IAEA-NS-IRRS-2018/04
ORIGINAL: English

INTEGRATED REGULATORY REVIEW SERVICE (IRRS)

MISSION

TO

AUSTRIA

Vienna, Austria

25 June to 3 July 2018

DEPARTMENT OF NUCLEAR SAFETY AND SECURITY

IAEA

Integrated Regulatory Review Service

IRRS

Integrated
Regulatory
Review Service

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REPORT OF THE
INTEGRATED REGULATORY REVIEW SERVICE (IRRS) MISSION
TO
AUSTRIA

IRRS TEAM AND COUNTERPARTS

REPORT OF THE
INTEGRATED REGULATORY REVIEW SERVICE (IRRS) MISSION
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AUSTRIA

Mission dates:	*25 June to 3 July 2018*
Regulatory body visited:	*Federal Ministry of Sustainability and Tourism* *Federal Ministry of Education, Science and Research* *Federal Ministry of Labour, Social Affairs, Health and Consumer Protection*
Location:	*Vienna, Austria*
Regulated facilities and activities in the mission scope:	*Radiation sources regulated at federal level, research reactor, emergency preparedness and response, medical, occupational and public exposure control*
Organized by:	*International Atomic Energy Agency*

IRRS REVIEW TEAM	
MARKKANEN Mika	Team Leader (Finland)
STRITAR Andrej	Deputy Team Leader (Slovenia)
CIUREA-ERCAU Cantemir	Reviewer (Romania)
KAMOON Ashraf	Reviewer (Egypt)
KRS Petr	Reviewer (Czech Republic)
OLIVEIRA MARTINS João	Reviewer (Portugal)
RAJAPPA Uma	Reviewer (Australia)
SIVARAMAKRISHNAN Mahalakshmi	Reviewer (India)
THUNBERG Stefan	Reviewer (Sweden)
MANSOUX Hilaire	IAEA Team Coordinator
MACSUGA Géza	IAEA Deputy Team Coordinator
SUMAN Hazem	IAEA Review Area Facilitator
SWOBODA Zumi	Administrative Assistant

WANG Chongxiang	IAEA Observer
GEWESSER Lyn	IAEA Observer

The number of recommendations, suggestions and good practices is in no way a measure of the status of the national infrastructure for nuclear and radiation safety. Comparisons of such numbers between IRRS reports from different countries should not be attempted.

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EXECUTIVE SUMMARY

At the request of the Government of Austria, an international team of senior nuclear and radiation safety experts met with representatives of the Federal Ministry of Sustainability and Tourism (BMNT), the Federal Ministry of Education, Science and Research (BMBWF) and the Federal Ministry of Labour, Social Affairs, Health and Consumer Protection (BMASGK) from 25 June to 3 July 2018 to conduct an Integrated Regulatory Review Service (IRRS) mission. The mission took place at BMNT. Meetings were organized with BMNT, BMBWF and BMASGK. The purpose of the IRRS mission was to perform a peer review of Austria's national regulatory framework for nuclear and radiation safety.

The IRRS mission to Austria was a limited scope mission as it did not cover all civilian radiation source facilities and activities regulated in Austria, but focused only on the research reactor and the radiation sources regulated at the federal level. It did not address the regulatory control of the majority of facilities and activities in Austria, as their regulatory oversight is the responsibility of the provinces and districts, who were also excluded from the scope of the mission. Within that limited scope, the review compared the Austrian regulatory framework for safety against IAEA safety standards as the international benchmark for safety. The mission was also used to exchange information and experience between the IRRS review team members and the Austrian counterparts in the areas covered by the IRRS.

The IRRS team consisted of 10 senior regulatory experts from 9 IAEA Member States, 2 IAEA staff members, 1 IAEA administrative assistant and 2 IAEA observers. The IRRS team carried out the review in the following areas: responsibilities and functions of the government; the global safety regime; responsibilities and functions of the regulatory body; the management system of the regulatory body; the activities of the regulatory body including authorization, review and assessment, inspection and enforcement processes, development and content of regulations and guides; emergency preparedness and response; control of medical exposures, occupational radiation protection, control of public exposure.

