p> <p>Yes. This is particularly done by interviews with the staff within the framework of</p> <ul style="list-style-type: none"> - staff appraisal interviews - planning of further qualification - assessment interviews, - ad hoc interviews in problematic cases. 	Assessment: 3
174.	<p>Does management at all levels of the Regulatory Body foster the involvement of all individuals in the implementation and continual improvement of the Management System?</p> <p>Management at all levels shall foster the involvement of all individuals in the implementation and continual improvement of the management system.</p> <p><i>SS Ref.: GS-R-3 para 3.4</i></p>	Assessment: 2
175.	<p>Does senior management ensure that it is clear when, how and by whom decisions are to be made within the Management System?</p> <p>Senior management shall ensure that it is clear when, how and by whom decisions are to be made within the management system.</p> <p><i>SS Ref.: GS-R-3 para 3.5</i></p>	Assessment: 3
	<p>Answer: Yes. The (in parts detailed) specifications in the rules of procedure of the BMU, in the schedule of responsibilities and in the QM system ensure the fulfilment of the requirements.</p>	

No	Question	Module 8: Management system – Answers BMU
176.	<p>Are the expectations of stakeholders considered by senior management in the activities and interactions in the processes of the Management System?</p> <p>The expectations of interested parties shall be considered by senior management in the activities and interactions in the processes of the management system, with the aim of enhancing the satisfaction of interested parties while at the same time ensuring that safety is not compromised.</p> <p><i>SS Ref.: GS-R-3 para 3.6</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. There is an intensive communication process (e.g. within the framework of the Reactor Safety Commission (RSK), the Nuclear Safety Standards Commission (KTA) or of workshops) with interested parties (in particular plant operators, environmental organisations) also at the level of political leadership. The same applies to the communication with the authorised experts (e.g. regular monthly meetings of the head of Directorate-General RS with the GRS management). The expectations of the parliament and the public with regard to quick and comprehensive information both about current events and about general risk are taken into consideration.</p>
177.	<p>Does senior management aim to enhance stakeholder satisfaction while at the same time ensuring that safety is not compromised?</p> <p>The expectations of interested parties shall be considered by senior management in the activities and interactions in the processes of the management system, with the aim of enhancing the satisfaction of interested parties while at the same time ensuring that safety is not compromised.</p> <p><i>SS Ref.: GS-R-3 para 3.6</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. Within the framework of the preparation of law and rule making, the stakeholders will be involved by participation procedures which provide the opportunity to comment on the matter and, where appropriate, by hearings. There is no systematic strategic discourse with the stakeholders. Stakeholder satisfaction is one objective among several which, in any case, is subordinate to the objective of ensuring safety.</p>
178.	<p>Does senior management develop the policies for the Regulatory Body and are these policies appropriate to the activities and facilities of the Regulatory Body?</p> <p>Senior management shall develop the policies of the organization. The policies shall be appropriate to the activities and facilities of the organization.</p> <p><i>SS Ref.: GS-R-3 para 3.7</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: Yes. The senior management develops the policies of the regulatory body by defining global and overall as well as strategic objectives (cf. question 164).</p>	Assessment: 3
179.	<p>Does senior management establish goals, strategies, plans and objectives that are consistent with the policies of the Regulatory Body?</p> <p>Senior management shall establish goals, strategies, plans and objectives that are consistent with the policies of the organization.</p> <p><i>SS Ref.: GS-R-3 para 3.8</i></p>	
	<p>Answer: Yes, see question 178. But: restrictive boundary conditions hinder planning on</p> <ul style="list-style-type: none"> • personnel planning and development, • research (means partly included in the budget of the Federal Ministry of Economics and Technology (BMW)). 	Assessment: 2
180.	<p>Does senior management develop the goals, strategies, plans and objectives of the Regulatory Body in an integrated manner so that their collective impact on safety is understood and managed?</p> <p>Senior management shall develop the goals, strategies, plans and objectives of the organization in an integrated manner so that their collective impact on safety is understood and managed.</p> <p><i>SS Ref.: GS-R-3 para 3.9</i></p>	
	<p>Answer: See answer to question 179.</p>	Assessment: 2
181.	<p>Does senior management ensure that measurable objectives for implementing the goals, strategies and plans are established through appropriate processes at various levels in the Regulatory Body?</p> <p>Senior management shall ensure that measurable objectives for implementing the goals, strategies and plans are established through appropriate processes at various levels in the organization.</p> <p><i>SS Ref.: GS-R-3 para 3.10</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: See answer to question 179.</p>	Assessment: 2
182.	<p>Does senior management ensure that the implementation of the plans is regularly reviewed against the Regulatory Body's objectives and actions taken to address deviations from the plans where necessary?</p> <p>Senior management shall ensure that the implementation of the plans is regularly reviewed against these objectives and that actions are taken to address deviations from the plans where necessary.</p> <p><i>SS Ref.: GS-R-3 para 3.11</i></p>	Assessment: 3
183.	<p>Is senior management of the Regulatory Body clearly responsible for ensuring that the Management System is established, implemented, assessed and continually improved?</p> <p>Senior management shall be ultimately responsible for the management system and shall ensure that it is established, implemented, assessed and continually improved.</p> <p><i>SS Ref.: GS-R-3 para 3.12</i></p>	Assessment: 3
	<p>Answer: Yes. The two levels of the senior management (head of Directorate-General RS, directorate heads) are responsible for the establishment and continuous improvement of the management tools.</p>	

No	Question	Module 8: Management system – Answers BMU
184.	<p>Is there an individual reporting directly to senior management who has specific responsibility and authority for:</p> <ul style="list-style-type: none"> • coordinating the development and implementation of the Management System, and for its assessment and continual improvement; • reporting on the performance of the Management System, including its influence on safety and safety culture, and any need for improvement; • resolving any potential conflicts between requirements and within the processes of the Management System? <p>An individual reporting directly to senior management shall have specific responsibility and authority for:</p> <ul style="list-style-type: none"> – Coordinating the development and implementation of the management system, and its assessment and continual improvement; – Reporting on the performance of the management system, including its influence on safety and safety culture, and any need for improvement; – Resolving any potential conflicts between requirements and within the processes of the management system. <p><i>SS Ref.: GS-R-3 para 3.13</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The responsibilities of the division heads ensure that in the cases where organisation is no longer working effectively, the senior management will be informed. The necessary further development and adjustment of operational organisation is performed by the senior management. The senior management is supported by a QM officer.</p>
185.	<p>Does the Regulatory Body retain overall responsibility for the Management System when an external organization is involved in the work of developing all or part of the Management System?</p> <p>The organization shall retain overall responsibility for the management system when an external organization is involved in the work of developing all or part of the management system.</p> <p><i>SS Ref.: GS-R-3 para 3.14</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The QM system of the Directorate-General RS of the BMU was developed with involvement of an external consultant. The responsibilities for implementation of and compliance with the QM system rest solely with the BMU/Directorate-General RS.</p>

No	Question	Module 8: Management system – Answers BMU
186.	Does senior management determine the amount of resources necessary and provide the resources to carry out the activities of the Regulatory Body and to establish, implement, assess and continually improve the Management System?	
	<p>Senior management shall determine the amount of resources necessary and shall provide the resources⁹ to carry out the activities of the organization and to establish, implement, assess and continually improve the management system.</p> <p><i>SS Ref.: GS-R-3 para 4.1</i></p>	
	<p>Answer: The senior management defines the scope of the necessary resources; the provision of the resources is beyond the responsibility of the senior management. The number of staff requested by the political leadership of the BMU from the budgetary legislator consider the assessments of the senior management on the necessary human resources. The influence of the senior management reaches as far as possible in view of the budgetary powers of the parliament and the political responsibility of the minister. Reimbursements – at least partly – for the activities of the regulatory body (BMU/Directorate-General RS) within the framework of implementation of federal legislation by the <i>Länder</i> for the Federation has not been possible so far.</p>	Assessment: 2
187.	<p>Is the information and knowledge of the Regulatory Body managed as a resource?</p> <p>The information and knowledge of the organization shall be managed as a resource.</p> <p><i>SS Ref.: GS-R-3 para 4.2</i></p>	
	<p>Answer: Due to the personnel structure which is not subject to the disposal of the senior management, knowledge transfer from older to younger staff can only take place to a limited extent (temporary positions, too low assessment of vacancies advertised, no personnel recruitment “overlapping” in time). Another tool of knowledge transfer is the RS-Portal.</p>	Assessment: 2
188.	<p>Does senior management determine the competence requirements for individuals at all levels?</p> <p>Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.</p> <p><i>SS Ref.: GS-R-3 para 4.3</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: The senior management determines the competence requirements, in particular for new recruitments. For existing staff, the competence requirements are not automatically updated. Due to the small number of staff, competence specialisation is not possible.</p>	Assessment: 2
189.	<p>Does senior management provide training or take other actions to achieve the required level of competence?</p> <p>Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.</p> <p><i>SS Ref.: GS-R-3 para 4.3</i></p>	Assessment: 2
190.	<p>Does senior management conduct an evaluation of the effectiveness of any actions taken?</p> <p>Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.</p> <p><i>SS Ref.: GS-R-3 para 4.3</i></p>	Assessment: 3
	<p>Answer: Yes. There is no systematic evaluation according to benchmarks, but intensive communication ensures that the effectiveness of all major activities is reviewed and assessed. An important instrument of personnel management is the appraisal interview of the division heads (and the directorate-general heads with the directorate heads) held annually by the senior management. Subject matter is, among others, the performance quality and the individual need for training and further qualification.</p>	

No	Question	Module 8: Management system – Answers BMU
191.	<p>Does senior management ensure that suitable proficiency is achieved and maintained?</p> <p>Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.</p> <p><i>SS Ref.: GS-R-3 para 4.3</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: see question 190</p>
192.	<p>Does senior management ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities?</p> <p>Senior management shall ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities. Individuals shall have received appropriate education and training, and shall have acquired suitable skills, knowledge and experience to ensure their competence. Training shall ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of the organization's objectives.</p> <p><i>SS Ref.: GS-R-3 para 4.4</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: see question 190</p>
193.	<p>Do individuals receive appropriate education and training and how do they acquire suitable skills, knowledge and experience to ensure their competence?</p> <p>Senior management shall ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities. Individuals shall have received appropriate education and training, and shall have acquired suitable skills, knowledge and experience to ensure their competence. Training shall ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of the organization's objectives.</p> <p><i>SS Ref.: GS-R-3 para 4.4</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: All staff members are adequately qualified for their tasks and receive education and training (knowledge, skills, exchange of experiences) to ensure their competence. Advance technical training is particularly realised by seminars and a mentoring programme of the GRS. Due to the high workload, there are deficits regarding the opportunity to take advantage of the training offers to a sufficient extent.</p>	Assessment: 2
194.	<p>Does training ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of the Regulatory Body's objectives?</p> <p>Senior management shall ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities. Individuals shall have received appropriate education and training, and shall have acquired suitable skills, knowledge and experience to ensure their competence. Training shall ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of the organization's objectives.</p> <p><i>SS Ref.: GS-R-3 para 4.4</i></p>	Assessment: 3
195.	<p>Does senior management determine, provide, maintain and re-evaluate the infrastructure and the working environment necessary for work to be carried out in a safe manner and for requirements to be met?</p> <p>Senior management shall determine, provide, maintain and re-evaluate the infrastructure and the working environment necessary for work to be carried out in a safe manner and for requirements to be met.</p> <p><i>SS Ref.: GS-R-3 para 4.5</i></p>	Assessment: 3
	<p>Answer: Yes. Infrastructure and working environment are continuously reviewed and adjusted. Compared with other units at the BMU, the equipment of Directorate-General RS is better. One example for great progress regarding infrastructure and working environment is the restructuring of the emergency centre of Directorate-General RS in 2006.</p>	

No	Question	Module 8: Management system – Answers BMU
196.	<p>Are the processes of the Management System that are needed to achieve the goals, provide the means to meet all objectives and deliver the plans of the Regulatory Body identified?</p> <p>The processes of the management system that are needed to achieve the goals, provide the means to meet all requirements and deliver the products of the organization shall be identified, and their development shall be planned, implemented, assessed and continually improved.</p> <p><i>SS Ref.: GS-R-3 para 5.1</i></p>	
	<p>Answer: The management system principally describes the processes required to reach all objectives of the regulatory body and to implement the respective planning.</p> <p>The quality management introduced in 2005 is an internal process management for core processes to be dealt with regularly for the optimisation of procedures. It also provides for the development of content-related requirements (targets).</p>	Assessment: 2
197.	<p>Are the processes developed, planned, implemented, assessed and continually improved?</p> <p>The processes of the management system that are needed to achieve the goals, provide the means to meet all requirements and deliver the products of the organization shall be identified, and their development shall be planned, implemented, assessed and continually improved.</p> <p><i>SS Ref.: GS-R-3 para 5.1</i></p>	
	<p>Answer: With the support of a consulting company, the relevant processes in the 16 operational units of Directorate-General RS and the secretariats of the directorate heads und the head of Directorate-General RS were, in a first step, identified by means of an as-is analysis and the process sequences described. In a next step, the processes were summarised in process groups and optimised in collaboration with all those involved in the individual processes. Since August 2005, the descriptions of the process sequences have been available to all personnel of Directorate-General RS in the form of an electronic manual. The implementation still suffers from acceptance problems. An analysis of the acceptance problems has been prepared. A first systematic review of the system by means of some selected process descriptions was completed at the end of 2007 with the preparation of a first annual report. Deficits identified are also eliminated on an ongoing basis.</p>	Assessment: 3

No	Question	Module 8: Management system – Answers BMU
198.	<p>Are sequence and interactions of the processes determined?</p> <p>The sequence and interactions of the processes shall be determined.</p> <p><i>SS Ref.: GS-R-3 para 5.2</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Sequences and interactions of the processes are determined. See questions 196 and 197</p>
199.	<p>Do methods necessary to ensure the effectiveness of both the implementation and the control of the processes determined and implemented?</p> <p>The methods necessary to ensure the effectiveness of both the implementation and the control of the processes shall be determined and implemented.</p> <p><i>SS Ref.: GS-R-3 para 5.3</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: Firstly, the staff of Directorate-General RS concerned and the respective superiors are responsible for quality management performance. The performance is accompanied by a QM officer. The application of the QM processes is partly hindered by the excessive workload for the staff.</p>
200.	<p>Does the development of each process ensure that the following are achieved:</p> <ul style="list-style-type: none"> • process requirements, such as applicable regulatory, statutory, legal, safety, health, environmental, security, quality and economic related requirements, are specified and addressed; • hazards and risks are identified, together with any necessary mitigatory actions; • interactions with interfacing processes are identified; • process inputs are identified; • the process flow is described; • process outputs (products) are identified; • process measurement criteria are established? <p>The development of each process shall ensure that the following are achieved:</p> <ul style="list-style-type: none"> – Process requirements, such as applicable regulatory, statutory, legal, safety, health, environmental, security, quality and economic requirements, are specified and addressed. 	

No	Question	Module 8: Management system – Answers BMU
	<ul style="list-style-type: none"> – Hazards and risks are identified, together with any necessary mitigatory actions. – Interactions with interfacing processes are identified. – Process inputs are identified. – The process flow is described. – Process outputs (products) are identified. – Process measurement criteria are established. <p><i>SS Ref.: GS-R-3 para 5.4</i></p>	Assessment: 3
201.	<p>Are activities and interfaces between different individuals or groups involved in a single process planned, controlled and managed in a manner that ensures effective communication and the clear assignment of responsibilities?</p> <p>The activities of and interfaces between different individuals or groups involved in a single process shall be planned, controlled and managed in a manner that ensures effective communication and the clear assignment of responsibilities.</p> <p><i>SS Ref.: GS-R-3 para 5.5</i></p>	Assessment: 3
		<p>Answer: Yes. An effective communication between the different individuals or groups involved in a process and clear assignment of responsibilities is ensured.</p> <p>The process descriptions explicitly state the respective lead unit and other responsible units including directorate and directorate-general head level. In connection with the appointment of responsibilities, special forms of participation (approval, taking note of) are also defined. Moreover, general rules of co-operation are stipulated in the rules of procedure of the BMU and the common rules of procedure of the federal ministries.</p>

No	Question	Module 8: Management system – Answers BMU
202.	<p>Does a designated individual for each process have the authority and responsibility for:</p> <ul style="list-style-type: none"> • developing and documenting the process and maintaining the necessary supporting documentation; • ensuring that there is effective interaction between interfacing processes; • ensuring that process documentation is consistent with any existing documents; • ensuring that the records required to demonstrate that the process results have been achieved are specified in the process documentation; • monitoring and reporting on the performance of the process; • promoting improvement in the process; • ensuring that the process, including any subsequent changes to it, is aligned with the goals, strategies, plans and objectives of the Regulatory Body? <p>For each process a designated individual shall be given the authority and responsibility for:</p> <ul style="list-style-type: none"> – Developing and documenting the process and maintaining the necessary supporting documentation; – Ensuring that there is effective interaction between interfacing processes; – Ensuring that process documentation is consistent with any existing documents; – Ensuring that the records required to demonstrate that the process results have been achieved are specified in the process documentation; – Monitoring and reporting on the performance of the process; – Promoting improvement in the process; – Ensuring that the process, including any subsequent changes to it, is aligned with the goals, strategies, plans and objectives of the organization. <p><i>SS Ref.: GS-R-3 para 5.6</i></p>	
	<p>Answer:</p> <p>Yes. There is a designated individual for each process who is responsible for the performance of the process and its further development and improvement in accordance with the objectives of the regulatory body.</p> <p>Staff involved in a process bear the responsibility for the quality of their own work and thus contribute to the quality of the processes and work results. According to current practice, the technically responsible person is also responsible for the respective process. Further developments and improvements are performed where appropriate (e.g. in case of concrete questions); however, a regular review of the process descriptions does not take place. Responsible persons for cross-divisional process descriptions are the directorate heads.</p> <p>As far as need for changes (not merely editorial ones) is identified, the QM officer, in consultation with the responsible work unit, submits proposals for changes to the so-called steering committee (directorate-general heads, directorate heads, QM officer). After approval by the steering committee, the process description or work instruction is revised by the QM officer accordingly. The individual work units only have read-only access to the electronic manual and thus cannot make changes. All versions of the process descriptions and work instructions are consecutively numbered. The electronic manual includes the most recent versions, the previous versions are archived electronically.</p> <p>In addition, some selected processes, predefined in a so-called catalogue of measures, are reviewed on an annual basis (see answer to question 205).</p>	<p style="text-align: right;">Assessment: 3</p>

No	Question	Module 8: Management system – Answers BMU
203.	<p>Are the acceptance criteria and responsibilities identified for each process and activities for inspection, testing, verification and validation?</p> <p>For each process, any activities for inspection, testing, verification and validation, their acceptance criteria and the responsibilities for carrying out these activities shall be specified. For each process, it shall be specified if and when these activities are to be performed by designated individuals or groups other than those who originally performed the work.</p> <p><i>SS Ref.: GS-R-3 para 5.7</i></p>	<p style="text-align: right;">Assessment: -</p> <p>Answer: The question concerns the responsibility of the <i>Länder</i>. For process management, see answer to question 201.</p>
204.	<p>Is it specified for each process if and when the activities for inspection, testing, verification and validation are to be performed by designated individuals and groups other than those who originally performed the work?</p> <p>For each process, any activities for inspection, testing, verification and validation, their acceptance criteria and the responsibilities for carrying out these activities shall be specified. For each process, it shall be specified if and when these activities are to be performed by designated individuals or groups other than those who originally performed the work.</p> <p><i>SS Ref.: GS-R-3 para 5.7</i></p>	<p style="text-align: right;">Assessment: -</p> <p>Answer: The question concerns the responsibility of the <i>Länder</i>. For the process management of Directorate-General RS it is not relevant.</p>
205.	<p>Is each process evaluated to ensure that it remains effective?</p> <p>Each process shall be evaluated to ensure that it remains effective.</p> <p><i>SS Ref.: GS-R-3 para 5.8</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: Yes. The process descriptions are evaluated and updated.</p> <p>Irrespective of the fact that first and foremost the respective work units and management levels are responsible for the evaluation of the respective processes, it is the task of the QM officer, to conduct an evaluation by planning of measures, performance of quality talks and preparation of an annual</p>

No	Question	Module 8: Management system – Answers BMU
	<p>report. This, however, can only be realised for a selection of processes (a maximum of six per year) that have to be prioritised according to significance, complexity and error proneness. Processes of minor significance are not subjected to this systematic review. They rather remain subject to the evaluation by the respective work units and management levels. (Also see answer to question 202). The evaluation still suffers from the partly insufficient fulfilment of this task by the work units and management levels responsible for the respective processes.</p>	
206.	<p>Is the work performed in each process carried out under controlled conditions, by using approved current instructions that are periodically reviewed to ensure their adequacy and effectiveness? Are results compared with expected values?</p> <p>The work performed in each process shall be carried out under controlled conditions, by using approved current procedures, instructions, drawings or other appropriate means that are periodically reviewed to ensure their adequacy and effectiveness. Results shall be compared with expected values.</p> <p><i>SS Ref.: GS-R-3 para 5.9</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: The processes are only in parts performed on the basis of the QM system.</p> <p>The quality manager (Working Group RS I 1) makes the applicable documents of the QM system (summarised in the QM manual) available in the RS-Portal. The documents are updated and revised by the quality manager where appropriate according to the specifications of the QM system (Process 2.5.1. of the QM manual, "Qualitätsmanagement") and put into force after approval by the directorate-general head. This ensures that all staff members work with the respectively applicable documents of the QM system.</p>
207.	<p>Is the control of processes contracted to external organizations identified in the Management System? Is the Regulatory Body retaining the overall responsibility when contracting any process?</p> <p>The control of processes contracted to external organizations shall be identified within the management system. The organization shall retain overall responsibility when contracting any processes.</p> <p><i>SS Ref.: GS-R-3 para 5.10</i></p>	<p style="text-align: right;">Assessment: -</p> <p>Answer: No assessment.</p> <p>Reason: The performance of a formal audit by an external organisation is not intended.</p>

No	Question	Module 8: Management system – Answers BMU
208.	<p>Is there a process to control documents?</p> <ul style="list-style-type: none"> • Are documents controlled? • Are individuals assigned specifically to the preparation, review, revising and approval of documents? • Are these individuals competent to carry out this work? • Do these individuals have access to appropriate information for decision making? • Are the document users aware and use the appropriate and correct documents? <p>Documents shall be controlled. All individuals involved in preparing, revising, reviewing or approving documents shall be specifically assigned this work, shall be competent to carry it out and shall be given access to appropriate information on which to base their input or decisions. It shall be ensured that document users are aware of and use appropriate and correct documents.</p> <p><i>SS Ref.: GS-R-3 para 5.12</i></p>	Assessment: 3
<p>Answer: Yes, see second part of answer to question 206.</p>		
209.	<p>Are changes to documents reviewed and recorded and are they subject to the same level of approval?</p> <p>Changes to documents shall be reviewed and recorded and shall be subject to the same level of approval as the documents themselves.</p> <p><i>SS Ref.: GS-R-3 para 5.13</i></p>	Assessment: 3
<p>Answer: Yes, see second part of answer to question 206.</p>		
210.	<p>Are the specifications and requirements for Regulatory Body's products (review and assessment reports, inspection and audit reports, regulatory documents, licences, certificates of approval and authorizations etc) defined in accordance with established standards? Are the requirements incorporated?</p> <p>Specifications and requirements for products, including any subsequent changes, shall be in accordance with established standards and shall incorporate applicable requirements. Products that interface or interact with each other shall be identified and controlled.</p> <p><i>SS Ref.: GS-R-3 para 5.14</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: Regarding the “products” of the BMU, standardised requirements and regulations are to be applied.</p> <p>The requirements on the products of the BMU primarily result from the common rules of procedure of the federal ministries (for draft acts and ordinances, §§ 40 to 68 of the common rules of procedure of the federal ministries, and for administrative regulations §§ 69 to 71 of the common rules of procedure of the federal ministries) and from the rules of procedure of the BMU which regulate, in particular, the areas of BMU-internal co-operation/processing (Chapter 4 of the rules of procedure of the BMU), correspondence/document management (Chapter 5 of the rules of procedure of the BMU), information and publications /correspondence with other bodies outside the BMU (Chapter 6 of the rules of procedure of the BMU) and cabinet and parliamentary affairs/law-making procedures (Chapter 9 of the rules of procedure of the BMU).</p> <p>In particular the regulations of the Chapters 4 to 6 of the rules of procedure of the BMU are also applicable to the activities of the federal supervisor in dealing with the nuclear regulatory authorities of the <i>Länder</i>. Further specific requirements on the products do not exist in this area (but, however, regarding the processes, cf. QM manual). In general, however, documents have to be presented, prior to sending them outside of the BMU, to the division heads or, in cases of high importance, to directorate head, the directorate-general head or, where appropriate, in the exceptional case to the head of the ministry for approval (quality assurance by the so-called “four-eyes principle”).</p> <p>Regarding the work performed by authorised experts on behalf of the BMU, the principles to be observed by experts commissioned by the federal supervisor for nuclear power plants.</p>	<p>Assessment: 2</p>
211.	<p>Are the products that interface or interact with each other identified and controlled?</p> <p>Specifications and requirements for products, including any subsequent changes, shall be in accordance with established standards and shall incorporate applicable requirements. Products that interface or interact with each other shall be identified and controlled.</p> <p><i>SS Ref.: GS-R-3 para 5.14</i></p>	<p>Assessment: 2</p>
	<p>Answer: see question 210</p>	