The IRRS mission included two policy issue discussions on the creation of an integrated regulatory body and on the independence of the regulatory body.

The mission included interviews and discussions with staff of BMNT, BMBWF and BMASGK, visits to the TRIGA Mark-II Research Reactor and the Kaiser Franz Joseph Hospital (radiotherapy facility) and observations of regulatory inspection activities, including discussions with the authorized parties' personnel and management.

In preparation for the IRRS mission, Austria conducted a self-assessment and prepared a preliminary action plan to address areas that were identified for improvement. The results of the self-assessment and supporting documentation were provided to the team as advance reference material (ARM) for the mission. Throughout the mission, the IRRS team was extended full cooperation in the regulatory, technical, and policy issues by all parties in a very open and transparent manner.

The IRRS team observed that the BMNT, BMBWF and BMASGK counterparts were committed to provide the regulatory oversight of all facilities and activities under their jurisdictions. The invitation of the IRRS mission demonstrates Austria's commitment to improve the national legal and regulatory framework for nuclear and radiation safety.

The most significant challenges to Austria are the overall revision of the legal framework for its harmonization with EU legislation and international standards and the implementation of

the governmental plan to restructure the regulatory framework with due consideration of the effective independence of the regulatory body and the efficient use of resources.

The IRRS team made recommendations and suggestions that indicate where improvements are necessary or desirable to continue enhancing the effectiveness of regulatory functions in line with IAEA safety standards. The IRRS team recognized that some of its findings confirmed the actions identified by the ministries as a result of their self-assessment.

The IRRS team identified certain issues warranting attention or in need of improvement and believes that consideration of these would enhance the overall performance of the regulatory system:

The Government should:

- consider re-organizing the existing fragmented system of several federal regulatory authorities into a simpler structure that would allow for more efficient use of available resources;
- review the regulatory framework at federal level to avoid any potential conflict of interest and to ensure the appropriate independence in the discharge of safety related regulatory functions;
- consider making more use of international peer review services to share knowledge and experience and receive feedback on existing national safety arrangements.

The regulatory body should:

- consider further harmonizing regulatory practices among all authorities involved in regulatory control;
- further develop and implement its Integrated Management System for satisfying fully the requirements set out in IAEA safety standards;
- ensure that when reviewing regulations, the IAEA safety standards are taken into account;
- avoid any direct or indirect involvement in the implementation of radiation protection measures in the authorized facilities and activities which may conflict with the authorized party's prime responsibility for safety;
- develop and systematically use formal processes to assess sufficiency and competence of staff and to ensure long term human resource and succession planning and recruitment, appropriate training and knowledge management;
- consider establishing criteria and process for selection, approval or accreditation of external experts assuring their expertise and assuring there is no conflict of interest with regulated parties.

The IRRS team findings are summarized in Appendix V.

An IAEA press release was issued at the end of the IRRS Mission.

I. INTRODUCTION

At the request of the Government of Austria, an international team of senior safety experts met representatives of the Federal Ministry of Sustainability and Tourism (BMNT), the Federal Ministry of Education, Science and Research (BMBWF) and the Federal Ministry of Labour, Social Affairs, Health and Consumer Protection (BMASGK) from 25 June to 3 July 2018 to conduct an Integrated Regulatory Review Service (IRRS) mission. The purpose of this peer review was to review the Austrian regulatory framework for nuclear and radiation safety. The review mission was formally requested by the Government of Austria in December 2016. A preparatory mission was conducted on 30 to 31 January 2018 at BMNT in Vienna to agree the purpose, objectives and detailed preparations of the review in connection with regulated facilities and activities in Austria and their related safety aspects and to agree the scope of the IRRS mission.

As per the request of Austria, and as agreed at the preparatory meeting, the scope of the IRRS mission was limited to the federal level, both in terms of regulatory organizations and regulated facilities and activities. Only the three ministries BMNT, BMBWF and BMASGK were considered in Austria as the regulatory body[1] at federal level for nuclear and radiation safety. Provinces and districts that do play a role in ensuring the regulatory oversight of facilities and activities below federal level were excluded from the scope of the mission. Consequently, the mission focused on the TRIGA Mark-II Research Reactor and the radiation sources regulated at the federal level, i.e. accelerators in the fields of research and medical applications. It is worth noting that waste management, including the Nuclear Engineering Seibersdorf (NES, the only waste management facility in Austria), although regulated by BMNT were not included in the scope of the mission, on the basis that an ARTEMIS mission is planned to be held in the near future. Transport, as well as existing exposure situations were also excluded from the scope of the mission.