No	Question	Module 8: Management system – Answers BMU
212.	<p>Are the activities for inspection, testing, verification and validation completed before the acceptance, implementation or operational use of products?</p> <p>Activities for inspection, testing, verification and validation shall be completed before the acceptance, implementation or operational use of products. The tools and equipment used for these activities shall be of the proper range, type, accuracy and precision.</p> <p><i>SS Ref.: GS-R-3 para 5.15</i></p>	
	<p>Answer: see question 210</p>	Assessment: 2
213.	<p>Are the tools and equipment used for inspection, testing, verification and validation of the proper range, type, accuracy and precision?</p> <p>Activities for inspection, testing, verification and validation shall be completed before the acceptance, implementation or operational use of products. The tools and equipment used for these activities shall be of the proper range, type, accuracy and precision.</p> <p><i>SS Ref.: GS-R-3 para 5.15</i></p>	
	<p>Answer: see question 210</p>	Assessment: 2
214.	<p>Does the Regulatory Body confirm that products meet the specified requirements?</p> <p>The organization shall confirm that products meet the specified requirements and shall ensure that products perform satisfactorily in service.</p> <p><i>SS Ref.: GS-R-3 para 5.16</i></p>	
	<p>Answer: see question 210</p>	Assessment: 2

No	Question	Module 8: Management system – Answers BMU
215.	<p>Does the Regulatory Body ensure that products perform satisfactorily in service?</p> <p>The organization shall confirm that products meet the specified requirements and shall ensure that products perform satisfactorily in service.</p> <p><i>SS Ref.: GS-R-3 para 5.16</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see question 210</p>
216.	<p>Are the Regulatory Body' products provided in such a form that it can be verified that they satisfy the requirements?</p> <p>Products shall be provided in such a form that it can be verified that they satisfy the requirements.</p> <p><i>SS Ref.: GS-R-3 para 5.17</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see question 210</p>
217.	<p>Are controls used to ensure that products do not bypass the required verification?</p> <p>Controls shall be used to ensure that products do not bypass the required verification activities.</p> <p><i>SS Ref.: GS-R-3 para 5.18</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see question 210</p>

No	Question	Module 8: Management system – Answers BMU
218.	<p>Are the products identified to ensure their proper use? Where traceability is a requirement does the Regulatory Body control and record the unique identification of the product?</p> <p>Products shall be identified to ensure their proper use. Where traceability is a requirement, the organization shall control and record the unique identification of the product.</p> <p><i>SS Ref.: GS-R-3 para 5.19</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see question 210</p>
219.	<p>Are the products handled, transported, stored, maintained and operated as specified, to prevent their damage, loss, deterioration or inadvertent use?</p> <p>Products shall be handled, transported, stored, maintained and operated as specified, to prevent their damage, loss, deterioration or inadvertent use.</p> <p><i>SS Ref.: GS-R-3 para 5.20</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see question 210</p>
220.	<p>Are records specified in the process documentation and are they controlled? Are they readable, complete, identifiable and easily retrievable?</p> <p>Records shall be specified in the process documentation and shall be controlled. All records shall be readable, complete, identifiable and easily retrievable.</p> <p><i>SS Ref.: GS-R-3 para 5.21</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Processes are traceable at any time due to a comprehensive documentation and within the statutory and BMU-internal record retention periods. The documentation of all processes is ensured by the respectively responsible staff and by filing departments. In particular, the provisions on records administration according to Section 5.3 of the rules of procedure of the BMU are to be applied.</p>

No	Question	Module 8: Management system – Answers BMU
221.	<p>Are retention times of records established to be consistent with statutory requirements and knowledge management obligations of the Regulatory Body?</p> <p>Retention times of records and associated test materials and specimens shall be established to be consistent with the statutory requirements and knowledge management obligations of the organization. The media used for records shall be such as to ensure that the records are readable for the duration of the retention times specified for each record.</p> <p><i>SS Ref.: GS-R-3 para 5.22</i></p>	
	<p>Answer: see question 220</p>	Assessment: 3
222.	<p>Is the media used for records suitable to ensure that the records are readable for the duration of the retention times specified for each record?</p> <p>Retention times of records and associated test materials and specimens shall be established to be consistent with the statutory requirements and knowledge management obligations of the organization. The media used for records shall be such as to ensure that the records are readable for the duration of the retention times specified for each record.</p> <p><i>SS Ref.: GS-R-3 para 5.22</i></p>	
	<p>Answer: see question 220</p>	Assessment: 3
223.	<p>Are suppliers selected on the basis of specified criteria and is their performance evaluated?</p> <p>Suppliers of products shall be selected on the basis of specified criteria and their performance shall be evaluated.</p> <p><i>SS Ref.: GS-R-3 para 5.23</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: Directorate-General RS does not procure its resources on its own. It is rather involved in the general procurement of the ministry. The awarding of contracts to experts is principally subject to public procurement law. Procurement and awarding of contracts are subject to strict, monitored selection criteria.</p>	Assessment: 3
224.	<p>Are purchasing requirements developed and specified in procurement documents? Is evidence that products meet the requirements available to the Regulatory Body before the product is used?</p> <p>Purchasing requirements shall be developed and specified in procurement documents. Evidence that products meet these requirements shall be available to the organization before the product is used.</p> <p><i>SS Ref.: GS-R-3 para 5.24</i></p>	Assessment: 3
	<p>Answer: see question 223</p>	
225.	<p>Are the requirements for reporting and resolution of non-conformances specified in the procurement documents?</p> <p>Requirements for the reporting and resolution of non-conformances shall be specified in procurement documents.</p> <p><i>SS Ref.: GS-R-3 para 5.25</i></p>	Assessment: 3
	<p>Answer: see question 223</p>	
226.	<p>Is information relevant to safety, health, environmental, security, quality and economic related goals communicated to individuals in the Regulatory Body and, where necessary to other stakeholders?</p> <p>Information relevant to safety, health, environmental, security, quality and economic goals shall be communicated to individuals in the organization and, where necessary, to other interested parties.</p> <p><i>SS Ref.: GS-R-3 para 5.26</i></p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: Yes. The results of the weekly meetings of the directorate heads are recorded in minutes and made available to all staff. The results of the weekly meetings of the directorate-general heads with the head of the department are communicated the next morning at a meeting of the head of the directorate-general with the directorate heads, division heads, desk officers and assistant desk officers. Documents drawn up for the minister/state secretaries are generally published on the RS Portal after return; this partly also applies to other information to be communicated across the divisions and directorates. Written information to be communicated within the BMU in particular by: press division/public relations, Bundestag (<i>German Federal Parliament</i>) printed papers, Internet, RS-Portal. Oral information: intensive communication within the Directorate-General RS. The parliament is informed within the framework of committee meetings and by answers to parliamentary questions. The head of department is informed at the weekly directorate-general head meetings. The public is informed by press releases, answers to questions submitted and by general PR information. The <i>Länder</i> are informed regularly at the meetings of the <i>Länder</i> Committee for Nuclear Energy (LAA) and its technical committees.</p>	<p>Assessment: 3</p>
227.	<p>Is internal communication concerning the implementation and effectiveness of the Management System in place between the various levels and functions of the Regulatory Body?</p> <p>Internal communication concerning the implementation and effectiveness of the management system shall take place between the various levels and functions of the organization.</p> <p>SS Ref.: GS-R-3 para 5.27</p>	<p>Assessment: 2</p>
228.	<p>Are organizational changes evaluated and classified according to their importance to safety? Is each change justified?</p> <p>Organizational changes shall be evaluated and classified according to their importance to safety and each change shall be justified.</p> <p>SS Ref.: GS-R-3 para 5.28</p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: Yes. Changes of the schedules of responsibilities are performed on the basis of written statements of reasons. They are discussed in detail at the level of the and with the responsible staff.</p>	Assessment: 3
229.	<p>Is the implementation of organizational changes planned, controlled, communicated, monitored, tracked and recorded to ensure that safety is not compromised?</p> <p>The implementation of such changes shall be planned, controlled, communicated, monitored, tracked and recorded to ensure that safety is not compromised.</p> <p><i>SS Ref.: GS-R-3 para 5.29</i></p>	
	<p>Answer: Yes, see questions 157 and 228.</p>	Assessment: 3
230.	<p>Does the Regulatory Body monitor and measure the effectiveness of the Management System to confirm the ability of the processes to achieve the intended results and to identify opportunities for improvement?</p> <p>The effectiveness of the management system shall be monitored and measured to confirm the ability of the processes to achieve the intended results and to identify opportunities for improvement.</p> <p><i>SS Ref.: GS-R-3 para 6.1</i></p>	
	<p>Answer: The effectiveness of the overall management system in the broader sense is permanently monitored by those responsible, i.e., in particular the senior management. In case of indications of ineffectiveness, opportunities for improvement are used as soon as possible. The effectiveness of the overall management system is not defined by benchmarks.</p> <p>In individual cases, necessary adjustments are only performed with delays or, in practice, incompletely.</p>	Assessment: 3
231.	<p>Does senior management and management at all other levels in the Regulatory Body carry out self-assessment to evaluate the performance of work and the improvement of the safety culture?</p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Senior management and management at all other levels in the organization shall carry out self-assessment to evaluate the performance of work and the improvement of the safety culture.</p> <p><i>SS Ref.: GS-R-3 para 6.2</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. This requirement is an integral part of the work of the regulatory body at all levels. In the past, the process did not take place in a systematic form. In the past, elements were: staff appraisal interviews, self-assessment by the senior management, management seminars. Regarding the IRRS Mission D 2008, a comprehensive self-assessment was performed 2006/2007 by the senior management and the division heads. The results of this self-assessment are documented in the answers to the IRRS questionnaires.</p>
232.	<p>Are there regular independent assessments conducted regularly on behalf of senior management:</p> <ul style="list-style-type: none"> • to evaluate the effectiveness of processes in meeting and fulfilling goals, strategies, plans and objectives?; • to determine the adequacy of work performance and leadership?; • to evaluate the organization's safety culture?; • to monitor product quality?; • to identify opportunities for improvement?. <p>Independent assessments shall be conducted regularly on behalf of senior management:</p> <ul style="list-style-type: none"> – To evaluate the effectiveness of processes in meeting and fulfilling goals, strategies, plans and objectives; – To determine the adequacy of work performance and leadership; – To evaluate the organization's safety culture; – To monitor product quality; – To identify opportunities for improvement. <p><i>SS Ref.: GS-R-3 para 6.3</i></p>	<p style="text-align: right;">Assessment: 3/0</p> <p>Answer: Independent reviews are conducted at regular intervals by the Federal Court of Audit (BRH). The last comprehensive review of Directorate-General RS was performed 2006/2007. On 20 March 2008, the BMU submitted its statement – after approval by the head of the department – on the respective observation letter of the Federal Court of Audit. The fundamental structures of the work and the adequacy of work performance is reviewed by the Federal Court of Audit, but not the quality of the individual work results.</p>

No	Question	Module 8: Management system – Answers BMU
	Further independent controlling is not provided and not intended either.	
233.	<p>Is there an organizational unit established with the responsibility for conducting independent assessments? Does the organizational unit have sufficient authority to discharge its responsibilities?</p> <p>An organizational unit shall be established with the responsibility for conducting independent assessments. This unit shall have sufficient authority to discharge its responsibilities.</p> <p><i>SS Ref.: GS-R-3 para 6.4</i></p>	Assessment: 3
	<p>Answer: see question 232</p>	
234.	<p>Is it clear that individuals conducting independent assessments do not assess their own work? Individuals conducting independent assessments shall not assess their own work.</p> <p><i>SS Ref.: GS-R-3 para 6.5</i></p>	Assessment: 3
	<p>Answer: see question 232</p>	
235.	<p>Does senior management evaluate the results of the independent assessments, take any necessary actions, and record and communicate their decisions and reasons?</p> <p>Senior management shall evaluate the results of the independent assessments, shall take any necessary actions, and shall record and communicate their decisions and the reasons for them.</p> <p><i>SS Ref.: GS-R-3 para 6.6</i></p>	Assessment: 3
	<p>Answer: Yes, also see answer to question 232.</p>	

No	Question	Module 8: Management system – Answers BMU
236.	<p>Are Management System reviews conducted at planned intervals to ensure the continuing suitability and effectiveness of the Management System and its ability to enable the accomplishment of the objectives set for the Regulatory Body?</p> <p>A management system review shall be conducted at planned intervals to ensure the continuing suitability and effectiveness of the management system and its ability to enable the objectives set for the organization to be accomplished.</p> <p><i>SS Ref.: GS-R-3 para 6.7</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: The management system comprises the strategic planning and the operational structures. Strategic planning and structures are regularly reviewed in terms of the objectives GS-R-3 para 6.7 to 6.10 – but not necessarily in a “closed” process. The work is assessed completely but in different processes. Complete fulfilment of the criteria would presuppose that the aspects mentioned in the requirements are systematically assessed in an annual evaluation.</p>
237.	<p>Do the reviews of the effectiveness of the Management System cover as a minimum:</p> <ul style="list-style-type: none"> • outputs from all forms of assessment; • results delivered and objectives achieved by the Regulatory Body and its processes; • non-conformances and corrective and preventive actions; • lessons learned from other organizations; • opportunities for improvement? <p>The review shall cover but shall not be limited to:</p> <ul style="list-style-type: none"> – Outputs from all forms of assessment; – Results delivered and objectives achieved by the organization and its processes; – Non-conformances and corrective and preventive actions; – Lessons learned from other organizations; – Opportunities for improvement. <p><i>SS Ref.: GS-R-3 para 6.8</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see question 236</p>

No	Question	Module 8: Management system – Answers BMU
238.	<p>Do the Management System reviews identify weaknesses and obstacles and thereafter evaluate these obstacles in order to remedy the weaknesses in a timely manner?</p> <p>Weaknesses and obstacles shall be identified, evaluated and remedied in a timely manner.</p> <p><i>SS Ref.: GS-R-3 para 6.9</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see question 236</p>
239.	<p>Do the Management System reviews identify whether there is a need to make changes to or improvements in policies, goals, strategies, plans, objectives and the processes?</p> <p>The review shall identify whether there is a need to make changes to or improvements in policies, goals, strategies, plans, objectives and processes.</p> <p><i>SS Ref.: GS-R-3 para 6.10</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see question 236</p>
240.	<p>Are the causes of non-conformances determined and remedial actions taken to prevent their recurrence?</p> <p>The causes of non-conformances shall be determined and remedial actions shall be taken to prevent their recurrence.</p> <p><i>SS Ref.: GS-R-3 para 6.11</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Limited to the internal organisational area of the Directorate-General RS, deficits in the execution and organisation of the operational processes are continuously reflected on the basis of the specified procedures and changes initiated, where appropriate. The defined special QM system for selected processes provides for a self-control system.</p>

No	Question	Module 8: Management system – Answers BMU
241.	<p>Are processes and products that do not conform to the specified requirements identified, segregated, controlled, recorded and reported at an appropriate level of management within the Regulatory Body?</p> <p>Products and processes that do not conform to the specified requirements shall be identified, segregated, controlled, recorded and reported to an appropriate level of management within the organization. The impact of nonconformances shall be evaluated and non-conforming products or processes shall be either:</p> <ul style="list-style-type: none"> – Accepted; – Reworked or corrected within a specified time period; or – Rejected and discarded or destroyed to prevent their inadvertent use. <p><i>SS Ref.: GS-R-3 para 6.12</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. There is an intensive communication process across all management levels.</p>
242.	<p>Is the impact of non-conformances evaluated, and non-conforming products and processes accepted, corrected or rejected?</p> <p>Products and processes that do not conform to the specified requirements shall be identified, segregated, controlled, recorded and reported to an appropriate level of management within the organization. The impact of nonconformances shall be evaluated and non-conforming products or processes shall be either:</p> <ul style="list-style-type: none"> – Accepted; – Reworked or corrected within a specified time period; or – Rejected and discarded or destroyed to prevent their inadvertent use. <p><i>SS Ref.: GS-R-3 para 6.12</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: see question 241</p>

No	Question	Module 8: Management system – Answers BMU
243.	<p>If a concession was granted to accept a non-conforming product or process, is there a requirement for it to be authorized? If a non-conforming product or process was reworked and corrected, is there a requirement for it to be inspected to demonstrate conformity with requirements?</p> <p>Concessions granted to allow acceptance of a non-conforming product or process shall be subject to authorization. When non-conforming products or processes are reworked or corrected, they shall be subject to inspection to demonstrate their conformity with requirements or expected results.</p> <p>SS Ref.: GS-R-3 para 6.13</p>	<p style="text-align: right;">Assessment: 3/0</p> <p>Answer: Regarding the products of the regulatory body (BMU/Directorate-General RS), the question should not be relevant, since deviations are either not possible (as far as statutory or BMU-internal provisions are to be complied with) or there are no special requirements on the products of the BMU/Directorate-General RS.</p> <p>Major deviations from the process descriptions of the QM manual are generally submitted to the superiors for decision. Such deviations are based, among other things, on prioritisations by superiors and on excessive workload for the staff in charge. Major deviations from the process descriptions may result, in particular, from the general regulation in the rules of procedure of the BMU 4.1 (4):</p> <p>"Planning and coordination of task performance Superiors bear responsibility for appropriate task allocation (see Section 2.3 No. 5 and Section 2.4 No. 1), efficient task performance and practical workflows, and for ensuring a balanced work load for the staff within their sphere of responsibility. They involve their subordinate staff in decisions within their individual sphere of responsibility. Superiors lay down targets and working standards, and in particular promote cooperation within their sphere of responsibility. This applies especially to divisions with part-time staff."</p> <p>Reworked processes are, like all other processes, to be checked - within the framework of their application - by the staff in charge and the superiors for conformance and functionality. Also see answer to question 205.</p>
244.	<p>Are corrective actions for eliminating non-conformances determined and implemented? Are subsequent preventive actions to eliminate the causes of potential non-conformances determined and taken?</p> <p>Corrective actions for eliminating non-conformances shall be determined and implemented. Preventive actions to eliminate the causes of potential nonconformances shall be determined and taken.</p> <p>SS Ref.: GS-R-3 para 6.14</p>	

No	Question	Module 8: Management system – Answers BMU
	<p>Answer: Yes. The structures for the elaboration of products and for compliance with processes are reviewed by the respective superior and corrected, if required.</p>	Assessment: 3
245.	<p>Is the status and effectiveness of all corrective and preventive actions monitored and reported to management at an appropriate level of in the organization?</p> <p>The status and effectiveness of all corrective and preventive actions shall be monitored and reported to management at an appropriate level in the organization.</p> <p><i>SS Ref.: GS-R-3 para 6.15</i></p>	
	<p>Answer: Yes, see question 244.</p>	Assessment: 3
246.	<p>Are potential non-conformances that could detract from the Regulatory Body's performance identified? Is this done by using feedback from other organizations, both internal and external; through the use of technical advances and research; through the sharing of knowledge and experience; and through the use of techniques that identify best practices?</p> <p>Potential non-conformances that could detract from the organization's performance shall be identified. This shall be done: by using feedback from other organizations, both internal and external; through the use of technical advances and research; through the sharing of knowledge and experience; and through the use of techniques that identify best practices.</p> <p><i>SS Ref.: GS-R-3 para 6.16</i></p>	
	<p>Answer: Yes. The federal supervisor uses all information and also the feedback on matters of substance received by other organisations to ensure that the required quality is achieved.</p>	Assessment: 3

No	Question	Module 8: Management system – Answers BMU
247.	<p>Are opportunities for improvement of the Management System identified and actions to improve the processes selected, planned and recorded?</p> <p>Opportunities for the improvement of the management system shall be identified and actions to improve the processes shall be selected, planned and recorded.</p> <p><i>SS Ref.: GS-R-3 para 6.17</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: Yes, see questions 205 and 231</p>
248.	<p>Are actions for improvement monitored through to their completion and the effectiveness of the improvement checked? Do improvement plans include plans for the provision of adequate resources?</p> <p>Improvement plans shall include plans for the provision of adequate resources. Actions for improvement shall be monitored through to their completion and the effectiveness of the improvement shall be checked.</p> <p><i>SS Ref.: GS-R-3 para 6.18</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: see questions 205 und 231</p>

3.2.10 Modul 8: Management system – Answers UM BW

No	Question	Module 8: Management system – Answers UM BW
157.	<p>Has the Regulatory Body established and implemented a Management System and is it clearly aligned with the goals of the Regulatory Body?</p> <p>A management system shall be established, implemented, assessed and continually improved. It shall be aligned with the goals of the organization and shall contribute to their achievement. The main aim of the management system shall be to achieve and enhance safety by:</p> <ul style="list-style-type: none"> – Bringing together in a coherent manner all the requirements for managing the organization; – Describing the planned and systematic actions necessary to provide adequate confidence that all these requirements are satisfied; – Ensuring that health, environmental, security, quality and economic requirements are not considered separately from safety requirements, to help preclude their possible negative impact on safety. <p><i>SS Ref.: GS-R-3 para 2.1</i></p>	
		Assessment: 3
	Answer:	
	<p>The duties of the nuclear regulatory authority in Baden-Württemberg are fulfilled by the Division Nuclear Supervision, Environmental Radioactivity (Division 3) of the Ministry of the Environment. The management system applied is adjusted to the requirements and objectives of a nuclear regulatory authority. A survey is given in Chapter 0 of the organisational manual.</p>	
	<p>The management system serves the purpose of fulfilling the requirements on the regulatory authority in a traceable, effective and efficient manner and of continuous improvement. The protection of man and the environment against the dangers of nuclear energy and the harmful effects of ionising radiation and thus the safety of nuclear installations have first priority.</p>	
	<p>The objective of the management system is to provide orientation for the division staff and to structure the processes. Regarding depth of detail and formalisation, it is adapted to the complexity and relevance of the processes. Requirements and regulations generally applicable for the <i>Land</i> administration or the Ministry of the Environment are specified for the division conditions and included in the management system.</p>	
	<p>The management system is the steering tool in the division and is binding for it. The division head has the prime responsibility for it.</p>	
	<p>The management system is structured in form of a pyramid (cf. Chapter 0 of the organisational manual). At the top, there are the basics of the management system with definition of the mission of the authority, with guiding characteristics of its activities, with the mission statement as framework of action as well as the definition of goals. The next lower level comprises the oversight concept. It is the programmatic basis for the regulatory activities of the authority and describes the legal framework conditions for these activities as well as the safety</p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>philosophy and methodical proceeding of the authority. The next lower level includes the manuals of the regulatory authority, the processes, rules and instructions for the activities. The general and organisational regulations are included in the organisational manual, the regulations on oversight activities in the oversight manual and the regulations on nuclear emergencies in the emergency manual. The lowest level comprises aids and documents. These are found in the references in the manuals and the attachments to the manuals.</p>	
158.	<p>Does the Management System bring together in a coherent manner all the requirements for managing the Regulatory Body?</p> <p>A management system shall be established, implemented, assessed and continually improved. It shall be aligned with the goals of the organization and shall contribute to their achievement. The main aim of the management system shall be to achieve and enhance safety by:</p> <ul style="list-style-type: none"> – Bringing together in a coherent manner all the requirements for managing the organization; – Describing the planned and systematic actions necessary to provide adequate confidence that all these requirements are satisfied; – Ensuring that health, environmental, security, quality and economic requirements are not considered separately from safety requirements, to help preclude their possible negative impact on safety. <p><i>SS Ref.: GS-R-3 para 2.1</i></p>	
	<p>Answer:</p> <p>The processes of the management system that are applied in Division 3, include the requirements for safety and safety assessments (based on the nuclear law), on quality and personnel management (based on the official regulations and civil service law), economic requirements (based on the budget law) among others in a co-ordinated and coherent manner. First priority is given to safety.</p> <p>The requirements for the “regulatory body” being fulfilled at the <i>Land</i> level are covered. The interfaces with the federal level of the “regulatory body” are defined.</p> <p>The central elements of a management system, such as principles/mission statement, bindingness for all staff, allocation of responsibilities, definition of interfaces, regulations for the main processes, for communication, for reviews and derivation of improvement measures are available and described in the manuals of Division 3 (organisational manual, oversight manual, emergency manual).</p>	<p style="text-align: right;">Assessment: 3</p>