The IRRS team consisted of 10 senior regulatory experts from 9 IAEA Member States, 2 IAEA staff members, 1 IAEA administrative assistant and 2 IAEA observers. Within the limited scope of the mission, the IRRS team carried out the review in the following areas: responsibilities and functions of the government; the global nuclear safety regime; responsibilities and functions of the regulatory body; the management system of the regulatory body; the activities of the regulatory body including authorization, review and assessment, inspection and enforcement processes; development and content of regulations and guides; emergency preparedness and response; occupational radiation protection, control of medical exposure, and public exposure control.

In addition, policy issues were discussed, including: creation of an integrated regulatory body and independence of the regulatory body.

Austria conducted a self-assessment in preparation for the mission and prepared a preliminary action plan. The results of the self-assessment and supporting documentation were provided to the IRRS team as ARM for the mission. During the mission the IRRS team performed a systematic review of all topics within the agreed scope through review of Austria's ARM, conduct of interviews with management and staff from BMNT, BMBWF and BMASGK and

[1] In this context, and in this report, *the regulatory body* means the three ministries BMNT + BMBWF + BMASGK

direct observation of regulatory activities at regulated facilities. Meetings with the Directors General of BMNT, BMBWF and BMASGK were also organized.

All through the mission the IRRS team received excellent support and cooperation from the relevant Austrian Ministries.

II. OBJECTIVE AND SCOPE

The purpose of this IRRS mission was to review the Austrian nuclear and radiation safety regulatory framework and activities against the relevant IAEA safety standards to report on regulatory effectiveness and to exchange information and experience in the areas covered by the IRRS. The agreed scope of this IRRS review included all facilities and activities regulated in Austria at the federal level with the exception of the radioacitve waste management facility (NES). It is expected that this IRRS mission will facilitate regulatory improvements in Austria and other Member States, utilising the knowledge gained and the experiences shared between Austrian counterparts and IRRS reviewers and the evaluation of the Austrian regulatory framework for nuclear and radiation safety.

The key objectives of this mission were to enhance the national legal, governmental and regulatory framework for nuclear and radiation safety, and national arrangements for emergency preparedness and response through:

a) providing an opportunity for continuous improvement of the national regulatory body through an integrated process of self-assessment and review;

b) providing the host country (regulatory body and governmental authorities) with a review of its regulatory technical and policy issues;

c) providing the host country (regulatory body and governmental authorities) with an objective evaluation of its regulatory infrastructure with respect to IAEA safety standards;

d) promoting the sharing of experience and exchange of lessons learned among senior regulators;

e) providing key staff in the host country with an opportunity to discuss regulatory practices with IRRS team members who have experience of other regulatory practices in the same field;

f) providing the host country with recommendations and suggestions for improvement;

g) providing other states with information regarding good practices identified in the course of the review;

h) providing reviewers from Member States and IAEA staff with opportunities to observe different approaches to regulatory oversight and to broaden knowledge in their own field (mutual learning process);

i) contributing to the harmonization of regulatory approaches among states;

j) promoting the application of IAEA Safety Requirements; and

k) providing feedback on the use and application IAEA safety standards.

III. BASIS FOR THE REVIEW

A) PREPARATORY WORK AND IAEA REVIEW TEAM

At the request of the Government of Austria, a preparatory meeting for the IRRS mission was conducted from 30 to 31 January 2018. The preparatory meeting was carried out by the appointed Team Leader Mr Mika Markkanen, Deputy Team Leader Mr Andrej Stritar and the IRRS IAEA Team representatives, Team Coordinator Mr Hilaire Mansoux and Deputy Team Coordinator Mr Géza Macsuga.

The IRRS mission preparatory team had discussions regarding regulatory programmes and policy issues with the senior management of BMNT, BMBWF and BMASGK represented by, Mr Elmar Pichl, Director General of BMBWF, Mr Manfred Ditto, Deputy Director General of BMASGK and other senior management and staff from the three ministries. It was agreed that the regulatory framework with respect to the following facilities and activities would be reviewed during the IRRS mission in terms of compliance with the applicable IAEA safety requirements and compatibility with the respective safety guides

- Research Reactor;
- Radiation sources facilities and activities regulated at the federal level;
- Control of medical exposure;
- Occupational radiation protection;
- Public exposure control;
- Selected policy issues.

Mr Andreas Molin, Director at BMNT made a presentation on the national context, the current status of the national regulatory infrastructure and the self-assessment results to date.

IAEA staff presented the IRRS principles, process and methodology. This was followed by a discussion on the tentative work plan for the implementation of the IRRS in Austria in June/July 2018.

The proposed composition of the IRRS team was discussed and tentatively confirmed. Logistics including meeting and work places, counterparts and Liaison Officer identification, proposed site visits, lodging and transportation arrangements were also addressed.

The Liaison Officer for the IRRS mission was confirmed as Mr Andreas Molin, Director at BMNT.

Austria provided IAEA with the ARM for the review in April 2018. In preparation for the mission, the IAEA team members reviewed the Austrian ARM and provided their initial impressions to the IAEA Team Coordinator prior to the commencement of the IRRS mission.

B) REFERENCES FOR THE REVIEW

The relevant IAEA safety standards were used as review criteria. The complete list of IAEA publications used as the references for this mission is provided in Appendix VIII.

C) CONDUCT OF THE REVIEW

The initial IRRS team meeting took place on Sunday 24 June, 2018 in Vienna, directed by the IRRS Team Leader and the IRRS IAEA Team Coordinator. Discussions encompassed the general overview, the scope and specific issues of the mission, clarified the bases for the review and the background, context and objectives of the IRRS programme. The understanding of the methodology for review was reinforced. The agenda for the mission was presented to the IRRS team. As required by the IRRS Guidelines, the reviewers presented their initial impressions of the ARM and highlighted significant issues to be addressed during the mission.

The host country Liaison Officer was present at the initial IRRS team meeting, in accordance with the IRRS Guidelines, and presented logistical arrangements planned for the mission.

The IRRS entrance meeting was held on Monday 25 June, 2018 with the participation of BMNT, BMBWF and BMASGK senior management and staff. Opening remarks were made by Director General Mr Elmar Pichl from BMBWF, Mr Mika Markkanen, IRRS Team Leader and Mr Hilaire Mansoux, IRRS Team Coordinator. Mr Andreas Molin, the host country Liaison Officer gave an overview of the Austrian context, activities and the results of the pre-mission self-assessment.

During the IRRS mission, a review was conducted for all review areas within the agreed scope with the objective of providing Austria with recommendations and suggestions for improvement and where appropriate, identifying good practices. The review was conducted through meetings, interviews and discussions, visits to facilities and direct observations regarding the national legal, governmental and regulatory framework for safety. Policy issues were also discussed relating to the independence of the regulatory body and the establishment of an integrated regulatory body.

The IRRS review team performed its review according to the mission programme given in Appendix III.

The IRRS exit meeting was held on Tuesday 3 July, 2018. The presentation of the results of the mission by the IRRS Team Leader Mr Mika Markkanen was followed by remarks by Director General Mr Günter Liebel from BMNT. Closing remarks were made by Mr Juan Carlos Lentijo, Deputy Director General, Department of Nuclear Safety and Security, IAEA.

An IAEA press release was issued.

1. RESPONSIBILITIES AND FUNCTIONS OF THE GOVERNMENT

1.1. NATIONAL POLICY AND STRATEGY FOR SAFETY

The legally binding framework for safety in Austria includes the federal state administration laws, on the one hand, and specific nuclear safety and radiation protection legislation and regulations, on the other hand. Beside the binding legislation, policies and strategies are an inherent part of the state governance.

Although most elements are embedded into the existing legislation, a comprehensive national policy and strategy for safety has not yet been established. Some elements are present only in the general part of the legislation, not adjusted to the specific area of safe use of nuclear energy and ionizing radiation (for example provision of resources, framework for research and development).