No	Question	Module 8: Management system – Answers UM BW
159.	<p>Does the Management System describe the planned and systematic actions necessary to provide adequate confidence that all these requirements are satisfied?</p> <p>A management system shall be established, implemented, assessed and continually improved. It shall be aligned with the goals of the organization and shall contribute to their achievement. The main aim of the management system shall be to achieve and enhance safety by:</p> <ul style="list-style-type: none"> – Bringing together in a coherent manner all the requirements for managing the organization; – Describing the planned and systematic actions necessary to provide adequate confidence that all these requirements are satisfied; – Ensuring that health, environmental, security, quality and economic requirements are not considered separately from safety requirements, to help preclude their possible negative impact on safety. <p><i>SS Ref.: GS-R-3 para 2.1</i></p>	<p style="text-align: right;">Assessment: 2</p> <p>Answer: The organisational manual, in particular the schedule of responsibilities (cf. Chapter 0 and Chapter 1.1 of the organisational manual) specifies the tasks of the sections. Review and further development of rules and regulations in Division 3, i.e. of the management systems, is a task of Section 32 and defined in its section working programme. Within this framework, it is also checked to which extent the management system as a whole has to be further developed.</p> <p>In addition to these internal reviews and dealing with opportunities for improvement, the management system in Division 3 is subjected to external reviews from time to time. So, for example, a major review was performed in 2002 by the Kienbaum consulting company. In 2006, the activities of Division 3 were subjected to a review by the International Committee on Nuclear Technology (Internationale Länderkommission Kerntechnik - ILK). Regarding the management system, the ILK proposed to continue the activities towards a more formal management system.</p> <p>On the basis of the ILK review, Division 3 derived measures. The “lived” management processes are to be fixed in the organisational manual in written, reviewed for their completeness and completed, where required. Measures for further development of the management system are provided in the action plan. Recommendations resulting from the IRRS review shall also be included in the further development of the management system.</p>
160.	<p>Does the Management System ensure that safety is paramount, overriding all other demands?</p> <p>Safety shall be paramount within the management system, overriding all other demands.</p> <p><i>SS Ref.: GS-R-3 para 2.2</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. The priority of safety is clearly expressed in the mission statement and in the oversight concept.</p> <p>Giving overriding priority to safety was the leading principle for the development of regulations in the oversight concept, the oversight manual, the organisational manual and the emergency manual. The oversight concept refers to “safety-oriented law enforcement” and “more extensive control”. Safety-oriented law enforcement means that wherever law leaves room for discretion or even requires balancing of rights, a safety-oriented decision is to be taken. More extensive control means that the regulatory authority aims at achieving safety improvements in dialogue and discussion with the nuclear power plant operators that go beyond the statutory requirements.</p> <p>For the behaviour level, the mission statement of the Division Nuclear Supervision, Environmental Radioactivity serves as orientation which gives priority to safety.</p>	<p>Assessment: 3</p>
161.	<p>Does the Management System identify and integrate the requirements contained in:</p> <ul style="list-style-type: none"> • statutory and regulatory requirements of the Member State?; • requirements formally agreed with stakeholders?; • other relevant IAEA Safety Requirements publications?; • requirements from other relevant codes and standards?. <p>The management system shall identify and integrate with the requirements contained within this publication:</p> <ul style="list-style-type: none"> – The statutory and regulatory requirements of the Member State; – Any requirements formally agreed with interested parties (also known as ‘stakeholders’7); – All other relevant IAEA Safety Requirements publications, such as those on emergency preparedness and response [8] and safety assessment [9]; – Requirements from other relevant codes and standards adopted for use by the organization. <p><i>SS Ref.: GS-R-3 para 2.3</i></p>	<p>Assessment: 3</p> <p>Answer: The development of the regulations in the oversight concept and the oversight manual at the end of the nineties was performed on the basis of a review of the legal requirements, the lived practice in the division and good practice of other authorities. Existing regulations with stakeholders were included or amended in this connection and then included. Requirements of the IAEA regulations and standards were also taken into consideration. Later modifications were considered in the manuals just as later optimisations. Section 32 has the task to monitor the national and international developments and to evaluate them with regard to the management system of Division 3.</p>

No	Question	Module 8: Management system – Answers UM BW
162.	<p>Can the Regulatory Body demonstrate the effective fulfilment of its Management System requirements?</p> <p>The organization shall be able to demonstrate the effective fulfilment of its management system requirements.</p> <p>SS Ref.: GS-R-3 para 2.4</p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The management system provides PDCA cycles at three levels (cf. Figures 2-5 in Chapter 0 of the organisational manual). At each level, check steps and check tools are provided. So, the effective fulfilment of management system requirements is subject of the regular section and section heads meetings and the superior controls. A comprehensive assessment on the basis of indicators and evaluations is performed within the framework of the annual strategy meeting at the management level, consisting of division head, section heads and their deputies. Further evaluations are performed in connection with presentations of activities and reporting for the <i>Land</i> government, the parliament and the public or after internal or external reviews.</p> <p>Based on a comprehensive record keeping, it can also be seen by the different products of the authority that and how the requirements are fulfilled. Such demonstrations of acting of the authority on the basis of records may become necessary, e.g., in legal proceedings and when granting access to records according to the Environmental Information Act (UIG).</p>
163.	<p>Does the Management System promote & support a strong safety culture by:</p> <ul style="list-style-type: none"> • ensuring a common understanding of the key aspects of safety culture?; • providing the means to support individuals and teams to carry out their tasks safely and successfully?; • reinforcing a learning and questioning attitude at all organizational levels?; • providing the means to continually develop and improve its safety culture? <p>The management system shall be used to promote and support a strong safety culture by:</p> <ul style="list-style-type: none"> – Ensuring a common understanding of the key aspects of safety culture within the organization; – Providing the means by which the organization supports individuals and teams in carrying out their tasks safely and successfully, taking into account the interaction between individuals, technology and the organization; – Reinforcing a learning and questioning attitude at all levels of the organization; – Providing the means by which the organization continually seeks to develop and improve its safety culture. <p>SS Ref.: GS-R-3 para 2.5</p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: The central aspects of the safety culture of the regulatory authority in Baden-Württemberg (oversight culture) are subject matter of the mission statement of the Division Nuclear Supervision, Environmental Radioactivity. The mission statement was developed in numerous workshops with involvement of all division staff at the end of 2000 until the beginning of 2001. After an introduction phase, a review was performed in 2004 in form of staff interviews. On the basis of the staff interviews, the single statements in the mission statement were identified which were considered to have a high relevance for the daily work but, at the same time, were judged to be weakly developed in practice. On these statements, further implementation workshops of the whole division were performed as well as a one-day consultation by section heads and the division head.</p> <p>Based on the recommendations of the ILK review, workshops on oversight practice were introduced. These workshops are aimed at the development and consolidation of a common understanding of oversight safety culture, the exchange of experiences on oversight practice and training of the application of the oversight tool KOMFORT (cf. Chapter 7.3.2.1.1/2 of the oversight manual).</p> <p>For promotion and self-assessment of the safety culture/oversight culture, measures are provided in the action plan.</p>	<p>Assessment: 2</p>
164.	<p>Is the application of the Management System requirements graded so as to deploy appropriate resources, on the basis of the consideration of:</p> <ul style="list-style-type: none"> • the significance and complexity of each product or activity; • the hazard and magnitude of the potential risk associated with the safety, health, environmental, security, quality and economics of each product and activity; • the possible consequences if a product fails or an activity is carried out incorrectly? <p>The application of management system requirements shall be graded so as to deploy appropriate resources, on the basis of the consideration of:</p> <ul style="list-style-type: none"> – The significance and complexity of each product or activity; – The hazards and the magnitude of the potential impact (risks) associated with the safety, health, environmental, security, quality and economic elements of each product or activity; – The possible consequences if a product fails or an activity is carried out incorrectly. <p>SS Ref.: GS-R-3 para 2.6</p>	
	<p>Answer: Yes. The regulations in Division 3 provide graded requirements. Regarding the different testing methods, regulations are described in Chapter 7.3 of the oversight concept and the associated chapters of the oversight manual with corresponding depth. Depending on the safety significance, experts are also consulted to a varying extent (cf., for example, the proceeding in case of modification subject and not subject to licensing in Chapter 7.3.4 of the oversight concept). Grading according to complexity and safety significance also takes place regarding the responsibility for decisions of the authority. In</p>	<p>Assessment: 3</p>

No	Question	Module 8: Management system – Answers UM BW
	<p>case of more complex subject matters, different authorities or organisational units are to be involved according to the contents concerned. In case of major decisions, the legal section (Section 31) is to be involved. The signature regulations provide that the responsibility for decisions in case of major decisions is at a correspondingly higher hierarchy level.</p>	
165.	<p>Is grading applied to the products and activities of each process undertaken by the Regulatory Body?</p> <p>Grading of the application of management system requirements shall be applied to the products and activities of each process.</p> <p><i>SS Ref.: GS-R-3 para 2.7</i></p>	Assessment:
166.	<p>Is the Management System clearly documented and does it include:</p> <ul style="list-style-type: none"> • the policy statements of the Regulatory Body; • a description of the Management System; • a description of the structure of the Regulatory Body; • a description of the functional responsibilities, accountabilities, levels of authority and interactions of those managing, performing and assessing work; • a description of the processes and supporting information that explain how work is to be prepared, reviewed, carried out, recorded, assessed and improved? <p>The documentation of the management system shall include the following:</p> <ul style="list-style-type: none"> – The policy statements of the organization; – A description of the management system; – A description of the structure of the organization; – A description of the functional responsibilities, accountabilities, levels of authority and interactions of those managing, performing and assessing work; – A description of the processes and supporting information that explain how work is to be prepared, reviewed, carried out, recorded, assessed and improved. <p><i>SS Ref.: GS-R-3 para 2.8</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. The management system which steers and controls the work of the division, i.e. the regulatory body at the level of the <i>Land</i> of Baden-Württemberg, is documented in the mission statement, objectives, organisational manual, oversight concept, oversight manual and emergency manual. A description of the management system is included in the organisational manual (cf. Chapter 0 of the organisational manual). There, the mission, the guiding characteristics and objectives are documented. The fundamental features and guiding ideas (“policy”) for the main task of the division, the oversight of nuclear power plants, are defined in the oversight concept. The organisational structure of the division is documented in Chapter 1 of the organisational manual. The tasks and responsibilities at the different levels of hierarchy and their interaction are subject of Chapter 3.1 of the organisational manual. The interaction of different sections in case of certain tasks and processes is defined in Chapter 2 of the organisational manual. Chapter 3 of the organisational manual regulates the general organisational processes. Significant processes and supporting documents for oversight activities are subject matter of the oversight manual. The organisational regulations, the processes and supporting documents for coping with exceptional events (nuclear incidents, emergencies, events relevant for physical protection, etc.) are comprised in a separate emergency manual.</p>	<p>Assessment: 3</p>
167.	<p>Is the documented Management System understandable, legible, readily identifiable and available to the Regulatory Body staff?</p> <p>The documentation of the management system shall be developed to be understandable to those who use it. Documents shall be readable, readily identifiable and available at the point of use.</p> <p><i>SS Ref.: GS-R-3 para 2.9</i></p>	<p>Assessment: 3</p>
168.	<p>.Does the documentation for the Management System reflect:</p> <ul style="list-style-type: none"> • the characteristics of the Regulatory Body and its activities; • the complexities of processes and their interactions? <p>The documentation of the management system shall reflect:</p> <ul style="list-style-type: none"> – The characteristics of the organization and its activities; – The complexities of processes and their interactions. <p><i>SS Ref.: GS-R-3 para 2.10</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. The management system applied in Division 3 and documented in the mentioned documents was especially developed by this division for this division. It is “grown structure” aimed at the particularities of the regulatory authority and the processes requiring regulations.</p>	Assessment: 3
169.	<p>Does management at all levels demonstrate its commitment to the establishment, implementation, assessment and continual improvement of the Management System?</p> <p>Management at all levels shall demonstrate its commitment to the establishment, implementation, assessment and continual improvement of the management system and shall allocate adequate resources to carry out these activities.</p> <p><i>SS Ref.: GS-R-3 para 3.1</i></p>	
	<p>Answer: Yes. Division head and section heads emphatically support the management system. This is reflected, for example, by the agenda items of the weekly section head meetings which often deal with planning and controls of processes within the management system as well as proposals for improvements. The introduction of essential elements of the management system regulations (oversight concept, manuals, mission statement) were approved by the head of the Ministry of the Environment (Minister, Ministerial Director).</p>	Assessment: 3
170.	<p>Does the management allocate adequate resources to carry out its commitment to the establishment, implementation, assessment and continual improvement of the Management System?</p> <p>Management at all levels shall demonstrate its commitment to the establishment, implementation, assessment and continual improvement of the management system and shall allocate adequate resources to carry out these activities.</p> <p><i>SS Ref.: GS-R-3 para 3.1</i></p>	
	<p>Answer: Yes. Section 32 and its staff is, among other things, responsible for planning, co-ordination, evaluation and presentation of oversight practice. According to the work programme of Section 32, this includes, among other things, the revision and further development of the division-internal rules and regulations and the evaluations and reviews of oversight practice. These evaluations and reviews serve the purpose of continuous improvement. For example, process representations and process indicators as well as additional review procedures for the personnel/organisational area have been included in the oversight manual in recent years.</p>	Assessment: 3

No	Question	Module 8: Management system – Answers UM BW
171.	<p>Does senior management develop individual values, institutional values and behavioural expectations for the Regulatory Body to support the implementation of the Management System?</p> <p>Senior management shall develop individual values, institutional values and behavioural expectations for the organization to support the implementation of the management system and shall act as role models in the promulgation of these values and expectations.</p> <p><i>SS Ref.: GS-R-3 para 3.2</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Division 3 is a small organisation with close contact between superiors and staff and with intensive internal communication.</p> <p>Within their daily contact with its staff, the section heads express their expectations and ideas, give motivation and support and at the same time act as role models.</p> <p>The division head is in personal contact with the staff and uses both personal talks and talks within a larger group to visualise his expectations with regard to strategic issues and to values and behaviour. Good knowledge of the plants, intensive open communication with the plant operators, the commitment to improve safety and a team-oriented co-operative interaction with one another are values which are exemplified by the division head also by his role model behaviour.</p> <p>The regulations in the manuals are basis and scope of the activities. However, they shall not replace thinking. Like actions they are always to be reflected with regard to improvements.</p> <p>In addition to these daily contacts, there are weekly section head meetings and section meetings. Once a year, each superior conducts appraisal interviews with each of his staff. Also once a year, the division head holds an extensive meeting with each section. These meetings also serve the purpose of the objectives mentioned in the questions.</p>
172.	<p>Does senior management act as role models in the visible promulgation of the individual values, institutional values and behavioural expectations of the Regulatory Body?</p> <p>Senior management shall develop individual values, institutional values and behavioural expectations for the organization to support the implementation of the management system and shall act as role models in the promulgation of these values and expectations.</p> <p><i>SS Ref.: GS-R-3 para 3.2</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: See answer to question 171.</p>	<p>Assessment:</p>
173.	<p>Does management at all levels of the Regulatory Body communicate to individuals the need to adopt the individual values, institutional values and behavioural expectations as well as to comply with the requirements of the Management System?</p> <p>Management at all levels shall communicate to individuals the need to adopt these individual values, institutional values and behavioural expectations as well as to comply with the requirements of the management system.</p> <p><i>SS Ref.: GS-R-3 para 3.3</i></p>	<p>Assessment:</p>
	<p>Answer: See answer to question 171.</p>	
174.	<p>Does management at all levels of the Regulatory Body foster the involvement of all individuals in the implementation and continual improvement of the Management System?</p> <p>Management at all levels shall foster the involvement of all individuals in the implementation and continual improvement of the management system.</p> <p><i>SS Ref.: GS-R-3 para 3.4</i></p>	<p>Assessment:</p>
	<p>Answer: See answer to question 171.</p>	
175.	<p>Does senior management ensure that it is clear when, how and by whom decisions are to be made within the Management System?</p> <p>Senior management shall ensure that it is clear when, how and by whom decisions are to be made within the management system.</p> <p><i>SS Ref.: GS-R-3 para 3.5</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: The management system with regulations on the allocation of responsibilities in the schedule of responsibilities and in the organisational manual defines which organisational units and which persons are responsible for the respective tasks. The signature regulations define who bears the responsibility for decisions.</p> <p>Regarding the further development and improvement of the management system, proposals can be made by all staff members of the division. It is the task of Section 32 to deal with the proposals and to include improvements in the system of documents. Modified documents are included in the rules and regulations after discussion within the division and consultation/adoption at the section head meeting.</p>	Assessment: 3
176.	<p>Are the expectations of stakeholders considered by senior management in the activities and interactions in the processes of the Management System?</p> <p>The expectations of interested parties shall be considered by senior management in the activities and interactions in the processes of the management system, with the aim of enhancing the satisfaction of interested parties while at the same time ensuring that safety is not compromised.</p> <p><i>SS Ref.: GS-R-3 para 3.6</i></p> <p>Answer: The main stakeholders are</p> <ul style="list-style-type: none"> – plant operators, – authorised experts – the public, – the political leadership of the Ministry of the Environment, and – other authorities. <p>The expectations and concerns of the nuclear power plant are subject, among other things, of the strategic dialogue and further discussions at the management level (cf. Chapter 7.3.2.1.4 of the oversight manual). Further, meetings are held annually (or several times a year) with the executive and project management of the prime technical safety organisation TÜV SÜD ET and KeTAG on general issues of co-operation and the mutual expectations. The contact with citizens, with non-governmental organisations, with the public, etc., mainly takes place through the Internet and through the answers given to individual letters. It is planned to enter into direct contact with the public and residents with special events for citizens in the vicinity of nuclear power plants. This project is based on a suggestion of the ILK review. The contact with the political leadership of the Ministry for the Environment (Minister, Ministerial Director, press office and others) takes place within the framework of the weekly division head meetings and event-based on pending issues. Meetings with other authorities on co-ordinated proceedings are held at the management level regularly or for special occasions.</p> <p>These meetings provide knowledge about point of views and expectations of the stakeholders that are used for improving work and the regulations on the management system.</p>	Assessment: 3

No	Question	Module 8: Management system – Answers UM BW
177.	<p>Does senior management aim to enhance stakeholder satisfaction while at the same time ensuring that safety is not compromised?</p> <p>The expectations of interested parties shall be considered by senior management in the activities and interactions in the processes of the management system, with the aim of enhancing the satisfaction of interested parties while at the same time ensuring that safety is not compromised.</p> <p><i>SS Ref.: GS-R-3 para 3.6</i></p>	Assessment: 3
178.	<p>Does senior management develop the policies for the Regulatory Body and are these policies appropriate to the activities and facilities of the Regulatory Body?</p> <p>Senior management shall develop the policies of the organization. The policies shall be appropriate to the activities and facilities of the organization.</p> <p><i>SS Ref.: GS-R-3 para 3.7</i></p>	Assessment: 3
179.	<p>Does senior management establish goals, strategies, plans and objectives that are consistent with the policies of the Regulatory Body?</p> <p>Senior management shall establish goals, strategies, plans and objectives that are consistent with the policies of the organization.</p> <p><i>SS Ref.: GS-R-3 para 3.8</i></p>	Assessment:
	<p>Answer: See answer to question 178.</p>	

No	Question	Module 8: Management system – Answers UM BW
180.	<p>Does senior management develop the goals, strategies, plans and objectives of the Regulatory Body in an integrated manner so that their collective impact on safety is understood and managed?</p> <p>Senior management shall develop the goals, strategies, plans and objectives of the organization in an integrated manner so that their collective impact on safety is understood and managed.</p> <p><i>SS Ref.: GS-R-3 para 3.9</i></p>	
	<p>Answer: See answer to question 178.</p>	Assessment:
181.	<p>Does senior management ensure that measurable objectives for implementing the goals, strategies and plans are established through appropriate processes at various levels in the Regulatory Body?</p> <p>Senior management shall ensure that measurable objectives for implementing the goals, strategies and plans are established through appropriate processes at various levels in the organization.</p> <p><i>SS Ref.: GS-R-3 para 3.10</i></p>	
	<p>Answer: See answer to question 178.</p>	Assessment:
182.	<p>Does senior management ensure that the implementation of the plans is regularly reviewed against the Regulatory Body's objectives and actions taken to address deviations from the plans where necessary?</p> <p>Senior management shall ensure that the implementation of the plans is regularly reviewed against these objectives and that actions are taken to address deviations from the plans where necessary.</p> <p><i>SS Ref.: GS-R-3 para 3.11</i></p>	
	<p>Answer: Yes. The status of achievement of objectives (annual targets, measures taken) is monitored within the framework of the weekly section head meetings</p> <p>The adherence to and the achievement of the provisions of the oversight manual (process parameters) and organisational manual is subject of the</p>	Assessment: 3

No	Question	Module 8: Management system – Answers UM BW
	controls by the section heads in the sections. Deviations are addressed in the section head meetings. Moreover, the work programmes of the sections are discussed with the division head once a year.	
183.	<p>Is senior management of the Regulatory Body clearly responsible for ensuring that the Management System is established, implemented, assessed and continually improved?</p> <p>Senior management shall be ultimately responsible for the management system and shall ensure that it is established, implemented, assessed and continually improved.</p> <p><i>SS Ref.: GS-R-3 para 3.12</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The management system in Division 3 is the tool used by the division head and the section heads for steering and control of the division. Each superior has to ensure that within his sphere of responsibility the management system is applied and that the processes take place as specified. The review and derivation of improvements is part of the controls performed by the superiors. The tasks of the division head and the section heads are described in Chapter 3.1 of the organisational manual.</p>
184.	<p>Is there an individual reporting directly to senior management who has specific responsibility and authority for:</p> <ul style="list-style-type: none"> • coordinating the development and implementation of the Management System, and for its assessment and continual improvement; • reporting on the performance of the Management System, including its influence on safety and safety culture, and any need for improvement; • resolving any potential conflicts between requirements and within the processes of the Management System? <p>An individual reporting directly to senior management shall have specific responsibility and authority for:</p> <ul style="list-style-type: none"> – Coordinating the development and implementation of the management system, and its assessment and continual improvement; – Reporting on the performance of the management system, including its influence on safety and safety culture, and any need for improvement; – Resolving any potential conflicts between requirements and within the processes of the management system. <p><i>SS Ref.: GS-R-3 para 3.13</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The monitoring of the general development and further development of the management system is the task of Section 32 “General affairs of nuclear supervision”. The individual processes are monitored by the respective section heads within their scope of tasks. Thus, Section 32 is the organisational unit responsible for the management system (management system officer). The head of Section 32 directly reports to the division head. The section heads are process managers.</p>

No	Question	Module 8: Management system – Answers UM BW
185.	<p>Does the Regulatory Body retain overall responsibility for the Management System when an external organization is involved in the work of developing all or part of the Management System?</p> <p>The organization shall retain overall responsibility for the management system when an external organization is involved in the work of developing all or part of the management system.</p> <p>SS Ref.: GS-R-3 para 3.14</p>	<p style="text-align: right;">Assessment:</p> <p>Answer: Division 3 developed the management system with own personnel. External organisations have not been involved.</p>
186.	<p>Does senior management determine the amount of resources necessary and provide the resources to carry out the activities of the Regulatory Body and to establish, implement, assess and continually improve the Management System?</p> <p>Senior management shall determine the amount of resources necessary and shall provide the resources9 to carry out the activities of the organization and to establish, implement, assess and continually improve the management system.</p> <p>SS Ref.: GS-R-3 para 4.1</p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The main resource for tasks of Division 3 is the personnel (number, qualification) with the corresponding equipment (office rooms, office equipment, etc.). The posts in the division are defined in the staff appointment scheme. In case of changes of tasks and organisational structure or if staff leave, staffing is reviewed and adjusted to the new conditions. Personnel administration is a task of Section 12 “Personnel” in the Ministry of the Environment. It supports the division head in the area of personnel administration. A change in staffing of the division is not possible without approval of the division head.</p> <p>The personnel and operating costs incurring in connection with licensing and oversight procedures are reimbursed by the plant operators (cf. Chapter 10 of the oversight manual).</p>
187.	<p>Is the information and knowledge of the Regulatory Body managed as a resource?</p> <p>The information and knowledge of the organization shall be managed as a resource.</p> <p>SS Ref.: GS-R-3 para 4.2</p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. The experience and the know-how of the personnel is regarded as resource.</p> <p>It is especially considered within the framework of division-internal job rotations. These job rotations are aimed at broadening the experience, knowledge transfer and the establishment of corresponding competencies of junior staff.</p> <p>Information in the authority and knowledge in the organisation are regulated by file management and keeping of the files (cf. Chapter 3.2 of the organisational manual). In addition to keeping the files in paper form, information and documents are increasingly archived electronically and kept available in form of electronic filing.</p> <p>For the development and maintenance of knowledge in special areas, technical co-ordinators (cf. Chapter 1.7 of the organisational manual) are appointed. Advanced training courses, in particular the qualification seminar organised by the division, serve the purpose of this objective.</p>	<p>Assessment: 3</p>
188.	<p>Does senior management determine the competence requirements for individuals at all levels?</p> <p>Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.</p> <p><i>SS Ref.: GS-R-3 para 4.3</i></p>	<p>Assessment: 3</p>
189.	<p>Does senior management provide training or take other actions to achieve the required level of competence?</p> <p>Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.</p> <p><i>SS Ref.: GS-R-3 para 4.3</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: The further qualification of the authority staff is of great importance in Division 3. In this respect, sufficient financial means are available. Within the framework of an external review, the means for further qualification of Division 3 were checked in 2002, among other things, which were increased as a result of this review. The competence requirements to be fulfilled by a staff member for his/her tasks and further (appropriate) qualification measures derived from it are subject of the annual appraisal interview.</p>	Assessment: 3
190.	<p>Does senior management conduct an evaluation of the effectiveness of any actions taken?</p> <p>Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.</p> <p><i>SS Ref.: GS-R-3 para 4.3</i></p>	Assessment: 3
191.	<p>Does senior management ensure that suitable proficiency is achieved and maintained?</p> <p>Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.</p> <p><i>SS Ref.: GS-R-3 para 4.3</i></p>	Assessment:
	<p>Answer: See answer to question 190.</p>	

No	Question	Module 8: Management system – Answers UM BW
192.	<p>Does senior management ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities?</p> <p>Senior management shall ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities. Individuals shall have received appropriate education and training, and shall have acquired suitable skills, knowledge and experience to ensure their competence. Training shall ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of the organization's objectives.</p> <p><i>SS Ref.: GS-R-3 para 4.4</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Yes. The issue of required individual capacities and skills is subject of the annual appraisal interview between superior and each staff member. The measures of training and further qualification (courses, conferences, participation in work groups/committees, study of technical literature, etc.) and the organisation of further qualification are described in Chapter 3.4 of the organisational manual.</p>
193.	<p>Do individuals receive appropriate education and training and how do they acquire suitable skills, knowledge and experience to ensure their competence?</p> <p>Senior management shall ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities. Individuals shall have received appropriate education and training, and shall have acquired suitable skills, knowledge and experience to ensure their competence. Training shall ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of the organization's objectives.</p> <p><i>SS Ref.: GS-R-3 para 4.4</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 192.</p>

No	Question	Module 8: Management system – Answers UM BW
194.	<p>Does training ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of the Regulatory Body's objectives?</p> <p>Senior management shall ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities. Individuals shall have received appropriate education and training, and shall have acquired suitable skills, knowledge and experience to ensure their competence. Training shall ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of the organization's objectives.</p> <p><i>SS Ref.: GS-R-3 para 4.4</i></p>	
	<p>Answer: The significance of the individual activities for the safety of nuclear installations and for the achievement of the objectives of Division 3 primarily is subject of the section meetings. However, such issues are also discussed in the presentations and in the discussions on the presentations held in the division-internal qualification seminar.</p>	Assessment: 3
195.	<p>Does senior management determine, provide, maintain and re-evaluate the infrastructure and the working environment necessary for work to be carried out in a safe manner and for requirements to be met?</p> <p>Senior management shall determine, provide, maintain and re-evaluate the infrastructure and the working environment necessary for work to be carried out in a safe manner and for requirements to be met.</p> <p><i>SS Ref.: GS-R-3 para 4.5</i></p>	
	<p>Answer: The reviews in the management system also comprise the necessary infrastructure and the work place conditions. For example, rooms and equipment for the emergency task force have been extended in recent years as experience from the emergency exercises. The revision and optimisation of the documents for emergency preparedness is dealt with in the action plan. The improvement of the IT tools is a strategic objective of Division 3.</p>	Assessment: 2
196.	<p>Are the processes of the Management System that are needed to achieve the goals, provide the means to meet all objectives and deliver the plans of the Regulatory Body identified?</p> <p>The processes of the management system that are needed to achieve the goals, provide the means to meet all requirements and deliver the products of the organization shall be identified, and their development shall be planned, implemented, assessed and continually improved.</p> <p><i>SS Ref.: GS-R-3 para 5.1</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: The management system consists of regulations and documents included in the organisational manual, oversight manual and emergency manual. It is a “grown” system developed by own personnel which has been continuously improved.</p> <p>In recent years, graphical representations (process representations) were developed and process indicators defined for the main processes in the oversight procedures. The process representations include the requirements on the processes, input and output of the processes, the connections with other processes and the responsibilities for these as well as process parameters.</p> <p>Further development of the management system is provided. The management system shall comply with the structure and size of the division. A certified system is not strived for. The completion of processes, process descriptions and process indicators is provided in the action plan.</p>	<p>Assessment: 2</p>
197.	<p>Are the processes developed, planned, implemented, assessed and continually improved?</p> <p>The processes of the management system that are needed to achieve the goals, provide the means to meet all requirements and deliver the products of the organization shall be identified, and their development shall be planned, implemented, assessed and continually improved.</p> <p><i>SS Ref.: GS-R-3 para 5.1</i></p>	<p>Assessment:</p>
198.	<p>Are sequence and interactions of the processes determined?</p> <p>The sequence and interactions of the processes shall be determined.</p> <p><i>SS Ref.: GS-R-3 para 5.2</i></p>	<p>Assessment:</p>
	<p>Answer: See answer to question 196.</p>	
	<p>Answer: See answer to question 196.</p>	

No	Question	Module 8: Management system – Answers UM BW
199.	<p>Do methods necessary to ensure the effectiveness of both the implementation and the control of the processes determined and implemented?</p> <p>The methods necessary to ensure the effectiveness of both the implementation and the control of the processes shall be determined and implemented.</p> <p><i>SS Ref.: GS-R-3 para 5.3</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 196.</p>
200.	<p>Does the development of each process ensure that the following are achieved:</p> <ul style="list-style-type: none"> • process requirements, such as applicable regulatory, statutory, legal, safety, health, environmental, security, quality and economic related requirements, are specified and addressed; • hazards and risks are identified, together with any necessary mitigatory actions; • interactions with interfacing processes are identified; • process inputs are identified; • the process flow is described; • process outputs (products) are identified; • process measurement criteria are established? <p>The development of each process shall ensure that the following are achieved:</p> <ul style="list-style-type: none"> – Process requirements, such as applicable regulatory, statutory, legal, safety, health, environmental, security, quality and economic requirements, are specified and addressed. – Hazards and risks are identified, together with any necessary mitigatory actions. – Interactions with interfacing processes are identified. – Process inputs are identified. – The process flow is described. – Process outputs (products) are identified. – Process measurement criteria are established. <p><i>SS Ref.: GS-R-3 para 5.4</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 196.</p>

No	Question	Module 8: Management system – Answers UM BW
201.	<p>Are activities and interfaces between different individuals or groups involved in a single process planned, controlled and managed in a manner that ensures effective communication and the clear assignment of responsibilities?</p> <p>The activities of and interfaces between different individuals or groups involved in a single process shall be planned, controlled and managed in a manner that ensures effective communication and the clear assignment of responsibilities.</p> <p><i>SS Ref.: GS-R-3 para 5.5</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 196.</p>
202.	<p>Does a designated individual for each process have the authority and responsibility for:</p> <ul style="list-style-type: none"> • developing and documenting the process and maintaining the necessary supporting documentation; • ensuring that there is effective interaction between interfacing processes; • ensuring that process documentation is consistent with any existing documents; • ensuring that the records required to demonstrate that the process results have been achieved are specified in the process documentation; • monitoring and reporting on the performance of the process; • promoting improvement in the process; • ensuring that the process, including any subsequent changes to it, is aligned with the goals, strategies, plans and objectives of the Regulatory Body? <p>For each process a designated individual shall be given the authority and responsibility for:</p> <ul style="list-style-type: none"> – Developing and documenting the process and maintaining the necessary supporting documentation; – Ensuring that there is effective interaction between interfacing processes; – Ensuring that process documentation is consistent with any existing documents; – Ensuring that the records required to demonstrate that the process results have been achieved are specified in the process documentation; – Monitoring and reporting on the performance of the process; – Promoting improvement in the process; – Ensuring that the process, including any subsequent changes to it, is aligned with the goals, strategies, plans and objectives of the organization. <p><i>SS Ref.: GS-R-3 para 5.6</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Section 32 is responsible for monitoring, optimisation and further development of the management system and the documents of the management system. The tasks are defined in the work programme of the section and assigned to designated individuals. Monitoring of the processes and process results is a task of the persons involved in the processes and the respective superiors. Need for changes and improvement proposals on individual processes and process regulations are communicated to Section 32 and further dealt with there. The processes in which co-operation, assistance or support by external organisations e.g. by authorised experts are provided remain within the responsibility of Division 3.</p>	Assessment: 3
203.	<p>Are the acceptance criteria and responsibilities identified for each process and activities for inspection, testing, verification and validation?</p> <p>For each process, any activities for inspection, testing, verification and validation, their acceptance criteria and the responsibilities for carrying out these activities shall be specified. For each process, it shall be specified if and when these activities are to be performed by designated individuals or groups other than those who originally performed the work.</p> <p><i>SS Ref.: GS-R-3 para 5.7</i></p>	Assessment:
204.	<p>Is it specified for each process if and when the activities for inspection, testing, verification and validation are to be performed by designated individuals and groups other than those who originally performed the work?</p> <p>For each process, any activities for inspection, testing, verification and validation, their acceptance criteria and the responsibilities for carrying out these activities shall be specified. For each process, it shall be specified if and when these activities are to be performed by designated individuals or groups other than those who originally performed the work.</p> <p><i>SS Ref.: GS-R-3 para 5.7</i></p>	Assessment:
	<p>Answer: See answer to question 202.</p>	

No	Question	Module 8: Management system – Answers UM BW
205.	<p>Is each process evaluated to ensure that it remains effective?</p> <p>Each process shall be evaluated to ensure that it remains effective.</p> <p><i>SS Ref.: GS-R-3 para 5.8</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 202.</p>
206.	<p>Is the work performed in each process carried out under controlled conditions, by using approved current instructions that are periodically reviewed to ensure their adequacy and effectiveness? Are results compared with expected values?</p> <p>The work performed in each process shall be carried out under controlled conditions, by using approved current procedures, instructions, drawings or other appropriate means that are periodically reviewed to ensure their adequacy and effectiveness. Results shall be compared with expected values.</p> <p><i>SS Ref.: GS-R-3 para 5.9</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 202.</p>
207.	<p>Is the control of processes contracted to external organizations identified in the Management System? Is the Regulatory Body retaining the overall responsibility when contracting any process?</p> <p>The control of processes contracted to external organizations shall be identified within the management system. The organization shall retain overall responsibility when contracting any processes.</p> <p><i>SS Ref.: GS-R-3 para 5.10</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 202.</p>

No	Question	Module 8: Management system – Answers UM BW
208.	<p>Is there a process to control documents?</p> <ul style="list-style-type: none"> • Are documents controlled? • Are individuals assigned specifically to the preparation, review, revising and approval of documents? • Are these individuals competent to carry out this work? • Do these individuals have access to appropriate information for decision making? • Are the document users aware and use the appropriate and correct documents? <p>Documents shall be controlled. All individuals involved in preparing, revising, reviewing or approving documents shall be specifically assigned this work, shall be competent to carry it out and shall be given access to appropriate information on which to base their input or decisions. It shall be ensured that document users are aware of and use appropriate and correct documents.</p> <p><i>SS Ref.: GS-R-3 para 5.12</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The applicable documents of the management system are available from the computerised system to all staff members of the division. Changes or additions are developed by Section 32 or a specially designated project group. The changes or additions are discussed at the section head meetings. They are adopted by decision of the division head within the framework of the section head meeting. Finally, they are stored in the computerised system.</p> <p>The preparation and administration of written documents is regulated in the Chapters 3.2 und 3.3 of the organisational manual (see answer to question 220 - 222).</p>
209.	<p>Are changes to documents reviewed and recorded and are they subject to the same level of approval?</p> <p>Changes to documents shall be reviewed and recorded and shall be subject to the same level of approval as the documents themselves.</p> <p><i>SS Ref.: GS-R-3 para 5.13</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 208.</p>

No	Question	Module 8: Management system – Answers UM BW
210.	<p>Are the specifications and requirements for Regulatory Body's products (review and assessment reports, inspection and audit reports, regulatory documents, licences, certificates of approval and authorizations etc) defined in accordance with established standards? Are the requirements incorporated?</p> <p>Specifications and requirements for products, including any subsequent changes, shall be in accordance with established standards and shall incorporate applicable requirements. Products that interface or interact with each other shall be identified and controlled.</p> <p><i>SS Ref.: GS-R-3 para 5.14</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: The products of the regulatory authority and the requirements on these products are specified in the respective documents (in particular Chapter 7 of the oversight manual). These instructions in the oversight manual also include requirements e.g. based on legal regulations, rules and standards.</p> <p>In many cases, the products and decisions of the authority are based on preparatory work of authorised experts. Thus, detailed requirements are also applicable to the statements and expert opinions of the authorised experts. For acceptance of the work performed by the expert, the competent authority staff will check whether the statement or expert opinion meets the applicable requirements. Through reference to these statements by the authority, it becomes part of the regulatory assessment process and product of the authority.</p>
211.	<p>Are the products that interface or interact with each other identified and controlled?</p> <p>Specifications and requirements for products, including any subsequent changes, shall be in accordance with established standards and shall incorporate applicable requirements. Products that interface or interact with each other shall be identified and controlled.</p> <p><i>SS Ref.: GS-R-3 para 5.14</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 210.</p>
212.	<p>Are the activities for inspection, testing, verification and validation completed before the acceptance, implementation or operational use of products?</p> <p>Activities for inspection, testing, verification and validation shall be completed before the acceptance, implementation or operational use of products. The tools and equipment used for these activities shall be of the proper range, type, accuracy and precision.</p> <p><i>SS Ref.: GS-R-3 para 5.15</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: See answer to question 210.</p>	Assessment:
213.	<p>Are the tools and equipment used for inspection, testing, verification and validation of the proper range, type, accuracy and precision?</p> <p>Activities for inspection, testing, verification and validation shall be completed before the acceptance, implementation or operational use of products. The tools and equipment used for these activities shall be of the proper range, type, accuracy and precision.</p> <p><i>SS Ref.: GS-R-3 para 5.15</i></p>	Assessment:
214.	<p>Does the Regulatory Body confirm that products meet the specified requirements?</p> <p>The organization shall confirm that products meet the specified requirements and shall ensure that products perform satisfactorily in service.</p> <p><i>SS Ref.: GS-R-3 para 5.16</i></p>	Assessment: 3
	<p>Answer: Yes. The verification of fulfilment of the requirements on expert products is the task of the respectively competent staff member of Division 3. The monitoring of the quality of the products of the authority is the task of the respective superior. According to safety relevance of the decision of the authority, participation and control steps are provided in the process regulations e.g. by the legal section (Section 31).</p> <p>The principle of writing – all important decisions of the authority and internal processes at the authority are documented in written – ensures traceability (cf. Chapter 3.2 of the organisational manual). The keeping of the documents is specified in the regulations on file management (cf. Chapter 3.2 of the organisational manual).</p>	

No	Question	Module 8: Management system – Answers UM BW
215.	<p>Does the Regulatory Body ensure that products perform satisfactorily in service?</p> <p>The organization shall confirm that products meet the specified requirements and shall ensure that products perform satisfactorily in service.</p> <p><i>SS Ref.: GS-R-3 para 5.16</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 214.</p>
216.	<p>Are the Regulatory Body' products provided in such a form that it can be verified that they satisfy the requirements?</p> <p>Products shall be provided in such a form that it can be verified that they satisfy the requirements.</p> <p><i>SS Ref.: GS-R-3 para 5.17</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 214.</p>
217.	<p>Are controls used to ensure that products do not bypass the required verification?</p> <p>Controls shall be used to ensure that products do not bypass the required verification activities.</p> <p><i>SS Ref.: GS-R-3 para 5.18</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 214.</p>

No	Question	Module 8: Management system – Answers UM BW
218.	<p>Are the products identified to ensure their proper use? Where traceability is a requirement does the Regulatory Body control and record the unique identification of the product?</p> <p>Products shall be identified to ensure their proper use. Where traceability is a requirement, the organization shall control and record the unique identification of the product.</p> <p><i>SS Ref.: GS-R-3 para 5.19</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 214.</p>
219.	<p>Are the products handled, transported, stored, maintained and operated as specified, to prevent their damage, loss, deterioration or inadvertent use?</p> <p>Products shall be handled, transported, stored, maintained and operated as specified, to prevent their damage, loss, deterioration or inadvertent use.</p> <p><i>SS Ref.: GS-R-3 para 5.20</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 214.</p>
220.	<p>Are records specified in the process documentation and are they controlled? Are they readable, complete, identifiable and easily retrievable?</p> <p>Records shall be specified in the process documentation and shall be controlled. All records shall be readable, complete, identifiable and easily retrievable.</p> <p><i>SS Ref.: GS-R-3 para 5.21</i></p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Document management is subject of Chapter 3.2 of the organisational manual. It is oriented towards the requirements of file clarity, file completeness and file availability. Files are kept in paper form in the filing department of the division by specially qualified personnel. The classification system is a</p>

No	Question	Module 8: Management system – Answers UM BW
	standardised filing plan applicable in Baden-Württemberg. The retention periods are defined. For example, they ensure that the files are kept beyond the time of dismantling of the plant.	
221.	<p>Are retention times of records established to be consistent with statutory requirements and knowledge management obligations of the Regulatory Body?</p> <p>Retention times of records and associated test materials and specimens shall be established to be consistent with the statutory requirements and knowledge management obligations of the organization. The media used for records shall be such as to ensure that the records are readable for the duration of the retention times specified for each record.</p> <p><i>SS Ref.: GS-R-3 para 5.22</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 220.</p>
222.	<p>Is the media used for records suitable to ensure that the records are readable for the duration of the retention times specified for each record?</p> <p>Retention times of records and associated test materials and specimens shall be established to be consistent with the statutory requirements and knowledge management obligations of the organization. The media used for records shall be such as to ensure that the records are readable for the duration of the retention times specified for each record.</p> <p><i>SS Ref.: GS-R-3 para 5.22</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 220.</p>
223.	<p>Are suppliers selected on the basis of specified criteria and is their performance evaluated?</p> <p>Suppliers of products shall be selected on the basis of specified criteria and their performance shall be evaluated.</p> <p><i>SS Ref.: GS-R-3 para 5. 23</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: The main procurement process of Division 3 is the commissioning of experts. The experts are selected on the basis of the requirements on awarding public contracts (formal contract award procedure with clear selection criteria).</p>	Assessment: 3
224.	<p>Are purchasing requirements developed and specified in procurement documents? Is evidence that products meet the requirements available to the Regulatory Body before the product is used?</p> <p>Purchasing requirements shall be developed and specified in procurement documents. Evidence that products meet these requirements shall be available to the organization before the product is used.</p> <p><i>SS Ref.: GS-R-3 para 5.24</i></p>	
	<p>Answer: See answer to question 223.</p>	Assessment:
225.	<p>Are the requirements for reporting and resolution of non-conformances specified in the procurement documents?</p> <p>Requirements for the reporting and resolution of non-conformances shall be specified in procurement documents.</p> <p><i>SS Ref.: GS-R-3 para 5.25</i></p>	
	<p>Answer: See answer to question 223.</p>	Assessment:
226.	<p>Is information relevant to safety, health, environmental, security, quality and economic related goals communicated to individuals in the Regulatory Body and, where necessary to other stakeholders?</p> <p>Information relevant to safety, health, environmental, security, quality and economic goals shall be communicated to individuals in the organization and, where necessary, to other interested parties.</p> <p><i>SS Ref.: GS-R-3 para 5.26</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. The objectives of the division are developed by the senior management and adopted in the section head meeting. The achievement of objectives is monitored in the section head meetings. All staff members of the division receive the results of the section head meeting in form of minutes. Important issues are pointed out at the section meetings.</p> <p>Important information is regularly forwarded to the plant operators and the authorised experts. The head of the ministry is informed in the division head meetings. Information of public interest is published via the Internet or by press releases.</p>	Assessment: 3
227.	<p>Is internal communication concerning the implementation and effectiveness of the Management System in place between the various levels and functions of the Regulatory Body?</p> <p>Internal communication concerning the implementation and effectiveness of the management system shall take place between the various levels and functions of the organization.</p> <p><i>SS Ref.: GS-R-3 para 5.27</i></p>	
	<p>Answer: Yes. The issue of application and effectiveness is often dealt with in the section meetings and section head meetings.</p>	Assessment: 3
228.	<p>Are organizational changes evaluated and classified according to their importance to safety? Is each change justified?</p> <p>Organizational changes shall be evaluated and classified according to their importance to safety and each change shall be justified.</p> <p><i>SS Ref.: GS-R-3 para 5.28</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. Changes in the organisational structure of Division 3 are at the same time changes of the organisational structure of the Ministry of the Environment. They require written stipulations and justifications. The justifications deal with the effects on the fulfilment of tasks of the authority and thus also on the main task of Division 3, supervision of the safety of nuclear power plants. Such an organisational change was performed in summer 2006. The responsibility for the lead in the nuclear licensing procedure (procedure co-ordination) passed from the Ministry of Economic Affairs to the Ministry of the Environment.</p> <p>Changes concerning the individual processes in Division 3 are discussed and adopted in the section head meetings. They will be included in the organisational manual or oversight manual, respectively.</p> <p>Organisational changes are discussed in the section head meetings, accompanied in their implementation and controlled. Via the section head meetings, the staff members of the division are informed at the section meetings and through the minutes of the section head meetings.</p>	<p>Assessment: 3</p>
229.	<p>Is the implementation of organizational changes planned, controlled, communicated, monitored, tracked and recorded to ensure that safety is not compromised?</p> <p>The implementation of such changes shall be planned, controlled, communicated, monitored, tracked and recorded to ensure that safety is not compromised.</p> <p><i>SS Ref.: GS-R-3 para 5.29</i></p>	
	<p>Answer: See answer to question 228.</p>	<p>Assessment:</p>
230.	<p>Does the Regulatory Body monitor and measure the effectiveness of the Management System to confirm the ability of the processes to achieve the intended results and to identify opportunities for improvement?</p> <p>The effectiveness of the management system shall be monitored and measured to confirm the ability of the processes to achieve the intended results and to identify opportunities for improvement.</p> <p><i>SS Ref.: GS-R-3 para 6.1</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. The effectiveness of the management system is monitored by the superiors (section and division heads) within the framework of their personnel management.</p> <p>For monitoring of the effectiveness of the management system, the following indicators are applied additionally:</p> <ul style="list-style-type: none"> • Indicators on reporting to the public (e.g. number of inspections, number of reportable events, number of modification notices at the individual plants) • Indicators on process monitoring Process parameters are defined in the oversight manual. A compilation is included in the annex to the oversight manual. The process parameters serve to determine whether the process is working satisfactorily. <p>Measurable annual targets Measurable annual targets are defined for Division 3 on an annual basis. In this catalogue of objectives, such objectives are included which are of special importance regarding the achievement of the strategic objectives or regarding the intended improvements. The achievement of objectives is monitored within the framework of the closed division meeting.</p>	<p>Assessment: 3</p>
231.	<p>Does senior management and management at all other levels in the Regulatory Body carry out self-assessment to evaluate the performance of work and the improvement of the safety culture?</p> <p>Senior management and management at all other levels in the organization shall carry out self-assessment to evaluate the performance of work and the improvement of the safety culture.</p> <p><i>SS Ref.: GS-R-3 para 6.2</i></p>	
	<p>Answer: The superiors monitor the work performance of their staff. Due to the small manager-to-staff ratio (about 6 to 8 staff per section head, 6 section heads subordinate to the division head), the direct contact and close co-operation (information, signature regulations), the senior management has good insight into the daily work of its staff. Scope of work, quality of work, oversight/safety culture, difficulties and opportunities for improvements are clearly seen by the superior and considered in his personnel management.</p>	<p>Assessment: 3</p>