Not all the safety principles as per IAEA SF-1 are fully transposed into the framework for safety. For example, in case of the principle of leadership for safety the aspect of promotion of safety culture is not explicitly reflected in existing legislation.

Missing dedicated national policy and strategy for safety was also indicated as a finding in the self-assessment prior the IRRS mission and represents a specific item in the Initial Action Plan.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: A comprehensive national policy and strategy for safety has not been established yet. Not all the fundamental safety principles as per IAEA SF-1 are fully embedded into the national framework for safety.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 1 states that** "*The government shall establish a national policy and strategy for safety, the implementation of which shall be subject to a graded approach in accordance with national circumstances and with the radiation risks associated with facilities and activities, to achieve the fundamental safety objective and to apply the fundamental safety principles established in the Safety Fundamentals.*"
R1	**Recommendation: The Government should establish a national policy and strategy for safety to express its long-term commitment to safety and ensure that fundamental safety objective and fundamental safety principles as per IAEA SF-1 are fully embedded into the national framework for safety.**

1.2. ESTABLISHMENT OF A FRAMEWORK FOR SAFETY

The legally binding framework for safety in Austria comprises the areas of radiation protection, installation safety, transport safety, emergency preparedness and response, safeguards and physical protection of nuclear material and nuclear facilities. Austria is a federal state, therefore, a number of federal, provincial and district authorities are involved in the regulation. Federal laws give clear distribution of responsibilities for regulation of different facilities/activities.

The most important elements of the legal framework for safety include the federal state administration laws, on one hand, and specific nuclear and radiation protection legislation and regulations, on the other hand. The first set comprises the:

- Federal Constitutional Law;
- Federal Ministries Act;
- Federal Law on the Rules of Procedure of the National Council;
- General Administrative Procedure Act;
- Federal Act on the Federal Law Gazette;
- Administrative Penal Act;
- Administrative Enforcement Act;
- Rules of Procedure of the Federal Council.

The legislation specifically related to nuclear and radiation safety comprises the:

- Radiation Protection Act (the Act);
- General Radiation Protection Ordinance;
- Medical Radiation Protection Ordinance;
- Natural Radiation Sources Ordinance;
- Intervention Ordinance.

Since regulatory oversight in Austria is distributed to a number of federal and provincial administrative bodies, consistent and up-to date legislation is one of the key pre-requisites for consistent and effective regulatory oversight. Practically all the pieces of legislation received a number of amendments throughout the years. The majority of these changes were initiated to align it with the binding Euratom Directives. Substantial modernization of the legislative framework for safety is planned to be done in several steps. The first step to align legislation with recently issued Euratom Directives, mainly the European Basic Safety Standards, has already been started. This effort includes not only the Act, but also relevant Ordinances. The IRRS team was informed that the next step may also include changes in the regulatory framework (for details see Module 3.2). Specifically, for the quite distributed regulatory framework in Austria, the new legislation shall contribute not only to higher protection against harmful effects of ionizing radiation but also to consistency and stability of regulation.

1.3. ESTABLISHMENT OF A REGULATORY BODY AND ITS INDEPENDENCE

The nuclear and radiation safety regulatory body in Austria is formed by a system of authorities. The responsibilities for nuclear and radiation safety are allocated by the Act.

The Austrian constitution stipulates that each action by government must be based on the law. The Act and its ordinances demand a strict radiation protection regime. Nevertheless, the IRRS team has recognized the potential for conflict of interests when making regulatory decisions at each of the three key federal ministries performing regulatory functions at the federal level (BMNT, BMBWF and BMASGK).

This applies to the Austrian Centralized Waste Management Facility (Nuclear Engineering Seibersdorf – NES) and the research reactor. In both cases, the ministers are the regulatory authorities as well as the authorities that channel the funding to the institutions. This duality is capable to potentially cause a conflict of interest. The IRRS team was informed that this setup has so far had no effect on the performance and on the decisions of the regulatory body. Nevertheless, it cannot be excluded, that it might have an impact on the independent decision-making processes in the future.

Human and financial resources for the regulatory body are provided as for all other state administration in accordance with the budget law. At present, the three ministries involved in majority of the regulatory activities at federal level (BMNT, BMBWF and BMASGK) have a total staff of approximately 25 persons.

Due to relatively small areas of responsibility assigned to the existing federal regulatory authorities, the IRRS team has recognized potential synergies if all these three authorities would be merged into a single one. Instead of having one expert in each authority covering the same technical area at different facilities/activities one person could do that for all facilities/activities. Only one management system would need to be developed instead of three, there would only be one administrative and logistical support needed (secretaries, archive, financial department, human resources department etc.) and it would be easier to achieve good public and stakeholder recognition of only one federal radiation protection authority instead of three.

While the elimination of the potential conflict of interest is paramount, a review on how to increase effectiveness and efficiency of the regulatory oversight might also be beneficial to the system. Through a reorganization of the existing fragmented system of several regulatory authorities into a simpler structure, more efficient use of available resources and less effort on coordination may be achieved.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: At the federal level three ministries are performing most of the regulatory functions. There are potential conflicts of interest in all of them as the same ministries also take care about the operational aspects of some of their authorized parties. In addition, existence of three different regulatory authorities is counterproductive from the perspective of efficient use of available resources.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 4 states that** *"The government shall ensure that the regulatory body is effectively independent in its safety related decision making and that it has functional separation from entities having responsibilities or interests that could unduly influence its decision making."*
(2)	**BASIS: GSR Part 1 (Rev 1) Requirement 4 para 2.8 states that** *"To be effectively independent from undue influences on its decision making, the regulatory body:* *a. Shall have sufficient authority and sufficient competent staff;* *b. Shall have access to sufficient financial resources for the proper and timely discharge of its assigned responsibilities..."*
(3)	**BASIS: GSR Part 1 (Rev 1) Requirement 3 states that** *"The government through the legal system, shall establish and maintain a regulatory body, and shall confer on it the legal authority and provide it with the competence and the resources necessary to fulfil its statutory obligation for the regulatory control of facilities and activities."*
R2	**Recommendation: The Government should review the regulatory framework at the federal level to avoid any potential conflict of interest and to ensure the appropriate independence in the discharge of safety related**

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
	regulatory functions.
S1	**Suggestion: The Government should consider reorganizing the existing fragmented system of several federal regulatory authorities into a simpler structure that would allow for a more efficient use of available resources.**

1.4. RESPONSIBILITY FOR SAFETY AND COMPLIANCE WITH REGULATIONS

The prime responsibility of authorized parties for safety is stated in the Act and further developed in the General Radiation Protection Ordinance and the Medical Radiation Protection Ordinance.

However, a provision that compliance with regulations and requirements does not relieve the person or organization responsible for a facility or an activity of its prime responsibility for safety is not included in the existing legislation.

This was identified as a finding in the self-assessment prior the IRRS mission and modification of relevant legislation represents a specific item in the Initial Action Plan.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: The principle of prime responsibility for safety is not fully transposed into the legislation.	
(1)	**BASIS: SF-1 Principle 1 states that** *"The prime responsibility for safety must rest with the person or organisation responsible for facilities and activities that give arise to radiation risks."*
(2)	**BASIS: GSR Part 1 (Rev 1) Requirement 6 states that** *"The government shall stipulate that compliance with regulations and requirements established or adopted by the regulatory body does not relieve the person or organization responsible for a facility or an activity of its prime responsibility for safety."*
S2	**Suggestion: The Government should consider explicitly stating in the legal framework that the compliance with regulations and requirements established or adopted by the regulatory body does not relieve the person or organization responsible for a facility or an activity of its prime responsibility for safety.**

1.5. COORDINATION OF AUTHORITIES WITH RESPONSIBILITIES FOR SAFETY WITHIN THE REGULATORY FRAMEWORK

Austria is by its constitution a federal country, where its nine provinces have very high degree of self-governance. The federal legal framework for radiation protection is legally binding for all its provinces, however provincial governments have significant freedom to organize themselves how to implement federal laws. In the area of radiation protection and nuclear

safety this means that each province has its own respective regulatory authority, each of them performing certain regulatory functions. Each provincial radiation protection authority employs several experts with the expertise in radiation protection, which serve as the technical base for the support of regulatory decisions.