No	Question	Module 8: Management system – Answers UM BW
232.	<p>Are there regular independent assessments conducted regularly on behalf of senior management:</p> <ul style="list-style-type: none"> • to evaluate the effectiveness of processes in meeting and fulfilling goals, strategies, plans and objectives?; • to determine the adequacy of work performance and leadership?; • to evaluate the organization's safety culture?; • to monitor product quality?; • to identify opportunities for improvement?. <p>Independent assessments shall be conducted regularly on behalf of senior management:</p> <ul style="list-style-type: none"> – To evaluate the effectiveness of processes in meeting and fulfilling goals, strategies, plans and objectives; – To determine the adequacy of work performance and leadership; – To evaluate the organization's safety culture; – To monitor product quality; – To identify opportunities for improvement. <p>SS Ref.: GS-R-3 para 6.3</p>	<p style="text-align: right;">Assessment: 3</p> <p>Answer: Independent reviews of the <i>Land</i> government of Baden-Württemberg are conducted by the Court of Accounts Baden-Württemberg. The last reviews of Division 3 of this kind were performed in the years 1999 and 2000.</p> <p>Further independent reviews of Division 3 were conducted after the events in 2001 at the Philippsburg nuclear power plant by the Kienbaum consulting company in 2002, by an expert group (task force) of the <i>Land</i> government in the years 2002 and 2003, and by a parliamentary investigation committee in the years 2002 and 2003. In 2006, a working group of the International Committee on Nuclear Technology (Internationale Länderkommission Kerntechnik - ILK) conducted a review of the oversight activities of Division 3 on the basis of the IAEA requirements.</p>
233.	<p>Is there an organizational unit established with the responsibility for conducting independent assessments? Does the organizational unit have sufficient authority to discharge its responsibilities?</p> <p>An organizational unit shall be established with the responsibility for conducting independent assessments. This unit shall have sufficient authority to discharge its responsibilities.</p> <p>SS Ref.: GS-R-3 para 6.4</p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: See answer to question 232.</p>	Assessment:
234.	<p>Is it clear that individuals conducting independent assessments do not assess their own work? Individuals conducting independent assessments shall not assess their own work.</p> <p><i>SS Ref.: GS-R-3 para 6.5</i></p>	Assessment:
235.	<p>Does senior management evaluate the results of the independent assessments, take any necessary actions, and record and communicate their decisions and reasons?</p> <p>Senior management shall evaluate the results of the independent assessments, shall take any necessary actions, and shall record and communicate their decisions and the reasons for them.</p> <p><i>SS Ref.: GS-R-3 para 6.6</i></p>	Assessment: 3
236.	<p>Are Management System reviews conducted at planned intervals to ensure the continuing suitability and effectiveness of the Management System and its ability to enable the accomplishment of the objectives set for the Regulatory Body?</p> <p>A management system review shall be conducted at planned intervals to ensure the continuing suitability and effectiveness of the management system and its ability to enable the objectives set for the organization to be accomplished.</p> <p><i>SS Ref.: GS-R-3 para 6.7</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. The annual meeting of the senior management (closed division meeting) fulfils the task of a management system review. As preparation for the meeting, information is compiled by the participants for their areas. This information is evaluated in a workshop unit with regard to the entire division. In addition to the issues mentioned in question 237, special strengths and feedback of stakeholders are also used as input for the review of the management system.</p>	Assessment: 3
237.	<p>Do the reviews of the effectiveness of the Management System cover as a minimum:</p> <ul style="list-style-type: none"> • outputs from all forms of assessment; • results delivered and objectives achieved by the Regulatory Body and its processes; • non-conformances and corrective and preventive actions; • lessons learned from other organizations; • opportunities for improvement? <p>The review shall cover but shall not be limited to:</p> <ul style="list-style-type: none"> – Outputs from all forms of assessment; – Results delivered and objectives achieved by the organization and its processes; – Non-conformances and corrective and preventive actions; – Lessons learned from other organizations; – Opportunities for improvement. <p><i>SS Ref.: GS-R-3 para 6.8</i></p>	Assessment:
238.	<p>Do the Management System reviews identify weaknesses and obstacles and thereafter evaluate these obstacles in order to remedy the weaknesses in a timely manner?</p> <p>Weaknesses and obstacles shall be identified, evaluated and remedied in a timely manner.</p> <p><i>SS Ref.: GS-R-3 para 6.9</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: Yes. During evaluation of the achievement of objectives and assessment results, the reasons are also determined which e.g. prevented the achievement of an objective. The results of the evaluations in the management review are used in the second part of the meeting of the senior management (closed division meeting) for the update of the strategies and definition of the new annual targets and measures. Such a measure may be the optimisation of interfaces or the restructuring of a process in the management system. In 2007, for example, clarification of responsibilities and interaction between the Ministry of the Environment and the Ministry of Economic Affairs in the area of nuclear law were to be dealt with. Further important measures concerned the strategic objective “emergency preparedness competence”. The update of the strategic objectives and the definition of objectives and measures 2008 are listed in a document “Strategic Approach and Objectives”.</p>	<p>Assessment: 3</p>
239.	<p>Do the Management System reviews identify whether there is a need to make changes to or improvements in policies, goals, strategies, plans, objectives and the processes?</p> <p>The review shall identify whether there is a need to make changes to or improvements in policies, goals, strategies, plans, objectives and processes.</p> <p><i>SS Ref.: GS-R-3 para 6.10</i></p>	<p>Assessment:</p>
240.	<p>Are the causes of non-conformances determined and remedial actions taken to prevent their recurrence?</p> <p>The causes of non-conformances shall be determined and remedial actions shall be taken to prevent their recurrence.</p> <p><i>SS Ref.: GS-R-3 para 6.11</i></p>	<p>Assessment: 3</p>
	<p>Answer: Yes. The fundamental principle for quality monitoring is the so-called four-eye principle, mostly in form of control by the superior, in the written procedures (approvals, notices on indications identified and requirements, etc.). In this way, weaknesses are identified and remedied. As far as causes and aspects can be identified that might be significant for other division members and for the learning of the organisation, these are communicated at the section meetings and section head meetings. As far as during the processes need for improvement is identified, this issue will be addressed. The same applies if suggestions for further qualification result from the weaknesses.</p> <p>The findings of the superiors from their quality controls and process monitoring are incorporated in the evaluations of the management system reviews during the meeting of the senior management (closed division meeting).</p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Learning from other organisations, in particular other nuclear regulatory organisations, takes place by exchange in the technical committees and working groups of the <i>Länder</i> Committee for Nuclear Energy (LAA) and in bilateral contacts. Moreover, there are contacts to the French ASN and the Swiss HSK through the co-operation in the commissions DFK (German-French commission) and DSK (German-Swiss commission) for the safety of nuclear installations.</p> <p>A rare but important form of verification that acting of the authority conforms with legal requirements takes place by the courts. Court decisions being relevant for the work in Division 3 are evaluated and communicated in the division.</p>	
241.	<p>Are processes and products that do not conform to the specified requirements identified, segregated, controlled, recorded and reported at an appropriate level of management within the Regulatory Body?</p> <p>Products and processes that do not conform to the specified requirements shall be identified, segregated, controlled, recorded and reported to an appropriate level of management within the organization. The impact of nonconformances shall be evaluated and non-conforming products or processes shall be either:</p> <ul style="list-style-type: none"> – Accepted; – Reworked or corrected within a specified time period; or – Rejected and discarded or destroyed to prevent their inadvertent use. <p><i>SS Ref.: GS-R-3 para 6.12</i></p>	<p style="text-align: right;">Assessment:</p> <p>Answer: See answer to question 240.</p>
242.	<p>Is the impact of non-conformances evaluated, and non-conforming products and processes accepted, corrected or rejected?</p> <p>Products and processes that do not conform to the specified requirements shall be identified, segregated, controlled, recorded and reported to an appropriate level of management within the organization. The impact of nonconformances shall be evaluated and non-conforming products or processes shall be either:</p> <ul style="list-style-type: none"> – Accepted; – Reworked or corrected within a specified time period; or – Rejected and discarded or destroyed to prevent their inadvertent use. <p><i>SS Ref.: GS-R-3 para 6.12</i></p>	

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: See answer to question 240.</p>	Assessment:
243.	<p>If a concession was granted to accept a non-conforming product or process, is there a requirement for it to be authorized? If a non-conforming product or process was reworked and corrected, is there a requirement for it to be inspected to demonstrate conformity with requirements?</p> <p>Concessions granted to allow acceptance of a non-conforming product or process shall be subject to authorization. When non-conforming products or processes are reworked or corrected, they shall be subject to inspection to demonstrate their conformity with requirements or expected results.</p> <p><i>SS Ref.: GS-R-3 para 6.13</i></p>	Assessment:
	<p>Answer: See answer to question 240.</p>	Assessment:
244.	<p>Are corrective actions for eliminating non-conformances determined and implemented? Are subsequent preventive actions to eliminate the causes of potential non-conformances determined and taken?</p> <p>Corrective actions for eliminating non-conformances shall be determined and implemented. Preventive actions to eliminate the causes of potential nonconformances shall be determined and taken.</p> <p><i>SS Ref.: GS-R-3 para 6.14</i></p>	Assessment:
	<p>Answer: See answer to question 240.</p>	Assessment:
245.	<p>Is the status and effectiveness of all corrective and preventive actions monitored and reported to management at an appropriate level of in the organization?</p> <p>The status and effectiveness of all corrective and preventive actions shall be monitored and reported to management at an appropriate level in the organization.</p> <p><i>SS Ref.: GS-R-3 para 6.15</i></p>	Assessment:

No	Question	Module 8: Management system – Answers UM BW
	<p>Answer: See answer to question 240.</p>	Assessment:
246.	<p>Are potential non-conformances that could detract from the Regulatory Body's performance identified? Is this done by using feedback from other organizations, both internal and external; through the use of technical advances and research; through the sharing of knowledge and experience; and through the use of techniques that identify best practices?</p> <p>Potential non-conformances that could detract from the organization's performance shall be identified. This shall be done: by using feedback from other organizations, both internal and external; through the use of technical advances and research; through the sharing of knowledge and experience; and through the use of techniques that identify best practices.</p> <p><i>SS Ref.: GS-R-3 para 6.16</i></p>	Assessment:
	<p>Answer: See answer to question 240.</p>	Assessment:
247.	<p>Are opportunities for improvement of the Management System identified and actions to improve the processes selected, planned and recorded?</p> <p>Opportunities for the improvement of the management system shall be identified and actions to improve the processes shall be selected, planned and recorded.</p> <p><i>SS Ref.: GS-R-3 para 6.17</i></p>	Assessment: 3
	<p>Answer: Yes. Opportunities for the improvement of the management system result from</p> <ul style="list-style-type: none"> • external reviews, • internal assessments and evaluations within the framework of management system reviews, • evaluations, monitoring of international developments etc. by Section 32, • improvement proposals and feedback from division members. <p>Central projects are established as annual targets and measures in the meeting of the senior management (closed division meeting). The implementation is conducted by Section 32 or a working group. In the composition of the working group, the necessary resources (number and selection of the persons, scope and duration of the activities) are taken into consideration. These projects and further improvement projects are planned by Section 32 in the</p>	Assessment: 3

No	Question	Module 8: Management system – Answers UM BW
	<p>section's work programme. The programme includes an allocation of resources by definition of the responsible staff, of priorities and of target dates. The implementation is monitored by regular meetings and updating of the work programme at the section meetings of Section 32. The work programme also documents the completion of a measure (of a project). The documentation of completion also reflects the entire proceeding, the achievement of objectives and possible new task or follow-up projects.</p>	
248.	<p>Are actions for improvement monitored through to their completion and the effectiveness of the improvement checked? Do improvement plans include plans for the provision of adequate resources?</p> <p>Improvement plans shall include plans for the provision of adequate resources. Actions for improvement shall be monitored through to their completion and the effectiveness of the improvement shall be checked.</p> <p><i>SS Ref.: GS-R-3 para 6.18</i></p>	
	<p>Answer: See answer to question 247.</p>	<p>Assessment:</p>



3.3 Self-assessment results

3.3.1 Brief reports on the modules

3.3.1.1 Brief report on Module I - Legislative and Governmental Responsibilities

The Federal Republic of Germany is a federal state. Responsibilities for legislation and execution are assigned to the organs of the Federation and the *Länder* according to their scope of functions. Unless otherwise specified, the execution of federal law lies in principle within the sole responsibility of the federal states, the *Länder*. The "Regulatory body" is therefore composed of federal government and *Länder* government authorities. Specifications are given by provisions of the Basic Law (Constitution) of the Federal Republic of Germany.

The Federal Government has the legislative competence for the peaceful use of nuclear energy ([Article 73](#)). According to [Articles 87c](#) and [85](#) of the Basic Law, the Atomic Energy Act is executed - with some exceptions - by the *Länder* **on behalf** of the Federal Government. That means that the *Länder* Regulators are under the supervision of the Federation with regard to the lawfulness and appropriateness of their actions.

The [Atomic Energy Act](#) includes the general national regulations for protective and preventive measures, radiation protection, and disposal of radioactive waste and irradiated fuel elements in Germany and is the basis for the associated statutory ordinances.

Further to the purpose and general provisions, the Atomic Energy Act also comprises surveillance regulations, general regulations on competencies of the administrative authorities, liability provisions and provisions on the payment of fines.

With respect to the protection against the hazards from radioactive materials and to the supervision of their utilisation, the Atomic Energy Act requires that the construction and operation of nuclear installations be subject to regulatory licensing. Prerequisites and procedures for licensing and the performance of supervision are specified, including the regulations for the consulting of experts and charging of costs.

However, most of the regulations laid down here are not exhaustive and are further specified, both regarding the procedures and the substantive legal requirements, by statutory ordinances and non-mandatory regulatory guidance instruments.

There are ordinances on [Radiation Protection](#), [Nuclear Licensing Procedure](#), Protective and Preventive Measures at Nuclear Power Plants, [Nuclear Safety Officer and Reporting on Special Events](#), [Nuclear Reliability Assessment](#), [Nuclear Financial Security](#) among others.

Even more detailed are guidelines, recommendations and KTA safety standards which become binding by specification in the licence or by supervisory measures in the individual case.

The organisational structure in Germany is in full compliance with the requirements of Article 8 (2) of the Convention on Nuclear Safety.

Assessment

The tasks and responsibilities in the area of nuclear law have gradually developed since the end of the 1950s.

The fundamental basis for the licensing and supervision of the nuclear power plants was established by the constitution, the Atomic Energy Act, various mandatory ordinances and the non-mandatory guidance instruments. This basis, however, needs to be brought up to date and supplemented with respect to the technical requirements for nuclear safety.



What has also grown historically is the composition of the "Regulatory Body" as a characteristic feature of the federal structure of the Federal Republic of Germany, with concrete regulatory competences at federal and Länder level. This characteristic has its advantages with respect to "checks and balances". It also does not lead to a "double competence" of two authorities, which would not be permissible under constitutional law. However, it may lead to delayed decisions and friction loss in the context of administrative processes as well as in the adaptation to new requirements, including international ones. In this respect it is necessary that effectiveness be improved by specific measures, e.g. especially in the area of information exchange in both directions between the Federal and the Länder Regulators.

3.3.1.2 Brief report on Module II - Responsibilities and functions of the Regulatory Body

Due to the federal structure of the German state, the Regulatory Body in Germany is split between the two levels of the Federation (Bund) and the Federal States (Länder). On the federal level, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety fulfils the tasks and functions of the Federal Regulator, while on the Länder level, it is the Länder Regulators (ministries) that are responsible. In Baden-Wurttemberg, the ministry responsible is the Baden-Wurttemberg Ministry of the Environment.

The Länder execute the Atomic Energy Act with reference to the nuclear power plant operators and are responsible for supervision in the context of licensing and oversight. In this respect, they are subject to federal supervision of lawfulness and appropriateness. This authority held by the Federation does not represent a state function directed at the nuclear power plant operators but a domestic function between the two levels of the German federal state. It follows therefrom that the BMU can only effect concrete measures with respect to the operators by issuing directives in concrete individual cases to the Länder. If the Länder receive such directives, they are obliged to implement them.

The Main Regulatory Functions with reference to the operator are split between the BMU and the UM BW as follows:

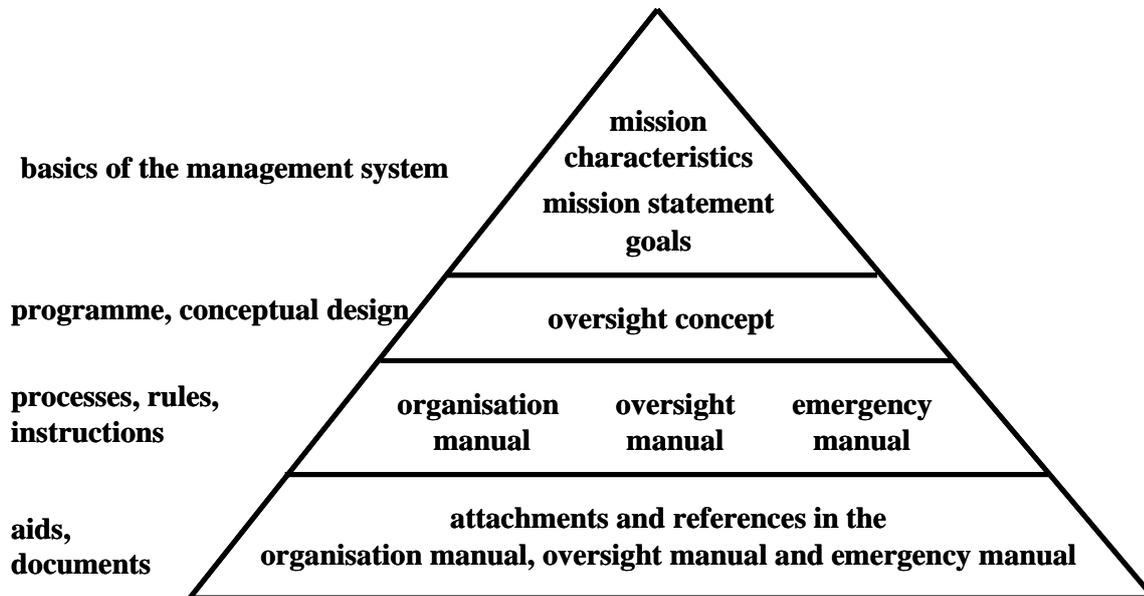


Main Regulatory Functions	Federation „Bund“ (BMU)	Federal States „Länder“ (UM BW)
Authorization (Module IV)	Supervising*	Responsible
Review and Assessment (Module V)	Supervising*	Responsible
Inspection and Enforcement (Module VI)	Supervising*	Responsible
Development of Regulations and Guides (Module VII)	Responsible	Participating

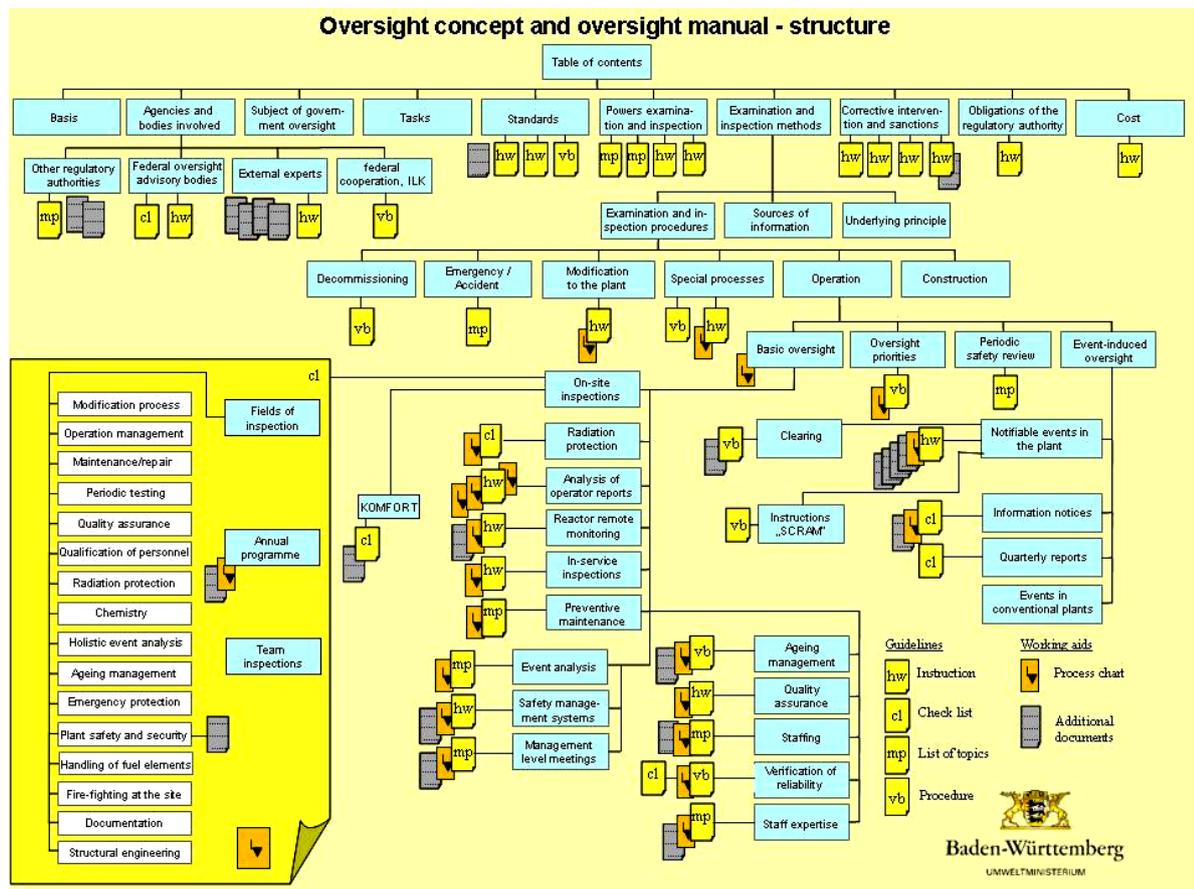
* the BMU is responsible for the standard national application of the Atomic Energy Act with regard to lawfulness and appropriateness. In this respect, the Federal Regulator shares not formal, but content-related responsibility regarding the fulfilment of the above-mentioned functions. In case of differing opinions between Federal and Länder Regulator, the Federal Regulator may enforce his opinion with regard to the above-mentioned functions by issuing directives in individual cases.

The Länder are responsible for the tasks related to "Authorization" (Module IV), "Review and Assessment" (Module V) as well as "Inspection and Enforcement" (Module VI) performed with reference to the plant operators. The tasks performed by the Federal Regulator in these areas are also described in the respective Modules. The tasks of the Federal Regulator in the area of the mandatory regulations and non-mandatory guidance instruments are outlined in the Summaries of Modules I and VII.

In Baden-Württemberg, the structured and systematic fulfilment of these tasks is ensured by a management system (for more details, cf. Module VIII). The management system was developed on the basis of the Atomic Energy Act. It can be divided into four levels, as shown in the illustration below:



The structural organisation is laid down in the [Organisation Manual](#). It is described in detail in Module III. The process organisation of overseeing the nuclear power plants is laid down in the [Oversight Manual](#). For the practical work, an electronic tool was prepared in the form of a [structogram](#), containing the contents of the Oversight Manual and providing clear on-screen access to the regulations and processes for all members of staff. The structogram looks as follows:



Good practice – Länder Regulator

Complete regulation pyramid (mission statement, guiding characteristics, Oversight Concept, Oversight Manual (AHB), Organisation Manual (OHB))

With its different levels, the management system (regulation pyramid) of the Ministry of the Environment Baden-Württemberg provides an integrated and systematic concept for the supervisory activities. In particular, the Oversight Concept and Oversight Manual are clearly structured and include precise specification for the supervisory officials. In this way, regulatory supervision of nuclear safety in Baden-Württemberg is as consistent, orderly, well-targeted and effective as possible.

Mission statement

With the Mission Statement for Division 3 of the Ministry of the Environment Baden-Württemberg, the supervisory authority gave itself a framework for laying down its values



and basic beliefs that serve as orientation for its work. The Mission Statement had been developed over several years involving all the authority staff. It is an important basis for the discharge of duties by the supervisory officials being aware of the high priority of safety in nuclear technology. The Mission Statement is an essential element of safety culture of the authority.

Oversight Concept

The Oversight Concept joins the legal bases of nuclear supervisory activities with the fields of practical supervisory activities and describes in a concise and transparent manner the proceeding of the authority and the underlying safety philosophy.

Pyramid of goals (strategic and operational goals)

With the definition of strategic overall goals and annual operational targets, the work of the supervisory authority is performed in an orderly, predictable and effective manner in terms of modern requirements on management systems (PDCA cycles).

External reviews (ILK review, Kienbaum review of organisation, task force)

External reviews, to which the Ministry of the Environment Baden-Württemberg subjects itself regularly, ensure a continuous improvement process on the basis of independent, external expert opinions on the organisation and on the management of the authority.

Regular strategic dialogue at the management level

On the side of the operators the members of the group managing boards, the plant managers and directors have a special responsibility regarding the safety of the nuclear power plants. The supervisory authority regularly conducts talks, not event-based and event-based, with these responsible persons. The talks are such that they serve an exchange of information and ideas as open as possible. They establish the mutual trust between supervisory authority and operators on the basis of which many and far-reaching safety improvements could be initiated and influence could be exercised on developments in time.



Measures for improvement:

The main improvements identified are:

- increased participation of the Länder in the international exchange of experience
- intensification of public relations

Assessment:

In Germany, the required responsibilities and functions of the Regulatory Body are fully given and are clearly assigned within the Regulatory Body.

The question of the effectiveness of the functions of the Regulatory Body as such is treated in the respective Modules.

3.3.1.3 Brief report on Module III – Organisation of the Regulatory Body (Report BMU)

The allocation of tasks between the Federal and Länder Regulators within the framework of "federal executive administration" is as follows:

- Länder Regulator: authority: directly competent licensing and supervisory authority
- Federal Regulator: supervision of the lawfulness and appropriateness of the actions of the Länder. This authority does not represent direct state supervision of the nuclear power plant operators (cf. Module 2).
- But: the scope and extent of federal regulatory measures is not static since the Federal Regulator decides on its own in individual cases
 - when and where and to which depth it will impose binding requirements on the Länder Regulator in individual cases,
 - whether it will issue a general, not directly binding requirement, or
 - whether it will come to an agreement with the Länder.



Thus, federal supervision is an essential part of the Regulatory Body, which has to be able to take informed decisions: To be able to do so, the following has to be comprehensively ensured:

- Communication with the supervisory and licensing authorities
- Information about the safety status of the installations
- Adequate expertise for general assessments but also for detailed reviews on selected issues
- Concentration of generic safety research, of national and international experience feedback at the federal body.

The federal body has to ensure this transparent information pool towards the supervisory and licensing authorities also in its “service function”.

The self-assessment revealed the following deficits:

- A significant portion of reactor safety research (20 million € per year) is performed under the responsibility of the Federal Ministry of Economics.
- There is potential for improvement regarding the information of the Federation by the supervisory authorities.
- The number of authority staff in charge of managing the authorised experts is too low in relation to the number of experts at the TSOs. BMU and UM BW hold the view that each regulatory authority is entitled to have at least one trained expert at its disposal for each of the major specialist areas (material science, systems engineering, instrumentation and control, thermal hydraulics, etc.). At present, this demand is only partly fulfilled. The ability to ask the authorised experts and the operators the right questions and to deal with key technical issues to a sufficient degree is therefore limited.
- To uphold the command over regulatory procedures it is necessary to dispose of sufficient numbers of personnel.

Good practice:

- Comprehensive evaluation of reportable events
- strong public attention

Measures for improvement:

- All important information affecting the safety of the nuclear installations as well as all important information on generic safety issues will be exchanged between Federation and Länder (without preconditions).
- A documentation system is established which is to give the entire regulatory body direct electronic access to all important technical documents
- Strengthening of the authorities to reach a sound balance of expert and authority competence.



Assessment:

The German grown system of nuclear supervision characterised by the allocation of tasks to the Federation and the Länder, is also characterised by a high review intensity in particular by authorised experts. By this, a high control density is achieved, compared with other countries, which provides the supervisory authorities and their experts with a high level of detailed knowledge about the installations to be supervised by them. The control ranges from quality assurance and documentation to comprehensive on-site inspections to determine in which way safety measures have been implemented. Moreover, the review by the Federal Regulator provides additional quality assurance in important safety issues which is further intensified by the circumstance that the federal regulator consults the RSK and its expert organisation GRS. This intensive review and the associated communication with all those involved is a strength of this system, compared internationally.

The individual problems specified in the self-assessment, resulting from the numerous interfaces, the improvable information flow and the considerable efforts due to the discussions and consultations prior to decisions of the Federal Regulator can in general largely be eliminated by the measures proposed.

From the point of view of the BMU, a self-assessment of the Länder Regulators not involved in the IRRS Mission would be of advantage for the implementation of international good practice in the German system of supervision.

3.3.1.4 Brief report on Module III – Organization of the Regulatory Body (Report UM BW)

The Baden-Wurttemberg Ministry of the Environment is the nuclear regulatory authority in the Land of Baden-Wurttemberg. The tasks of the licensing and supervisory authority are fulfilled by its Division 3 "Nuclear Supervision, Environmental Radioactivity". This Division is composed of 6 Sections:

- Section 31 Administration and Legislation
- Section 32 General Affaires of Nuclear Supervision

- Section 33 Oversight NPP I Neckarwestheim, Obrigheim
- Section 34 Oversight NPP II Philippsburg
- Section 35 Nuclear Waste Disposal and Decommissioning
- Section 36 Environmental Radioactivity and Radiation Protection

Sections 33 and 34 are assigned to the nuclear power plants. The plant-specific knowledge from inspections as well as from assessments is concentrated in these competent Sections.

Apart from Working and Project Groups that are set up on demand, there exist two permanent Working Groups spanning over all Sections:

- the MTO Group with the aim to strengthen the integrated MTO perception and to support the application of newly-developed oversight methods regarding staffing and organisation;
- the clearing agency with the task to provide quick and well-founded assessments of events in the nuclear power plants.

There are approx. 46 staff working in the Division. The large majority of them have university degrees in a scientific-technical discipline (physics, chemistry, nuclear engineering, mechanical engineering, process engineering, material sciences, etc.), 4 members of staff are legal experts, and 3 are qualified administrative clerks. For technical support, the licensing and supervisory authority consults authorised experts, predominantly TÜV SÜD Energietechnik. The cost incurred by consulting authorised experts as well as the cost of state oversight has to be borne by the licensees. As intensive specialist technical support is provided by authorised experts, care is taken that the staff of the Division itself are competent in wider areas ("generalists"). Such broad competence and thus the flexibility of staff is achieved by choosing suitable candidates when employing new staff, by training, and by job rotation. Apart from that, there is a strategy to provide expert knowledge regarding important subject areas within the licensing and supervisory authority. For some special topic areas, such as material issues, fuel elements, PSA, earthquakes, etc., certain members of staff are appointed as "Technical Co-ordinators". Their task is to monitor developments in the specialist field and support and co-ordinate the activities of the Division in this area.



In 2002, the staffing situation in Division 3 (tasks, number of staff, qualification of members of staff, etc.) was assessed by a consultancy. Based on the results of this review of the organisation, an additional 6 permanent positions were created, and some positions were filled to provide an overlap.

Current challenges are the difficulty to find suitable candidates for vacant positions and the general tendency of personnel cutbacks in the public sector.

As it is not possible to employ new staff who meet all the requirements of working at an authority, initial training and the introduction of the new personnel to their work play an important role. This is done by means of a modular training programme, plans for individual on-the-job training, and instruction by personal mentors.

Good practice:

Clearing agency

The task of the clearing agency is to deal as quickly as possible with matters which came to the knowledge of the regulatory authority and meet or may possibly meet the criteria of a reportable event according to the Nuclear Safety Officer and Reporting Ordinance (*Atomrechtliche Sicherheitsbeauftragten- und Meldeverordnung - AtSMV*). In doing so, it makes an initial technical assessment of the situation and the safety relevance of the event and discusses both the possible assignment to the reporting criteria of the AtSMV and, where required, the classification according to the International Nuclear Event Scale (INES). In this way, it supports the competent section in particular with regard to measures that have to be taken quickly.

As a fixed team of members from different sections, the clearing agency distinguishes itself by a broad technical knowledge and varied experience.

In particular, it promotes the maintenance of know-how within the division by the involvement of new staff members.



MTO (man-technology-organisation) group

The MTO group consists of members of Section 32 and the Sections 33, 34 and 35 competent for the nuclear installations. It supports the implementation of the developed and introduced oversight approaches and measures in the MTO area within the framework of the practical supervisory activities, serves as contact within the division and provides a platform for discussions of issues in this area. It monitors developments of oversight in the personnel-related and organisational area at the national and international level and disseminates new findings to the division members e.g. by further qualification and training measures. Vice versa, it uses the experiences of the plant-related sections for the further development of the oversight measures in the personnel-related and organisational area. Thus, the MTO group serves the dovetailing of the conceptual and operational level and, in this way, promotes the integrated oversight approach, i.e. an approach comprising man, technology and organisation (MTO).

Framework agreements with authorised experts

The commissioning of authorised experts such as TÜV SÜD ET by means of framework agreements allows the flexible and at the same time effective involvement of the experts. The time and effort involved for the authorities concerning questions of contracting is minimised in favour of actually dealing with technical issues instead. For the authorised experts, the framework agreements represent a basis for reliable planning, so that they can guarantee sufficient human resources and comprehensive know-how in the long run.

On-the-job training programme for new members of staff

For new employees of the authority, a comprehensive on-the-job training programme is provided within the first two years. Besides administrative and inter-disciplinary courses, it covers in particular special courses in the area of nuclear engineering and in radiation protection. The technical courses are normally carried out by research institutions or expert organisations. Furthermore, an experienced mentor is named for every new employee during the first half year to pass on knowledge from experience (know-how transfer beyond pure factual knowledge).



Technical co-ordinators

The appointment of individual members of staff as technical co-ordinators for special topics such as fire protection, fuel elements, PSA and others serves for the preservation and intensification of the know-how of the licensing and supervisory authority in these fields. The internal regulations at the Baden-Württemberg Ministry of the Environment enable the technical co-ordinators to deal in depth with the specialist area and ensure that this knowledge is included in the supervisory and licensing procedures.

Measures for improvement:

There are the following possible measures for improvement in the area of organisation:

- gaining new staff to replace retired personnel and to ensure that there is at least one trained expert in the respective main specialist areas (material sciences, systems engineering, instrumentation and control, thermal hydraulics, etc.) available at the authority,
- strengthening national and international co-operation.

3.3.1.5 Brief report on Module IV – Authorization

The granting of licences and approvals and the issuing of notifications relating to the nuclear power plants is the task of the competent nuclear licensing and supervisory authorities of the Länder; in Baden-Württemberg, the competent authority is the Baden-Württemberg Ministry of the Environment (UM). The BMU gets involved if a federal regulatory check seems advisable and communicates a statement to the Länder Regulator.

The legal basis for the granting of licences and for notifications is formed by the Atomic Energy Act ([AtG](#)), the Radiation Protection Ordinance ([StrlSchV](#)), the Nuclear Licensing Procedures Ordinance ([AtVfV](#)) and the Nuclear Reliability Verification Ordinance ([AtZüV](#)).



The UM grants licences and issues notifications with respect to the nuclear power plants regarding:

- essential changes to the nuclear power plants, based on [§ 7 AtG](#),
- the decommissioning of nuclear power plants, based on [§ 7 AtG](#),
- the handling of radioactive materials, based on [§ 7 StrISchV](#),
- the clearance of radioactive materials for disposal, based on [§ 29 StrISchV](#) (see internal Clearance Guideline),
- the proof of the technical qualification of the radiation protection personnel, based on [§ 30 StrISchV](#) (see [AHB 7.3.2.1.14](#)),
- the personnel working in the nuclear power plants (reliability verification), based on [AtZüV](#) (see [AHB 7.3.2.1.13](#)).

At the level below licensing and notification, regulatory approvals with respect to the nuclear power plants are granted regarding:

- non-essential changes to the nuclear power plants; in Baden-Württemberg, a corresponding procedure is specified in the "Land-wide standard modification procedure" (see [AHB 7.3.4./1](#)),
- the restart of a plant following the annual overall maintenance inspection and refuelling outage or after longer plant standstills as well as regarding the loading of fuel element transport casks; such approvals are described in the corresponding licensing requirements and in various chapters of the AHB;
- the proof of the technical qualification of the responsible personnel, based on [§ 7 AtG](#) in combination with a guideline (see [AHB 7.3.2.1.14](#)).

Furthermore, additional requirements may be ordered by the competent authority (based on [§ 17 AtG](#)).

The licensing procedures are carried out by the same persons who are also responsible for the oversight of the plant. In a nuclear licensing procedure according to [§ 7 AtG](#), the UM carries out the formal execution of the procedure and the safety-related assessment of the project. An authorised expert is consulted in connection with the safety-related assessment. The procedure as well as the steps and examinations to be carried out in a

licensing procedure are described in various documents. These documents have a similar function as the AHB has regarding oversight.

The "Land-wide standard modification procedure" contains a description how modifications in nuclear power plants which do not require nuclear licensing may be performed. The procedure differentiates between several different modification categories in which the authority is involved to different degrees.

Good practice – Länder Regulator:

Steering/monitoring of licensing procedures by the Environment Ministry

Monitoring sometimes already begins prior to the actual application and continues until the granting of the licence. In the case of more complex licensing procedures, status talks are held regularly with the operator and the authorised experts consulted. This way, the authority can make sure that its interests are taken into account in the procedure at an early stage, and it can steer the assessment, depending on intermediate results, and can altogether make an early start on the opinion-forming process for the licensing decision.

Licensing and supervision by one single authority

(Review and assessment as well as inspection and enforcement are fulfilled by one single organisation)

Experience from supervision is considered in the licensing procedure, which has positive effects e.g. on the formulation of requirements. The good technical knowledge of the plant, its organisation and its management that that has been gained as a result of its supervision are highly useful for decision-making in the licensing procedure.

Modification procedure

A step-wise procedure is provided for any changes which do not require licensing according the Atomic Energy Act. This procedure enables the supervisory authority to monitor modifications before and during their execution from a regulatory point of view.

Nuclear Licensing Procedure Ordinance (AtVfV)

The Nuclear Licensing Procedure Ordinance (AtVfV) includes differentiated provisions for the performance of nuclear licensing procedures and thus contributes to a systematic and structured regulatory control of nuclear safety in the nuclear licensing procedure.

Measures for improvement – Länder Regulator:

- Revision of the categories in the "Land-wide standard modification procedure".

3.3.1.6 Brief report on Module V - Review and Assessment

Legal regulations on the regulatory supervision are included in the Atomic Energy Act (§ 19 AtG). The performance of regulatory supervision, thus also the performance of reviews and assessments, is the task of the respectively competent nuclear regulatory authority of the *Länder* (e.g. for nuclear installations in Baden-Wurttemberg the Baden-Wurttemberg Ministry of the Environment). The task of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is to review if required in individual cases the supervision performed by the respectively competent Länder Regulator for lawfulness and appropriateness within the framework of federal executive administration.

The way of performance and the scope of reviews and their assessment and documentation are described and specified in internal regulations ([Mission Statement](#), [Oversight Concept](#), [Oversight Manual](#)) of the Länder Regulator, in the nuclear non-mandatory guidance instruments (Handbook on Nuclear Safety and Radiation Protection (*RS-Handbuch*) and Safety Standards of the Nuclear Safety Standards Commission (KTA)) and in the licences of the respective nuclear installations. The licensee's prime responsibility for the safety of his plant remains unaffected by this.

The procedure of federal regulatory review and assessment is laid down in the QM process description "[Federal supervision – supervisory procedure](#)" (*Bundesaufsicht-Aufsichtsverfahren*).



The review and assessment of the respective plant conditions is performed according to the state of the art in science and technology.

In addition to on-site inspections, the review and assessment of information is another core activity of the Länder Regulator. Assessments are carried out whether the plants are operated in compliance with the legal provisions, the non-mandatory guidance instruments and the stipulations in the licences. Altogether, the subject of the reviews is whether the plants are operated in a sufficiently safe manner. In particular, the licences stipulate for each plant by procedure-regulating ancillary provisions about which facts and circumstances the Länder Regulator is to be informed regularly or on the basis of a particular event.

For this purpose, documents are to be submitted to the authority for the different areas of oversight, as for example:

- plant modifications
- reportable events and operating experience feedback
- overall maintenance inspection and refuelling outages, and
- personnel planning and personnel development.

Due to the particular significance of reportable events, these are subjected to review and assessment at the Baden-Wurttemberg Ministry of the Environment by a group of authority staff (clearing agency).

The number of authority staff in charge of managing the authorised experts is too low compared with the number of experts at the TSOs. BMU and UM BW hold the view that each regulatory authority has to have at least one trained expert at its disposal for each of the major specialist areas (material science, systems engineering, instrumentation and control, thermal hydraulics, etc.). The ability to ask the authorised experts and the operators the right questions and to deal with key technical issues to a sufficient degree is therefore limited.

An integrated assessment of the safety status of the plants is conducted within the framework of the safety review (SR) to be performed every ten years pursuant to [§ 19a of the Atomic Energy Act](#). For the performance of a SR, national guidelines are available



which – just like other German non-mandatory guidance instruments – are partly in need of updating. For the evaluation of the SR, the Länder Regulators have set themselves a limit of two years.

The BMU is entitled to be informed as soon as possible about the safety reviews submitted according to [§ 19a AtG](#), thereby to be provided with an overview of the safety status of the nuclear power plants, and also to evaluate these SR as part of federal supervision.

The documents submitted are reviewed by the competent Länder Regulator. They are reviewed for completeness and correctness regarding the fulfilment of safety-relevant aspects. This review is carried out with the support of authorised experts according to [§ 20 of the Atomic Energy Act](#) commissioned by the Länder Regulator. The authorised experts and the authority perform their reviews on the basis of the state of the art in science and technology and, where appropriate, carry out their own calculations or verify the operator's information on site.

Good practice – Federal Regulator:

In addition to the reviews to be performed within the framework of the regulatory procedures of the Länder Regulator, the BMU, in individual cases and depending on the relevance of the issue - carries out its own reviews and assessments on receiving knowledge about an event in a nuclear installation or findings on circumstances that need clarification and prepares – if the circumstances require – e.g. an Information Notice..

This way of proceeding leads to

- the enhancement of the safety of the plant (removal of the deficiency)
- the enhancement of the safety of all plants (review of applicability to other plants)
- the investigation and solution of generic safety issues.

Safety issues are discussed in detail with participation of authorised experts and the Reactor Safety Commission (RSK).



Good practice – Länder Regulator:

Clearing agency

The task of the clearing agency is to deal as quickly as possible with matters which came to the knowledge of the regulatory authority and meet or may possibly meet the criteria of a reportable event according to the Nuclear Safety Officer and Reporting Ordinance (*Atomrechtliche Sicherheitsbeauftragten- und Meldeverordnung - AtSMV*). In doing so, it makes an initial technical assessment of the situation and the safety relevance of the event and discusses both the possible assignment to the reporting criteria of the AtSMV and, where required, the classification according to the International Nuclear Event Scale (INES). In this way, it supports the competent section in particular with regard to measures that have to be taken quickly.

As a fixed team of members from different sections, the clearing agency distinguishes itself by a broad technical knowledge and varied experience.

In particular, it promotes the maintenance of know-how within the division by the involvement of new staff members.

Reportable events and experience feedback

Events in domestic and foreign nuclear power plants or conventional power stations are systematically examined in a regulated procedure in Germany with regard to whether they can be applied to other installations. To do so, the operators are provided with the corresponding information by the BMU via the Baden-Württemberg Ministry of the Environment (Information Notices). The operators will then check on the licensing requirements whether the event can be applied to their plants and report the results to the regulatory authority, where the corresponding reports are evaluated.

Performance of overall maintenance inspection and refuelling outage

Prior to the start of an overall maintenance inspection and refuelling outage, a list of the planned outage activities is presented to the Environment Ministry and co-ordinated with it. During the outage, the work is closely monitored, with support by the authorised

expert. The status of the outage activities is communicated during regularly held status talks. Prior to the restart, the operator sends a final report to the Environment Ministry, dealing in particular with deviations and special observations. Consent to the restart is given by the authority.

Ageing management

The main task of ageing management is to record any possible ageing effects and to prevent the negative consequences for safety in a well-targeted and effective manner. Ageing management is therefore attributed a specially dedicated inspection area in the [Oversight Manual](#) (AHB). The operator submits reports to the supervisory authority, among them a framework report on ageing management ("umbrella document"), basic faculty- and site-specific reports as well as annual status reports. In addition, the circumstances identified and the knowledge gained from the implementation of the ageing management processes are discussed in annual technical discussions.

Manpower and personnel development in the NPPs

Regular reports on the manpower and personnel development in the NPPs, which is one of the licensing requirements, provides the regulatory authority with an overview of the changes in manpower. This measure was introduced to prevent staff reductions at the expense of safety. Having this information, the regulatory authority can react in keeping with the requirements should any undesirable developments be observed.

Measures for improvement:

Federal Regulator:

The regulatory effectiveness and competence of the regulatory body should be improved by the following measures:

- All important information affecting the safety of the nuclear installations as well as all important information on generic safety issues shall be exchanged between Federation and Länder (cf. Module 3 – BMU).
- A documentation system is established which is to give the entire regulatory body direct electronic access to all important technical documents



- an annual common strategic programme for the treatment of generic safety issues determined by the Federal and Länder Regulators.

Länder Regulator:

- Optimisation of the IT tools for the documentation of the reviews and assessments performed.
- Gaining new staff to replace retired personnel and to ensure that there is at least one trained expert in the respective main specialist areas (material sciences, systems engineering, instrumentation and control, thermal hydraulics, etc.) available at the authority.

3.3.1.7 Brief report on Module VI - Inspection and Enforcement

Legal regulations on the regulatory supervision are included in the Atomic Energy Act (§ 19 AtG). The performance of regulatory supervision, thus also the performance of inspections, is the task of the respectively competent *Länder Regulator* (e.g. for nuclear installations in Baden-Württemberg the Ministry of the Environment Baden-Württemberg).

The way of performance and the scope of inspections are described and specified in internal regulations (mission statement, oversight concept, oversight manual) of the supervisory authority. The primary responsibility of the licensee for the safety of his plant remains unaffected by this.

An annual inspection programme is set up and performed for each unit of a nuclear power plant. The annual inspection programme comprises all inspection areas relevant for supervision. Within the framework of on-site inspections, organisational and human factors aspects are also analysed by the authority by means of the tool KOMFORT (Catalogue for recording organisational and human factors during on-site inspections - *Katalog zur Erfassung organisationaler und menschlicher Faktoren bei Inspektionen vor Ort*). There are announced and unannounced inspections. All inspections and inspection results will be documented and assessed. The licensee is directly informed about the inspection result within the general framework of the supervisory visits. The annual inspection programme is evaluated every year (PDCA cycle).



Moreover, special occasions require additional on-site presence of the authority. So, further plant inspections are carried out, e.g., in case of reportable events, in connection with the annual inspection or within the framework of oversight priorities. The total time consumed for regulatory oversight activities at the site is about 1 to 2 man days per week and nuclear power plant.

In addition to on-site inspections, the supervisory authority has the possibility to monitor selected important plant parameters around the clock online by means of the Nuclear Reactor Remote Monitoring System (KFÜ).

On-site inspections by the supervisory authority are supplemented by plant walkdowns and controls of operational management which are performed by an expert consulted on behalf of the supervisory authority on the basis of an annual schedule specified by the authority.

There are different possibilities of corrective intervention and of sanctions within the framework of federal supervision. The regulatory measures range from the different possibilities of informal and co-operative administrative action to ordering of certain protection measures for averting danger up to interim or even final cessation of the operation of a nuclear installation. Moreover, the supervisory authority tries to achieve safety improvements within the framework of a constructive and critical dialogue with the operators.

Good Practice – Länder Regulator:

Implementation of the MTO (man-technology-organisation) approach for on-site inspections (KOMFORT)

The KOMFORT oversight tool (Catalogue for recording organisational and human factors during on-site inspections - *Katalog zur Erfassung organisationaler und menschlicher Faktoren bei Inspektionen vor Ort*) is used to obtain indicators from the area of human resources and organisation within the framework of oversight directly on site. The continuous collection of information in the area of human resources and organisation serves to recognise any negative developments in this area wherever possible in the way

of an early warning system and to enable the authority to take the necessary action at an early stage.

Remote monitoring system for nuclear reactors (KFÜ)

The KFÜ, which has been devised as a complex measuring, information and decision-making system, records immission and emission data as well as data from the plant itself. The KFÜ systems are similarly structured for all plants in Germany. They enable the respective Länder Regulators to collect, directly and up to date, data on the operation and the state of the plants as well as on any radioactive releases into the environment, independent of the operators. Via modern data transfer technology, these data are transmitted online to the Länder Regulators, where they can immediately be evaluated. The KFÜ is accessible to all staff members at the Nuclear Supervision Division of the UM BW.

Integrated event analysis (GEA)

Events occurred at NPPs are analysed in a systematic and integrated manner with the aim to learn from them and to further improve safety. For this purpose, the factors from the areas man, organisation and technology contributing to the event are determined according to a systematic and traceable method (safety through organisational learning (SOL)). The introduction of such a method at the operators' and a structured regulatory control of application considering the specific features of the method are regarded as good practice.

Systematic inspection programme (regarding contents and procedures) for each plant

A systematic annual inspection programme, covering all inspection areas relevant for oversight, is set up, performed and evaluated for each nuclear installation. The annual inspection programme is subject to a PDCA cycle. It is supplemented by the inspection activities to be performed within the framework of the reactive oversight (e.g. handing of reportable events).



Support of the activities of the inspectors (**Oversight Manual (AHB)**, **Organisational Manual (OHB)**)

The regulations within the Division, in particular the Oversight Manual, provide support to the inspectors in planning and also in the performance and documentation of regulatory visits/inspections. The inspectors are supported both with regard to contents and methods. The regulations within the Division are electronically available online to all staff members in the latest version. Graphical process representations as well as references and links to relevant documents are realised.

Measures for improvement – Länder Regulator:

Increased use of probabilistic methods through a risk-informed approach (use of PSA results for inspection planning)

3.3.1.8 Brief report on Module VII - Development of Regulations and Guides

The further development of nuclear law and the associated legal provisions, general administrative provisions and guidelines issued on its basis lies within the responsibility of the regulatory body.

The following figure shows the hierarchy of the national rules and regulations, the authority or institution issuing them, and their degree of bindingness.

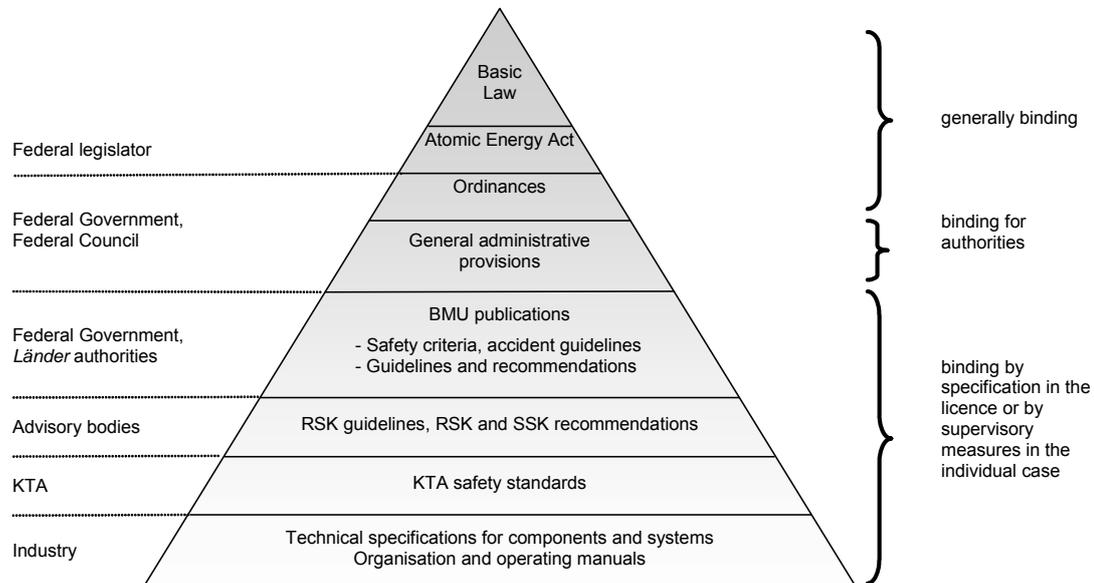


Figure: Regulatory Pyramid

The issues '[Basic Law](#)', '[Atomic Energy Act](#)', 'Ordinances' and 'General administrative provisions' have been covered by Module I.

A comprehensive description of the German situation and explanations relating to the regulations at the different levels of detail and bindingness of the German nuclear regulations are provided in the German [CNS Report of 2008, Chapter 7 \(2i\)](#). For further reference, this source should be consulted.

Good Practice:

During the process of drafting the "[Safety Requirements for Nuclear Power Plants](#)", a comprehensive comparison was made of the new German requirements with the existing IAEA fundamentals and the requirements NS-R 1, NS-R-2, NS-R-3 and GS-R-3. This way, it was shown for each individual requirement of the German regulations from which corresponding IAEA requirement it was derived.

Furthermore, a comprehensive participation process was carried out, comprising e.g. the publication of all new draft regulations on an [Internet platform](#) and an open discussion of all comments received, which totalled more than 8000. To achieve the highest possible



degree of transparency, all comments and the associated replies were also published on the Internet platform. This platform is freely accessible. The draft regulation texts have also been published in English on the Internet platform and are thus available to international experts, too. A discussion process involving all stakeholders was started and continued in two workshops. The Federal and Länder Regulators have been discussing the new requirements intensely over the past 1 ½ years.

This comprehensive and transparent participation process and the detailed comparison with the requirements of the IAEA and the WENRA Reference Levels is regarded as a good practice.

Development of KTA safety standards

At the level of the non-mandatory guidance instruments, the Nuclear Safety Standards Commission (KTA) develops nuclear safety standards in a consensual process. The KTA comprises all relevant institutions dealing with nuclear safety (authorities, authorised experts, research institutions, manufacturers and operators). Due to the regular review and amendment of the standards, every five years at the latest, the KTA safety standards are adapted to the state of the art in science and technology. Although the KTA safety standards have no legally binding effect, they still have a far-reaching binding effect in practice due to their development process (in consensus) and degree of detail.

Measures for improvement – Federal Regulator:

To obtain one National Standard of Safety Requirements the following measures for improvements are under way:

- Modern standard criteria for reviewing the installations shall be available (safety requirements).
- Basic safety principles and requirements shall be laid down in an ordinance.
- The Regulatory Body shall strengthen its steering function in the drafting of KTA Safety Standards on the basis of the “Safety Requirements for Nuclear Power Plants”.
- The Safety Review (PSR) Guidelines (Fundamentals and Safety Status Analysis) shall be updated on the basis of the “Safety Requirements for Nuclear Power Plants”.