In addition, provinces are further divided into administrative districts, each with their local district authorities. Some of the regulatory functions mainly related to simpler radiation practices are entrusted also to these local district authorities.

Altogether there are about 120 different regulatory authorities performing regulatory functions in the field of radiation protection and nuclear safety in Austria.

Such a distribution of authorities could lead to complex situations, where the interfaces and communication between authorities could be a challenge. For example, at the site of Seibersdorf there is a multiplicity of authorized parties with respective regulatory bodies: the radioactive waste management facility is regulated by BMNT, the cyclotron for producing isotopes is regulated by BMASGK, the Austrian Institute of Technology is regulated by the provincial radiation protection authority and the commercial irradiation facility is regulated by the district authority.

It was explained to the IRRS team that provincial regulatory authorities have each their own organizational structure and are free to organize their work as they consider it appropriate. Federal authorities have no right to influence the organizational structure, but may issue directives on the regulation of facilities and activities to ensure harmonization.

However, currently this is not done as frequently and systematically as it might be appropriate. This could lead to different protection measures against harm from ionizing radiation in similar cases across the country. The IRRS team was informed that provinces have made some steps toward harmonization of their practices in a form of an annual conference and workshops. In preparation to such event, each provincial radiation protection authority can address to all the other provincial and the federal authorities (BMNT and BMASGK) a question regarding certain pending issues. During the event, issues raised are being discussed and conclusions are summarized in the form of an event protocol. These minutes are distributed to all authorities to serve as a guidance for the future.

The IRRS team has seen the protocol of the latest of these meetings and has recognized that such practice is a useful contribution towards harmonization of regulatory practices throughout the country.

The IRRS team has recognized this practice as a good step towards the harmonization of regulatory practices in all provinces. However, there is still room for further improvements especially in the development of mutually agreed guidelines for development of management systems of provincial radiation protection authorities, competence management, development of training activities, internal operating procedures including inspection procedures etc. Such coordination would assist in achieving national consistency and in enabling provincial authorities to benefit from each other’s experience. Federal authorities could actively contribute to such improvements by initiating more harmonization processes that improve collaboration between all authorities.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES
Observation: There is a large number of authorities in Austria at different levels of state administration performing regulatory activities in the radiation protection field, however

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
there are only limited efforts to harmonize their regulatory practices. There is a potential that the same kind of radiation practice or the same kind of source would be regulated differently in different parts of the country.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 7 states that** *"Where several authorities have responsibilities for safety within the regulatory framework for safety, the government shall make provision for the effective coordination of their regulatory functions, to avoid any omissions or undue duplication and to avoid conflicting requirements being placed on authorized parties."*
(2)	**BASIS: GSR Part 1 (Rev 1) Requirement 7, para 2.18 states that** *"Where several authorities have responsibilities for safety within the regulatory framework for safety, the responsibilities and functions of each authority shall be clearly specified in the relevant legislation. The government shall ensure that there is appropriate coordination of and liaison between the various authorities concerned."*
S3	**Suggestion: The regulatory body should consider further harmonizing regulatory practices among all authorities involved in regulatory control.**

1.6. SYSTEM FOR PROTECTIVE ACTIONS TO REDUCE EXISTING OR UNREGULATED RADIATION RISKS

Protective actions to reduce undue risks associated with various types of unregulated sources are described in the Act.

Interventions in emergency as well as in existing exposure situations are required by the Intervention Ordinance. Existing exposure situations are separately treated for situations following a radiological emergency and for situations resulting from past activities.

Arrangements in place for regaining control over orphan sources are set by the Act and the Intervention Ordinance. Specifically, the Act regulates the cases of loss and finding of radioactive sources including notification requirements, procedures, responsibilities, security measures and financial questions. In addition, loss, theft and finding of radioactive sources (especially dangerous sources) is a radiological emergency until the source is secured. The Intervention Ordinance regulates the emergency procedures, if necessary implementing the protective actions, information of the public and additional notification and information requirements. Based on the Intervention Ordinance an emergency response plan focusing on incidents/accidents with dangerous sources has been elaborated.