Assessment:

Over the past 30 years, a large number of individual regulations have been established, forming, like a mosaic, a comprehensive but often also very detailed body of rules. The non-mandatory rules will only become binding once they have been directly considered within the framework of a plant licensing procedure and will only be mandatory for the plant in question.

This mosaic-like body of German nuclear regulations now has to be seen alongside the self-contained body of IAEA requirements – and it is therefore one of the central tasks of the “Safety Requirements for Nuclear Power Plants” to standardise and systematise the German regulations and to bring them in line with the international standard.

3.3.1.9 Brief report on Module VIII – Management System for the Regulatory Body (Report BMU)

The regulatory body at the federal level has instruments for the management of affairs adjusted to the characteristics of ministerial administration.

The work of the regulatory body, which at the federal level comprises the predominant part of Directorate-General RS of the Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is based on general regulations and requirements. These include, in particular,

- the general and special requirements of the Basic Law (GG) (binding effect of law and justice, [Art. 20 \(3\) GG](#); for the execution by the *Länder* on federal commission (federal executive administration), [Art. 85 GG](#)),
- the acts (in particular the Atomic Energy Act) and ordinances based on them,
- the common rules of procedure of the federal ministries and the rules of procedure of the BMU,
- the schedule of responsibilities of the BMU.

Within this framework, the work is determined in particular by

- the politically defined objectives of the BMU, and



- the quality management system introduced in the directorate-general which includes strategic objectives, the determination of annual targets, their planning and control as well as monitoring,
- stipulations based on decisions on documents drawn up for the minister/state secretaries and in the meetings of the directorate and division heads of Directorate-General RS.

Within the central field of work of federal supervision of nuclear regulatory authorities of the *Länder*, the processes are dealt with, apart from a few exceptions, on the own responsibility of the Directorate-General RS of the BMU; the head of the department is regularly informed about these technical processes. In individual cases of high significance, the minister or the state secretary may directly perform regulatory functions (e.g. meetings within the framework of federal supervision at the ministerial level; during the legislative period since November 2005, such a meeting at the management level has not been held yet).

The part of federal supervision dealt with on the own authority of the Directorate-General RS of the BMU is generally suitable for setting up a comprehensive “plan, do, check, act” management system that goes beyond quality management. For this purpose, a federal supervision manual shall be introduced; on this issue, preparatory work has already been performed.

For the other areas within the responsibility of Directorate-General RS more subjected to general provisions, such as the common rules of procedure of the federal ministries (e.g. preparation of law-making, international co-operation) the establishment of a special “plan, do, check, act” management system, however, is not appropriate.

Good practice:

It is, in particular, regarded as good practice that prior to major decisions there is an intensive communication between the work units concerned and the senior management. Moreover, Directorate-General RS supplemented the general instruments for managing the affairs at the BMU by an own quality management system.



Measures for improvement:

The instruments for the management of affairs of the regulatory body at the federal level shall be further developed in particular with regard to the following objectives:

- The number of personnel of the federal regulator including support of the Federal Office for Radiation Protection (BfS) shall be enhanced by implementing a 3-year plan for 2009-2011.
- A human resources development concept shall be prepared for and by the federal regulator (on the basis of the 3-year-plan for 2009-2011 to improve staffing levels as approved by the senior level at the federal regulator in 2008).
- The existing QM system will be reviewed annually in a report by the QM officer. Continual monitoring of QM will take place regularly during directorate heads meetings.
- A federal supervision manual will be available by the end of 2009, defining general objectives and policies, principles and basic processes, taking into account the co-operation/interaction with the *Länder* authorities.

Assessment:

The questions of Module VIII are mainly customised to the discharge of duties by an autonomous administrative authority but not to a ministry. The introduction of elements of a “plan, do, check, act” management system in terms of numerous requirements of Module VIII will also in future only be possible for the area of federal supervision of nuclear power plants because it mainly concerns administrative tasks. For the typical ministerial tasks of Directorate-General RS (in particular preparation of law-making, international co-operation) such an amendment of the general “management regulations” (common rules of procedure of the federal government, [rules of procedure of the BMU](#), schedule of responsibilities of the BMU, quality management of Directorate-General RS) is not appropriate because these internally binding general regulations cover the discharge of duties in this area to a large extent.



3.3.1.10 Brief report on Module VIII – Management System for the Regulatory Body (Report UM BW)

The management system that is applied in Division 3 of the Ministry of the Environment is tailored to the needs and the targets of a nuclear licensing and supervisory authority. The central elements of a management system, such as the Principles/Mission Statement, its binding character for all members of staff, the allocation of responsibilities, the definition of interfaces, regulations for the important processes, for communication, for reviews and for the derivation of improvements are described in the Manuals of Division 3 ([Organisation Manual](#), [Oversight Manual](#), Emergency Manual). Nuclear safety takes up a prominent role.

The [structure of the management system](#) can be represented in the form of a pyramid. At the top there are the main features of the management system, with the definition of the task of the authority (mission), with guiding characteristics of its work (characteristics), with the [Mission Statement](#) as framework for its actions, and the definition of targets. At the next level further below is the oversight concept. It represents the programmatic basis for the regulatory authority's oversight activities and describes the legal boundary conditions of state actions as well as the safety philosophy and the methodical approach of the regulatory authority. At the next level there are the regulatory authority's manuals, procedural regulations, provisions and instructions for practical work. The general and organisational regulations can be found in the Organisation Manual, those regarding oversight activities in the Oversight Manual, and the regulations applying in nuclear emergencies in the Emergency Manual. The lowest level is composed of different aids and documents. These can be found in the references of the Manuals or in their appendices.

The management system was developed specially for the Division by the Division itself. It is a "grown structure" that aims at the special characteristics of the licensing and supervisory authority, at the size of the Division, and at the processes and operations "in need of regulation". The management system was developed step by step. It has the support of the senior management. The defined processes and operations are



understood and applied by the personnel. The management system undergoes further development and continual improvement.

Good practice:

Continual development of a management system

The stepwise development of the management system (oversight concept, mission statement, manuals, objectives, indicators) allows an extensive discussion within the Division and large participation of the Division members. In this way, the acceptance of new regulations was increased. Due to the stepwise proceeding, the awareness of the necessity of continuous improvement and of a learning organisation is kept alive.

Oversight Manual (AHB) und Organisation Manual (OHB)

The Oversight Manual (AHB) and the Organisation Manual (OHB) present detailed documents available to the Division members which comprise the scope of activities.

Measures for improvement:

Future steps of developing the management system further concern

- the completion of processes, process descriptions and process indicators
- the inclusion of process descriptions of management processes in the Organisation Manual
- the development of the Organisation Manual into a Management Manual
- the expansion of the electronic document filing system.

In addition, measures are to be devised and implemented with the aim to promote safety culture (oversight culture) on the part of the Länder regulatory authority and to subject this safety culture to a self-assessment process.

3.3.2 Action Plans

3.3.2.1 Action Plan BMU

Question	Nr.	Reg. Pol. Issues	Context	Action / Aim	Responsibilities, actors	Deadline
5, 6, 10 18, 47 59, 94 98 123 179, 180, 181	1.	Human resources and knowledge management	Federal Regulator	The number of personnel of the Federal Regulator including support of Federal Office for Radiation Protection (BfS) shall be enhanced by implementing a 3-year plan. Each regulatory authority has at least one trained expert at its disposal for each of the major specialist areas (material science, systems engineering, instrumentation and control, thermal hydraulics, etc.).	Director General RS and Director RS I	2009 - 2011
187 188 189	2.	Human resources and knowledge management	Federal regulator HR development	A human resources development concept shall be prepared for and by the Federal Regulator (on the basis of the graduated scheme for 2009-2011 to improve staffing levels as approved by the senior level at the Federal Regulator in 2008).	AL, UAL's, ZG I 1, ZG I 3	2009
96 193	3.	Human resources and knowledge management	Federal regulator Further qualification	Creation of a nuclear academy at GRS. Actions: <ul style="list-style-type: none"> A catalogue of requirements for the technical qualification of authority personnel is available. A "nuclear academy" training centre for authority personnel and experts is to be set up in co-operation with GRS. The nuclear academy shall specialise in issues of supervision and assessment. The academy shall be open to the Länder regulatory authorities. This training programme shall include different training stages (Land, Federation, expert, 	BMU BMF Budget committees GRS etc. open at Division level AL, UAL's, ZG I 1,	2011

Question	Nr.	Reg. Pol. Issues	Context	Action / Aim	Responsibilities, actors	Deadline
				international) <ul style="list-style-type: none"> For personnel with technical qualification, a Senior Trainee Programme shall be defined at the end of each year. 	ZG I 3	
81,82	4.	Enhancing regulatory effectiveness and competence	Federal Regulator nuclear safety research	The responsibility on federal level for research on nuclear safety issues shall be with the Federal Regulator.	RS I 2 Actors: Fed. Gov.	Jan. 2009
68 CNS	5.	Enhancing regulatory effectiveness and competence	Federal regulator transparency	General objectives, policies and principles shall be published on the BMU homepage. Decisions by the Federal Regulator shall be published on the Internet. Documents which are important for nuclear safety shall be published.	RS, RS I Länder	2008
17 85 150 152 CNS	6.	Enhancing regulatory effectiveness and competence	Regulatory Body Standard Safety Requirements	Modern standard criteria for reviewing the installations are available (safety requirements). Basic safety principles and requirements are laid down in an ordinance.	RS I 1 RS I 7 Länder	2008
150 154	7.	Enhancing regulatory effectiveness and competence	Regulatory Body Standard Safety Requirements	The Regulatory Body shall strengthen its steering function in the drafting of KTA Safety Standards on the basis of the "Safety Requirements for Nuclear Power Plants". The Safety Review (PSR) Guidelines (Fundamentals and Safety Status Analysis) shall be updated on the basis of the "Safety Requirements for Nuclear Power Plants" by 2009.	RS I 7 Länder	2010 2009

Question	Nr.	Reg. Pol. Issues	Context	Action / Aim	Responsibilities, actors	Deadline
25	8.	Enhancing regulatory effectiveness and competence	Regulatory Body Decommissioning Dismantling	The regulations applied in Germany shall be better adapted to the principles of adequacy, liquidity and transparency of financial resources (taking into account to COM-Recommendation No. C (2006) 3672 of 24 October 2006).	RS III 1 Actors: BMW I	2010
13 47 83 85 86 98 119 CNS	9.	Enhancing regulatory effectiveness and competence	Regulatory Body Co-operation Federation and Länder	All important information affecting the safety of the nuclear installations as well as all important information on generic safety issues will be exchanged between Federation and Länder. A documentation system is established which is to give the entire regulatory body direct electronic access to all important technical documents.	RS I 3, RS I 5 (Knowledge Management) Länder	2008 2010
124	10.	Enhancing regulatory effectiveness and competence	Regulatory Body Co-operation Federation and Länder	An annual common strategic programme for the treatment of generic safety issues will be determined by the Federal and Länder Regulators.	RS I 3 Länder	2009
84 87 91 97	11.	Enhancing regulatory effectiveness and competence	Regulatory Body	All essential inspections on-site shall be physically attended and led by staff of the supervisory authorities.	RS I 3 Länder	2011
84	12.	Enhancing regulatory effectiveness and competence	Regulatory Body TSO	Regulations to ensure the independence and quality of the work of authorised experts.	RS I 1; RS I 3; Länder	2010
170 174 199 205	13.	Enhancing regulatory effectiveness and competence	Federal Regulator	The existing QM system will be reviewed annually in a report by the QM Officer with respect to <ul style="list-style-type: none"> • completeness • application and related problems 	RS I 1/QMR	annually resp. every 2 months

Question	Nr.	Reg. Pol. Issues	Context	Action / Aim	Responsibilities, actors	Deadline
206 247 248				The resulting proposed changes shall be implemented during the following year. Continual monitoring of QM will take place regularly during Directorate Heads meeting.		
45 ,46,71 158, 159 166 ,168 170, 174 196 210-219 227 236-239 247, 248	14.	Enhancing regulatory effectiveness and competence	Federal Regulator supervision	A Federal Supervision Manual will be available by the end of 2009, defining <ul style="list-style-type: none"> • general objectives and policies • Principles • Basic Processes taking into account the co-operation/interaction with the Länder authorities.	RS I 3	2009
13	15.	Enhancing regulatory effectiveness and competence	Federal Regulator supervision technical infrastructure	The Federal regulator's technical infrastructure shall be improved by: <ol style="list-style-type: none"> 1) state-o-the-art software and hardware; specialist software 2) doing away with the limit on the amount of data that can be sent in e-mails 	RS I 3, ZG I Actors: IVBB	2011
76 CNS	16.	Management of safety	Federal Regulator	The Federal Reguator reviews whether safety management systems (SMS) have been implemented in all German NPPs.	RS I 3 Operators Länder	2009

Question	Nr.	Reg. Pol. Issues	Context	Action / Aim	Responsibilities, actors	Deadline
59, 67 CNS	17.	Use of insights from operation experience feedback (OEF) into the regulatory process	Regulatory Body Co-operation Federation and Länder	Information Notices (WL) – process-optimized (PDCA) A programme shall be set up by the end of 2008 to involve Länder authority representatives' in international co-operation.	RS I 3 Actors: Länder	2009 - 2011
69	18.	Use of insights from operation experience feedback (OEF) into the regulatory process	Federal Regulator International events	Revision of the criteria for reporting events in German plants to the IRS until 2009 (jointly with GRS) with the aim to increase their number.	RS I 7 Länder	2009
1-258	19.	Enhancing regulatory effectiveness and competence	Regulatory Body Standard regulatory practice	1. The Länder Regulators not involved in the Mission should perform a self-assessment on the basis of the IRRS Questionnaire. 2. In this context, a national Mission of federal and Länder representatives and a special commission consisting of Federation, Länder and RSK could hold additional talks with the supervisory authorities of the Länder, the operators, and the authorised experts and should subsequently prepare a report.	Regulatory Body	Spring 2010 (report on follow-up available)

3.3.2.2 Action Plan UM BW

IRRS Question	Action	Aim	Responsible or co-ordination	Target date
67 96	1. Co-operation in international working groups and committees (IAEA, OECD/NEA, EU/WENRA)	- Contribution of UM BW oversight experience - Learning from international experience (cf. also ILK Report Sec. 3.1 and Item 7 of the Aims and Actions 2008)	32	End of 2008 (4 members on international working groups and committees)
67 96	2. Co-operation in international projects and actions (e.g. IAEA missions, workshops)	- Contribution of UM BW oversight experience - Learning from international experience (cf. also ILK Report Sec. 3.1)	32	Permanent task
68	3. Further expansion and optimisation of Internet presence	- Provision of information - continual updating of basic information (cf. also Strategic Aim "Optimise public relations")	32	Permanent task
68	4. Holding of public events	Increasing trust in the regulatory authority by direct communication with the members of the population concerned (cf. also ILK Report Sec. 2.4 and Item 12 of the Aims and Actions 2008)	32	2010 (one event per year)
68	5. Co-ordination with the press office and the Communication and Public Relations Section at the UM	Using know-how for communication tailored to the needs of the recipient (cf. also Strategic Aim "Optimise public relations")	32	Permanent task
69	6. Intensification of the co-operation between Federation and Länder regarding the international exchange of NPP operating experience (co-operation in Federation-Länder Working Group on national regulation)	Guaranteeing effective German participation in the international feedback of operating experience	32	2010

IRRS Question	Action	Aim	Responsible or co-ordination	Target date
94 123	7. Winning new personnel to replace retired staff and to ensure that experts trained in the key areas of nuclear safety (main specialist areas) are available in the Division	<ul style="list-style-type: none"> - Ensuring in the long run an adequate number of technically qualified members of staff in the Division - At least 1 trained expert in each of the main specialist areas of nuclear safety - Ensuring the necessary expert competence of the authority (cf. also Policy Issue „Human Resources and Knowledge Management“)	3	2010
105	8. Cross-inspections with other federal Länder	<ul style="list-style-type: none"> - Contribution of UM BW oversight experience - Learning from the experience of other Länder (cf. also ILK Report Sec. 3.2 and Item 7 of the Aims and Actions 2008)	32	2008 (2 inspections)
105	9. Intensification of the exchange of experience in the LAA committees and working groups	<ul style="list-style-type: none"> - Optimising the exchange of experience - Contribution of UM BW oversight experience - Learning from the experience of other Länder (cf. also ILK Report Sec. 3.2)	Members of the committees and working groups	Permanent task
130	10. Revision of the categories in the Land-wide standard modification procedure	Extending the scope of modifications not requiring regulatory approval (strengthening the operator's own responsibility) (cf. also ILK Report Sec. 3.5)	31	End of 2008
130	11. Procedure to release documents from mandatory regular review	Extending the scope of documents that may be modified without regulatory approval (strengthening the operator's own responsibility) (cf. also ILK Report Sec. 3.5)	32	2009
130	12. Regular strategic talks with the expert organisations	Further development of the activities of authorised experts (cf. also ILK Report Sec. 3.5 and Item 6 of the Aims and Actions 2008)	32	2008 (2 Strategic talks)
132	13. Use of PSA results (risk information) in the planning of inspections	Gearing the inspection effort to the risks	34	2010

IRRS Question	Action	Aim	Responsible or co-ordination	Target date
132	14. Using probabilistic methods in the in-service inspection and maintenance concept	Optimising the operator's inspection/maintenance cycles (cf. also Item 2 of the Aims and Actions 2008)	34	End of 2008
150 ff	15. Preparation of the "Safety Requirements for Nuclear Power Plants" (Modules) by BMU and the Länder	- Systematising and updating the nuclear non-mandatory guidance instruments - Contribution of UM BW licensing and supervision experience (cf. also ILK Report Sec. 1.1)	Working group	End of 2008
150 ff	16. Drafting of a Nuclear Plant Safety Ordinance by BMU and the Länder	Contribution of UM BW licensing and supervision experience (cf. also ILK Report Sec. 1.1)	Working group	End of 2008
150 ff	17. Co-operation in the KTA 2301 committee on ageing management	- Updating the nuclear non-mandatory guidance instruments - Contribution of UM BW licensing and supervision experience (cf. also ILK Report Sec. 1.1)	35	2009
150 ff	18. Co-operation in the KTA 1402 committee on management systems and operational management	- Updating the nuclear non-mandatory guidance instruments - Contribution of UM BW licensing and supervision experience (cf. also ILK Report Sec. 1.1)	32	2009
159	19. Inclusion of process descriptions of management processes in the Organisation Manual (OM)	Further developing the management system with consideration of the structure and size of the Division (cf. also ILK Report Sec. 3.3)	32	2010
159	20. Further development of the OM into a Management Manual	Further developing the management system with consideration of the structure and size of the Division (cf. also ILK Report Sec. 3.3)	32	2010
163	21. Systematic training events on safety culture/oversight culture of the authority	Standard application of the concept of safety culture (cf. also ILK Report Sec. 3.4)	32	2010

IRRS Question	Action	Aim	Responsible or co-ordination	Target date
163	22. Performance of a self-assessment of safety culture/oversight culture	Standard application of the concept of safety culture (cf. also ILK Report Sec. 3.4)	32	2010
163	23. Performance of workshops on practical oversight	<ul style="list-style-type: none"> - Exchanging experience regarding oversight on site - Promoting a common understanding - Consistent application of the KOMFORT indicators upon inspections (cf. also ILK Report Sec. 6.4 and Item 7 of the Aims and Actions 2008)	32	2008 (3 workshops)
195	24. Revision and optimisation of the documents relating to the emergency organisation	Improving emergency preparedness (cf. also ILK Report Sec. 3.1 and Item 8 of the Aims and Actions 2008)	32	End of 2008
195	25. Preparation of a long-term exercise plan	Regular exercising of emergency preparedness (cf. also ILK Report Sec. 3.1 and Item 8 of the Aims and Actions 2008)	32	End of 2008
196	26. Completion of processes, process descriptions and process indicators	Further developing the management system with consideration of the structure and size of the Division (cf. also ILK Report Sec. 3.3)	32	2010
220	27. Expansion of the electronic document filing system	Quick and easy access to documents (cf. also Item 10 of the Aims and Actions 2008)	32	End of 2008



3.3.3 Regulatory Policy Issues

3.3.3.1 Human resources and knowledge management

The staffing of the federal and the *Länder* regulators is in need of improvement. For the federal regulator, this is, in particular, due to the following:

- Federal supervision is completely financed by public funds. Due to budgetary savings and the associated cuts in the number of positions it is only possible to a very limited extent to replace outgoing employees by new appointments in time and in the long term.
- For professionally qualified applicants with sufficient experience from regulatory practice in the *Länder* or with experience from the operation of nuclear facilities, the posts in federal supervision are not financially attractive enough. Public sector pay cannot keep up with the current level of wages for correspondingly qualified staff in the private industry.
- As far as posts can only be awarded temporarily, the attractiveness of working in federal supervision diminishes even more.

Consequences:

- The lacking human resources have led to the fact that the federal regulator is only able with restrictions to steer external experts and to adequately judge the technical expert opinions of the authorised experts. The low number of technically trained staff allows no specialisation in the different disciplines. Effectively, each member of staff with former technical training has to cover the entire range of technical disciplines, from reactor physics to seismic safety and digital instrumentation and control. This inevitably leads to deficits in connection with the depth of examinations and in the communication with the authorised experts. Strategic safety issues, such as safety management, OEF, sump clogging and comparable topics whose treatment represent a focal point of general responsibility and thus federal regulatory responsibility cannot be dealt with in a comprehensive and systematic manner.



- As daily work leaves no room for dealing with fundamental issues, it has so far only been rudimentary possible to practise a state-of –the-art knowledge management. Until today, there has not been enough room for giving new staff without any experience in the nuclear field adequate technical and systematic training. The mentoring programme which is in place is only one element for what would be necessary more comprehensive training.
- Until today, it has not been possible under the conditions described to set up and realise a personnel development concept.

The personnel of the Land authorities is largely refinanced by the operators. Nevertheless, the payments of the operators are not directly available to the *Land* regulatory authorities. The *Land* parliament decides on the budget and staff allocated to the regulatory authority. The number of authority staff available for steering the experts is too low. BMU and UM BW demand that each nuclear supervisory authority has to dispose of at least one trained expert in each of the major technical fields (material science, systems engineering, instrumentation and control, thermal hydraulics, etc.). This demand is presently only partly met. The ability to ask the experts and the operators the right questions and to sufficiently penetrate key technical aspects is therefore limited.

The measures required for federal supervision are an essential part of the action plan submitted by the BMU. However, its implementation requires a parliamentary decision on which the BMU may only exert influence to a limited extent.

3.3.3.2 Use of insights from operating experience feedback (OEF) in the regulatory process

An effective organisation of national and international experience feedback is a major issue of regulatory activities. Germany has an established and working system for the evaluation of experiences from occurrences and to communicate them to the competent authorities, but this system has, among others, the following deficiencies:



- The evaluation of safety-relevant events is delegated, in particular at the BMU, to a too large extent to authorised experts.
- From the point of view of the federal regulator, low level events still do not contribute sufficiently to the regulatory operational experience feedback.
- The feedback on measures taken in the facilities and their success should be further optimised (federation/*Land* interface).
- Until today, the *Länder* only have been participating in the international exchange of experience to a limited extent. The federal regulatory authority, on its part, does not have the practical experience of the *Land* regulatory authorities (federation/*Land* interface).

Measures for improvement have been identified. They require further improved exchange of information between the federation and the *Länder*.

3.3.3.3 Enhancing regulatory effectiveness and competence

The federal regulator sees its task in particular in drawing general conclusions on concrete and strategic safety issues in order to organise a national and international exchange of experience and thereby to contribute to a high level of safety at both levels. In this respect, he depends on being informed by the *Länder* as rapidly and comprehensively as possible. There is, however, a gap between what is and what should be. This restricts regulatory effectiveness and competence. Moreover, it has not been possible in recent that the federal regulator and the *Länder* agree on legally binding safety requirements.

From the point of view of the federal regular it would be appropriate - also for reaching higher transparency in supervisory practice in Germany – that the *Länder* not participating in the current IRRS mission conduct a self-assessment according to international standards.

Insufficient numbers of staff and the information problem (see above) currently limit the federal regulator's ability to pursue strategic safety issues. There therefore also exists no coherent and comprehensive strategic research concept yet. The federal regulator's

ability to work on strategic safety issues is furthermore limited by the fact that safety research lies to a considerable extent within the responsibility of the Federal Minister of Economics.

3.3.3.4 Ageing management of NPPs

Under the special German conditions (phase-out law, electricity market deregulation), special care has to be taken that the safe operation of the German NPPs will not be negatively affected until the end of their operating lifetimes. In this context, the systematic evaluation of potentially ageing-relevant effects and the implementation of suitable measures (maintenance, backfitting...) to counteract negative ageing effects are seen as an essential element. Based on an [RSK statement](#), the operators are called upon to operate an ageing management system. Moreover, a KTA safety standard on this issue is currently being drafted. The aim is to ensure high-level oversight in this area.

3.3.3.5 Management of safety

The operators are called upon to develop management systems and install and operate them in their plants. The aim of such management systems is to commit them to a high level of safety and to enhance safety culture. It is to ensure that safety is given priority over other business objectives. Apart from overseeing the management system, the supervisory authority has to examine and assess in a suitable manner the "soft" factors, such as safety culture, leadership behaviour, etc. The overseeing bodies try to meet these requirements by applying different oversight instruments (KOMFORT, SMS talks,...) without causing any negative retroactive effects on the management system and the processes that lie within the operator's responsibility. Both the federal and the *Länder* governments consider a qualified reporting duty on the part of the operator to be an essential element of regulatory control in the area of conflict between the operator's own responsibility and the regulator's obligatory supervision.



4 Further documentation

(full texts in electronic book only)

4.1 General Reference Material

- Aarhus Convention: Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters
- Act on the Convention of 20 September 1994 on Nuclear Safety (Act on the Convention on Nuclear Safety)
- Act on the Establishment of a Federal Office for Radiation Protection (BfS)
- Act on the IAEA Conventions of 26 September 1986 on Early Notification of a Nuclear Accident and on Assistance in the Case of a Nuclear Accident or Radiological Emergency (Act on the IAEA Notification Convention and on the IAEA Assistance Convention)
- Act on the Peaceful Utilization of Atomic Energy and the Protection against its Hazards (Atomic Energy Act - AtG)
- Act on the Precautionary Protection of the Population against Radiation Exposure (Precautionary Radiation Protection Act - StrVG)
- Administrative Courts Code (Verwaltungsgerichtsordnung - VwGO)
- Administrative Procedures Act (Verwaltungsverfahrensgesetz – VwVfG)
- Basic Law for the Federal Republic of Germany (excerpts)
- Basic Recommendations for Emergency Preparedness in the Environment of Nuclear Facilities / Radiological Bases for Decisions on Measures for the Protection of the Population against Accidental Releases of Radionuclides
- Commercial Code § 249 (Handelsgesetzbuch – HGB)
- Compilation of Information Required for Review Purposes under Licensing and Supervisory Procedures for Nuclear Power Plants
- Convention on Nuclear Safety:
 - o Report by the Government of the Federal Republic of Germany for the Fourth Review Meeting in April 2008
 - o German Presentations at the 2008 Conference
 - Presentation of the Federal Republic of Germany
 - New Safety Requirements
 - Operating Experience Feedback
 - Safety Management Systems
 - o Questions posted to Germany in 2008
- Cost Ordinance under the Atomic Energy Act (AtKostV)
- Criminal Code (excerpts)
- Directive concerning emission and immission monitoring of nuclear power plants
- Environmental Impact Assessment Act (UVPG)
- Environmental Information Act (UIG)
- Framework Recommendations for Remote Monitoring of Nuclear Power Stations (KFÜ)



- Fundamentals of Safety Management Systems in Nuclear Power Plants
- Guideline Relating to the Assurance of the Necessary Knowledge of the Persons Otherwise Engaged in the Operation of Nuclear Power Plants
- Guideline Relating to the Content of the Examination of the Technical Qualification of the Responsible Shift Personnel in Nuclear Power Plants
- Guideline Relating to the Content of the Examination of the Technical Qualification of the Responsible Shift Personnel in Research Reactors
- Guideline Relating to the Proof of the Technical Qualification of Nuclear Power Plant Personnel
- Guidelines Concerning the Requirements for Safety Specifications for Nuclear Power Plants: Checklist for Format and Content of Safety Specifications for Nuclear Power Plants
- Guides for the Periodic Safety Review of Nuclear Power Plants
- Industrial Code § 139b
- Interpretations of the Safety Criteria for Nuclear Power Plants: Single Failure Concept - Principles for the Application of the Single Failure Criterion
- KTA – Legal Basis and Procedures
- Notification of a recommendation of the Commission on Radiological Protection (“Use of iodine tablets for thyroid blocking in the event of a nuclear accident”)
- Nuclear Power Plant Safety Criteria Promulgation
- Ordinance Concerning the Financial Security Pursuant to the Atomic Energy Act (Nuclear Financial Security Ordinance - AtDeckV)
- Ordinance Concerning Prepayments for the Erection of Federal Facilities for the Long-Term Engineered Storage and Disposal of Radioactive Waste (Repository Prepayment Ordinance)
- Ordinance on the Nuclear Safety Officer and the Reporting of Accidents and other Events (Nuclear Safety Officer and Reporting Ordinance - AtSMV)
- Ordinance on the Procedure for Licensing of Installations under § 7 of the Atomic Energy Act (Nuclear Licensing Procedure Ordinance - AtVfV)
- Ordinance on the Protection against Damage and Injuries Caused by Ionizing Radiation (Radiation Protection Ordinance - StrlSchV)
- Ordinance on the shipment of radioactive waste into or out of the Federal Territory (Nuclear waste shipment ordinance - AtAV)
- Ordinance relating to the verification of reliability for the protection against the diversion or major release of radioactive material according to the Atomic Energy Act (Nuclear reliability verification ordinance - AtZüV)
- Principles for the Applicant's / Licensee's Documentation of Technical Documents Pertaining to the Construction, Operation, and Decommissioning of Nuclear Power Plants
- Report under the Joint Convention by the Government of the Federal Republic of Germany for the Second Review Meeting in May 2006
- RSK Guidelines for Pressurized Water Reactors
- RSK Recommendation: Management of Ageing Processes at Nuclear Power Plants



- RSK statement: “Loss-of-coolant accidents involving the release of insulation material and other substances in pressurised water reactors - removal of deposits on sump strainers”
- RSK statement: “Requirements for the demonstration of effective emergency core cooling during loss-of-coolant accidents involving the release of insulation material and other substances”
- RSK Statutes
- Safety Review for Nuclear Power Plants pursuant to § 19a of the Atomic Energy Act – Guide Probabilistic Safety Analysis
- Treaty Establishing the European Atomic Energy Community (EURATOM)
- WENRA Action Plan Germany

4.2 Reference Material with respect to BMU

- Basic principles applying to the activities of authorised experts working under commission to federal authorities responsible for overseeing implementation of the Atomic Energy Act with respect to nuclear power stations, research reactors and other reactors (principles for authorised experts commissioned by federal supervisory authorities for nuclear power stations)
- BMU Emergency task force organisation
- BMU Global Aims
 - o RS I
 - o RS II
 - o RS III
 - o International Co-operation
 - o Public Awareness
- BMU Press Release 222/07 on Safety Management
- BMU QM Handbook: Central Document
- BMU QM Handbook: Process description “Federal supervision – licensing procedures”
- BMU QM Handbook: Work instructions – Order for advising, issued to the RSK/SSK
- Framework Agreement between BMU and GRS
- Framework Guideline on the Preparation of Expert Opinions in Nuclear Administrative Procedures
- GRS Annual Report 2005/2006
- Information Notice on notifiable events in nuclear power plants in the Federal Republic of Germany (WLN 2006/06) “Incorrectly installed anchors in the Biblis nuclear power plant, Unit A”
- Information Notice on notifiable events in nuclear power plants in the Federal Republic of Germany (WLN 2006/06a) - Supplement to Information Notice 2006/06 "Incorrectly installed anchors" in the Biblis nuclear power plant, Unit A (KWB-A)
- Joint Rules of Procedure of the Federal Ministries
- List of Regulatory Research Issues of BMWi
- Principles Regarding the Awarding of Subcontracts by Authorized Experts
- Promulgation of the Federal Chancellor’s organisational directive of 27 October 1998



- Report to the Ministry of Economics acc. to § 88 para 2 Federal Budget Code "Safety Research for Nuclear Facilities"
- RULES OF PROCEDURE of the BMU (GO-BMU), including
 - o Chapter 01 – Introduction / Principles
 - o Chapter 02 – Organisation / Personnel Requirements
 - o Chapter 04 – Internal cooperation within the Ministry / Business routine
 - o Chapter 05 – Correspondence / Records Management
 - o Chapter 06 – Information and publications / Dealings with bodies outside the BMU
 - o Chapter 09 – Cabinet and parliamentary matters / Legislative procedures
 - o Chapter 10 – Budget matters / Procurement
 - o Chapter 12 – Project Planning / Research
- Safety Requirements for Nuclear Power Plants (Draft Revision B):
 - o Module 1: Fundamental Safety Requirements
 - o Module 2: Requirements for the Design of the Reactor Core
 - o Module 3: Events to be Considered in Pressurised and Boiling Water Reactors Core
 - o Module 4: Requirements for the Design of the Reactor Coolant Pressure Boundary, the Pressure-Retaining Walls of the External Systems and the Twin-walled Containment System
 - o Module 5/1: Requirements for Instrumentation and Control
 - o Module 5/2: Requirements for Electrical Energy Supply, Accident Instrumentation
 - o Module 6: Requirements for Safety Demonstrations and Documentation
 - o Module 7: Requirements for Accident Management
 - o Module 8: Requirements for Safety Management
 - o Module 9: Requirements for Radiation Protection
 - o Module 10: Requirements for the Design and Safe Operation of Plant Structures, Systems and Components
 - o Module 11: Requirements for the Handling and Storage of the Fuel Elements
- Strategic aims for 2008 of Directorate-General RS
- Supplement to the Information Notices (Weiterleitungsnachrichten) WL 14/92 and 14A/92 with regard to notifiable events in nuclear power plants abroad (WL 14B/92) "Clogging of sump suction strainers of the emergency core cooling systems due to inadvertent opening of a safety valve in the Barsebäck-2 nuclear power plant (Sweden) on 28th July 1992"
- Supplement to the Information Notices WL 14/92, WL14A/92 and WL 14B/92 on events on foreign nuclear power plants (WL 14C/92) "Blocking of sump suction strainers of the emergency cooling systems due to inadvertent opening of a safety valve in the Barsebäck-2 nuclear power plant (Sweden) on 28th July 1992"
- Training of Authority Staff in Germany



- Update of regulatory guidelines: Extracts from resource synopsis
- Update of regulatory guidelines: Extracts from the documentation of international regulations

4.3 Reference Material with respect to UM BW

- Activity Report by the Nuclear Supervision, Environmental Radioactivity Division of UMBW
- Additional requirement for the operating management of the Neckarwestheim Nuclear Power Plant (Unit II)
- Administrative agreement between the Federal States of Baden-Württemberg, Hesse and Bavaria of July 5, 1999 (ILK)
- Concept for regulatory oversight of nuclear power plants in Baden-Württemberg
- ILK Report on the Assessment of Nuclear Oversight Activities of the Ministry of Environment, Baden-Württemberg
- License for the operation of the shared-ownership nuclear power plant Neckar Unit II (4th partial license)
- Manual for the organization of Division 3 “Nuclear Supervision, Environmental Radioactivity” (Organizational manual – OHB)
- Mission Statement for the Division Nuclear Supervision, Environmental Radioactivity of UMBW
- Nuclear power plants in Baden-Württemberg (Chapter 7 of Department’s Report)
- Oversight Manual UM BW
- Schedule of Responsibilities UM BW
- Strategic Approach and Objectives of the Division Nuclear Supervision, Environmental Radioactivity of UMBW
- TÜV SÜD Energietechnik: Organisational Chart
- UM BW: Examples of oversight practice
 - o Findings at fastenings in KKP2
 - o Findings fire protection at GKN I
 - o Findings in the documentation room of KKP 1
 - o Increased PSA application
 - o Increased steam moisture
 - o Increased temperature of the main water inlet
 - o Introduction safety management system
 - o Personnel planning
 - o Remote monitoring system KFÜ
 - o Weak points barrier concept



5 List of Abbreviations

AGAVE	UMBW electronic system for supervision documentation
AHB	Aufsichtshandbuch - Manual for regulatory oversight of nuclear power plants in Baden-Württemberg
AtG	Atomic Energy Act - Atomgesetz
ARM	Advance Reference Material
ASN	Autorité de sûreté nucléaire - French Nuclear Safety Authority
AtKostV	Cost Ordinance under the Atomic Energy Act - Kostenverordnung zum Atomgesetz
AtASiV	Nuclear Installations Safety Ordinance – Atomrechtliche Anlagen Sicherheitsverordnung
AtDeckV	Nuclear Financial Security Ordinance - Atomrechtliche Deckungsvorsorge-Verordnung
AtSMV	Nuclear Safety Officer and Reporting Ordinance - Atomrechtliche Sicherheitsbeauftragten und Meldeverordnung
AtVfV	Nuclear Licensing Procedures Ordinance - Atomrechtliche Verfahrensverordnung
AtZüV	Atomrechtliche Zuverlässigkeitsüberprüfungs-Verordnung -
AVR	Atomversuchskraftwerk
BAFA	Federal Office of Economics and Export Control - Bundesamt für Wirtschaft und Ausfuhrkontrolle
BAköV	Die Bundesakademie für öffentliche Verwaltung - Federal Academy of Public Administration
BAnz.	Bundesanzeiger – German Federal Gazette
BGBI	Bundesgesetzblatt – Federal Law Gazette
BHO	Bundeshaushaltsordnung – Federal Budgetary Regulations
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety – Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit
BMVBS	Federal Ministry of Transport, Building and Urban Affairs – Bundesministerium für Verkehr, Bau und Stadtentwicklung
BMWi	Federal Ministry of Economics and Technology – Bundesministerium für Wirtschaft und Technologie



BfS	Federal Office for Radiation Protection – Bundesamt für Strahlenschutz
BRH	Bundesrechnungshof - German Federal Court of Auditors
BWR	Boiling Water Reactor - Siedewasserreaktor
BYSTMLU	Bayerisches Staatsministerium für Landesentwicklung und Umweltfragen – Bavarian State Ministry for <i>Land</i> Development and Environmental Issues
CNS	Convention on Nuclear Safety – Konvention über die Nukleare Sicherheit
ConvEx	Convention Exercises
DFK	German-French commission – Deutsch-Französische Kommission
DIN	Deutsche Industrie Norm – German Industrial Standard
DSK	German-Swiss commission – Deutsch-Schweizerische Kommission
ECURIE	European Community Urgent Radiological Information Exchange
ELD	Electronic Locator Device (Electronic Situation Report system) – Elektronische Lagedarstellung
EMERCON	Emergency Convention
EnBW	Energie Baden-Württemberg
Endlager-VIV	Repository Prepayment Ordinance – Endlager Vorausleistungsverordnung
EnKK	EnBW Kernkraft
E.on	E.on
EU	European Union
EURATOM	Europäische Atomgemeinschaft – European Atomic Energy Community
FBR	Fast Breeder Reactor / Schneller Brüter
GEA	Ganzheitliche Ereignisanalyse – Integrated event analysis
GewO	Gewerbeordnung – Commercial Code
GRS	Gesellschaft für Anlagen- und Reaktorsicherheit
GG	Grundgesetz – Basic Law
GGO	Gemeinsame Geschäftsordnung der Bundesministerien – Joint Rules of Procedure for the Federal Ministries
GKN 1	Neckarwestheim 1 NPP
GKN 2	Neckarwestheim 2 NPP
HDR	Hot Steam Reactor / Heißdampfreaktor Großwelzheim
HessVGH	Hessischer Verwaltungsgerichtshof – Administrative Court of Hesse



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HGB	Handelsgesetzbuch – German Commercial Code
HSK	Hauptabteilung für die Sicherheit von Kernanlagen – Swiss Federal Nuclear Safety Inspectorate
HTR	Hochtemperaturreaktor / High Temperature Reactor
IACRNA	Inter-Agency Committee on Response to Nuclear Accidents
IAEA	International Atomic Energy Agency
IFG	Freedom of Information Act - Informationsfreiheitsgesetz
ILK	International Commission on Nuclear Technology – Internationale Länderkommission
INERATOM	Internationale Atomreaktorbau GmbH
INES	International Event Scale
INEX	Nuclear Energy Agency International Nuclear Emergency Exercises
INFCIRC	Information Circular
ISIS	Integriertes Sicherheitsinformationssystem / Integrated Safety-Information System
IVBB	Information network / Informationsverbund Berlin-Bonn
KBR	Brokdorf NPP
KeTAG	Kerntechnik Gutachter-Arbeitsgemeinschaft Baden Württemberg
KFÜ	Reactor Remote Monitoring System - Kernreaktor-Fernüberwachungssystem
KGR 1	Greifswald 1 NPP
KGR 2	Greifswald 2 NPP
KGR 3	Greifswald 3 NPP
KGR 4	Greifswald 4 NPP
KGR 5	Greifswald 5 NPP
KGR 6	Greifswald 6 NPP
KGR 7	Greifswald 7 NPP
KGR 8	Greifswald 8 NPP
KKB	Brunsbüttel NPP
KKE	Emsland NPP
KKG	Grafenrheinfeld NPP
KKI 1	Isar 1 NPP
KKI 2	Isar 2 NPP
KKK	Krümmel NPP
KKN	Niederaichbach NPP
KKP 1	Philippsburg 1 NPP



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KKP 2	Philippsburg 2 NPP
KKR	Rheinsberg NPP
KKS	Stade NPP
KKU	Unterweser NPP
KMK	Mülheim-Kärlich NPP
KNK II	Compact Na-moderated Reactor / Kompakte natriumgekühlte Reaktoranlage Karlsruhe
KOMFORT	Catalogue for recording organisational and human factors during on-site inspections – Katalog zur Erfassung organisationaler und menschlicher Faktoren bei Inspektionen vor Ort
KRB A	Gundremmingen A NPP
KRB B	Gundremmingen B NPP
KRB C	Gundremmingen C NPP
KTA	Nuclear Safety Standards Commission – Kerntechnischer Ausschuss
KWB A	Biblis A NPP
KWB B	Biblis B NPP
KWG	Grohnde NPP
KWL	Lingen NPP
KWO	Obrigheim NPP
KWU	Kraftwerk Union
KWW	Würgassen NPP
LAA	Länder Committee for Nuclear Energy – Länderausschuss für Atomkernenergie
LUBW	State Agency for the Environment, Measuring and Nature Conservation, Baden-Wurttemberg - Landesanstalt für Umwelt, Messungen und Naturschutz, Baden-Württemberg
LVwVfG	State Administration Procedures Act – Landesverwaltungsvollstreckungsgesetz
MPA	Materials Testing Institute – Materialprüfungsanstalt
MTO	Mensch-Technik-Organisation (Men-Technology-Organization)
MZFR	Multi purpose research reactor / Mehrzweckforschungsreaktor
NPP	Nuclear Power Plant
OECD/NEA	Organisation for Economic Co-operation and Development / Nuclear Energy Agency
OEF	Operational Experience Feedback



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OHB	Organisation Manual - Organisationshandbuch
OSART	Operational Safety Review Team
PDCA	Plan-Do-Check-Act
PI	Performance indicators
PSA	Probabilistische Sicherheitsanalyse – Probabilistic Safety Analysis
PSR	Periodic Safety Review – Periodische Sicherheitsüberprüfung
PTR	Pressure Tube Reactor / Heissrohrreaktor
PWR	Pressurized Water Reactor -. Druckwasserreaktor
QM	Quality Management - Qualitätsmanagement
QS	Qualitätssicherung – Quality assurance
RöV	X-Ray Ordinance - Röntgenverordnung
RSH	Handbook on Nuclear Safety and Radiation Protection - Reaktorsicherheitshandbuch
RSK	Reactor Safety Commission - Reaktorsicherheitskommission
RWE	Rheinisch-Westfälische Elektrizitätswerk
SHB	Emergency manual - Störfallhandbuch
SMS	Safety management system - Sicherheitsmanagementsystem
SOL	Safety through Organizational Learning – Sicherheit durch Organisationales Lernen
SSK	Commission on Radiological protection - Strahlenschutzkommission
SSR	Superheated Steam-Cooled Reactor
StGB	Strafgesetzbuch – Criminal Code
StMUGV	Staatsministerium für Umwelt, Gesundheit und Verbraucherschutz, Bayern –State Ministry of the Environment, Public Health and Consumer Protection, Bavaria
StrVG	Precautionary Radiation Protection Act - Strahlenschutzvorsorgegesetz
StrlSchV	Radiation Protection Ordinance – Strahlenschutzverordnung
TECDO	Technical Documentation System at GRS
THTR 300	Thorium High Temperature Reactor / Thorium- Hochtemperaturreaktor (Hamm-Uentrop)
TSO	Technical Safety Organization
TÜV	Technical Inspection Agency – Technischer Überwachungs-Verein
UIG	Environmental Information Act - Umweltinformationsgesetz
UM BW	Baden-Wurtemberg Ministry of the Environment
UVPG	Environmental Impact Assessment Act – Gesetz über die



	Umweltverträglichkeitsprüfung
VAK	Versuchsatomkraftwerk Kahl
VwGO	Administrative Courts Code - Verwaltungsgerichtsordnung
VwVfG	Administrative Procedure Act- Verwaltungsverfahrensgesetz
WENRA	Western European Nuclear Regulatory Association
WL	Weiterleitungsnachricht – Information Notice
ZG	Zentralabteilung, Grundsatzangelegenheiten des Umweltschutzes (BMU) - Directorate-General ZG - Central Functions
ZPI	Compilation of Information Required for Review Purposes under Licensing and Supervisory Procedures for Nuclear Power Plants

6 List of German organisations and institutions (hyperlinks)

[AA](#) (Federal Foreign Office / Auswärtiges Amt)

[BAFA](#) (Federal Office of Economics and Export Control / Bundesamt für Wirtschaft und Ausfuhrkontrolle)

[BfS](#) (Federal Office for Radiation Protection / Bundesamt für Strahlenschutz)

[BMBF](#) (Federal Ministry of Education and Research / Bundesministerium für Bildung und Forschung)

[BMF](#) (Federal Ministry of Finance / Bundesministerium der Finanzen) [only in German]

[BMU](#) (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety / Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit)

[BVA](#) (Federal Office for Administration / Das Bundesverwaltungsamt) [only in German]

[BMVg](#) (Federal Ministry of Defence / Bundesministerium der Verteidigung)

[BMWi](#) (Federal Ministry of Economics and Technology / Bundesministerium für Wirtschaft und Technologie)

[Bundesrechnungshof](#) (Federal Court of Audit)

[EBA](#) (Federal Railway Authority / Eisenbahn-Bundesamt)

[Federal Government](#) (Die Bundesregierung)

[FZD](#) (Research Centre- / Forschungszentrum Dresden-Rossendorf)

[FZJ](#) (Research Centre- / Forschungszentrum Jülich)

[FZK](#) (Research Centre- / Forschungszentrum Karlsruhe GmbH)

[German Bundestag](#) (Federal Parliament)

[German Bundesrat](#) (Federal Council)



- GKSS Research Centre** (Gesellschaft für Kernenergieverwertung in Schiffbau und Schifffahrt mbH - Forschungszentrum)
- GRS** (Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH)
- GSF** (German Research Center for Environmental Health / Deutsches Forschungszentrum für Gesundheit und Umwelt – former: Gesellschaft für Strahlenforschung)
- GSI** (Gesellschaft für Schwerionenforschung)
- HMULV** (Ministry of the Environment, Rural Areas and Consumer Protection, Hesse / Ministerium für Umwelt, ländlichen Raum und Verbraucherschutz, Hessen)
- ILK** (International Committee on Nuclear Technology / Internationale Länderkommission)
- KTA** (The Nuclear Safety Standards Commission / Kerntechnischer Ausschuss)
- LBA** (Federal Office for Aviation / Luftfahrtbundesamt)
- Lower Saxony Environment Ministry** (Niedersächsisches Ministerium für Umwelt und Klimaschutz) [only in German]
- LUBW** (State Agency for the Environment, Measuring and Nature Conservation, Baden-Württemberg / Landesanstalt für Umwelt, Messungen und Naturschutz, Baden-Württemberg) [only in German]
- Ministry of Economic Affairs of Baden-Württemberg** (Wirtschaftsministerium Baden-Württemberg) [only in German]
- Ministry of the Interior of Baden-Württemberg** (Innenministerium Baden-Württemberg) [only in German]
- MPA** (Materials Testing Institute / Staatliche Materialprüfungsanstalt, Stuttgart)
- MSGF** (Ministry for Social Affairs, Health, the Family, Youth and Senior Citizens, Schleswig-Holstein / Ministerium für Soziales, Gesundheit, Familie, Jugend und Senioren, Schleswig-Holstein)
- UMBW** (Ministry of the Environment, Baden-Württemberg / Umweltministerium Baden-Württemberg) [only in German]
- RSK** (Reactor Safety Commission / Reaktor-Sicherheitskommission)
- SSK** (Radiation Protection Commission / Strahlenschutz Kommission) [only in German]
- StMUGV** (State Ministry of the Environment, Public Health and Consumer Protection, Bavaria / Staatsministerium für Umwelt, Gesundheit und Verbraucherschutz, Bayern)
- StWIVT** (State Ministry of the Economy, Infrastructure, Transport and Technology, Bavaria / Staatsministerium für Wirtschaft, Infrastruktur, Verkehr und Technologie, Bayern) [only in German]
- TÜV – Nord** Technical Supervisory Organization
- TÜV – Süd** Technical Supervisory Organization



[TÜV – Rheinland](#) Technical Supervisory Organization

[TÜV – Hessen](#) Technical Supervisory Organization

[VdTÜV e.V.](#) Technical Supervisory Organization

[Website for updating nuclear legislation in Germany](#) (Homepage des Projektes zur Aktualisierung des kerntechnischen Regelwerkes)



Bundesministerium
für Umwelt, Naturschutz
und Reaktorsicherheit

**Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety**

Office Bonn:

Robert-Schuman-Platz 3
D - 53175 Bonn
Telefon: 0228 99 305-0
Telefax: 0228 99 305-3225

Office Berlin:

Alexanderstraße 3
D - 10178 Berlin-Mitte
Telefon: 030 18 305-0
Telefax: 030 18 305-4375

Internet: <http://www.bmu.de>



Baden-Württemberg
UMWELTMINISTERIUM

**Environment Ministry
of Baden-Wurttemberg**

Kernerplatz 9
70182 Stuttgart

Postfach 10 34 39
70029 Stuttgart
Telefon: 0711/126-0
Telefax: 0711/126-2881 bzw.
0711/126-2880 (Presse)

Internet: <http://www.um.baden-wuerttemberg.de>