Austria also has provisions for detecting radioactive substances and radioactively contaminated substances in materials intended for recycling or for disposal. Many conventional waste management companies, scrap merchants and steel industry companies made precautions in their own interest due to economic pressure. For example, many of them installed a monitoring system at the drive in to their company to detect radioactive materials.

1.7. PROVISIONS FOR THE DECOMMISSIONING OF FACILITIES AND THE MANAGEMENT OF RADIOACTIVE WASTE AND OF SPENT FUEL

The Act formulates the policy for the management of radioactive waste and the requirements on a National Waste Management Programme. It is stated in the Act, that Austria shall bear the ultimate responsibility for the safe disposal of radioactive waste arising in its territory. This is also applicable if radioactive waste is transported to another state for processing or recycling.

By the Act, the federal government is obliged to establish a national programme for the management of radioactive waste that takes into account the principles above. The National Waste Management Programme, among others, shall include the significant milestones and clear timeframes for the achievement of those milestones; the inventory of all radioactive waste and estimates for future quantities; the concepts and technical solutions for radioactive waste management from production to disposal; the responsibility for the implementation and the key performance indicators to monitor progress; the applicable financial arrangements; the concepts for the post-closure period of a disposal facility's lifetime.

The National Waste Management Programme has been drafted. As a next step, the Programme will be subject of a strategic environmental assessment according to the Act. It is warranted with this measure that the public has the necessary opportunities to follow the proceedings.

Policy and strategy for decommissioning is set by the Act and implementing Ordinances.

The General Radiation Protection Ordinance states that decommissioning must be based on the decommissioning concept of the authorized facility. For the research reactor, decommissioning must be in accordance with the provisions of the IAEA Safety Standard SSR-3.

Lack of a National Waste Management Programme was also indicated as a finding in the self-assessment prior the IRRS mission and represents a specific item in the Initial Action Plan.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: The National Waste Management Programme only exists as a draft version at the time of the IRRS Mission.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 10 para. 2.28 states that** *"The decommissioning of facilities and the safe management and disposal of radioactive waste shall constitute essential elements of governmental policy and the corresponding strategy over the lifetime of facilities and the duration of activities."*
(2)	**BASIS: GSR Part 5 Requirement 2 states that** *"To ensure the effective management and control of radioactive waste, the government shall ensure that a national policy and a strategy for radioactive waste management are established."*
S4	**Suggestion: The Government should consider establishing the National Waste Management Programme.**

1.8. COMPETENCE FOR SAFETY

The General Radiation Protection Ordinance sets the requirements on education and training in the medical field, in the non-medical sector, in the field of waste management facilities, in the field of research reactors and on recognition of training. The Ordinance also contains stipulations on retraining. The required education and training of medical physicists are set by the Medical Radiation Protection Ordinance.

The Civil Service Administration Act requires training as part of the personnel individual performance review. Radiation protection training is also determined in this framework.

The Act makes provisions at several instances on the competence and training of persons working for authorized parties.

In general, where specialized competence is missing, both the authorities and authorized parties use experts from other countries, in majority from Germany.

1.9. PROVISION OF TECHNICAL SERVICES

Technical services in this context include dosimetry services, environmental monitoring and calibration of equipment.

For the dosimetry services the Act requires that exposure of occupationally exposed persons shall be monitored systematically. At least for occupationally exposed persons belonging to category A, monitoring must be based on individual measurements. The analysis of this individual dose monitoring and of incorporation monitoring may only be conducted by an approved dosimetry service. The Act states that a dosimetry service is considered approved if it is authorized pursuant to the Metrology Act. An accreditation pursuant to the Accreditation Act shall be equal to such an authorization.

The General Radiation Protection Ordinance also requires personal dosimetry. It is stated that for individual measurements dosimeters shall be used the reading of which cannot be deleted without damage and/or using without special auxiliary tools. These dosimeters shall be obtained from a dosimetry service authorized to provide them, shall be replaced by this dosimetry service at regular intervals, which generally shall be once every calendar month, and shall be transmitted to this dosimetry service for analysis without undue delay.

For the environmental monitoring the Act requires that BMNT shall establish and operate an automated radiation early warning system. In addition, a laboratory-based environmental monitoring system shall be operated in which supplementary measurements shall be performed on the basis of sampling. Both ubiquitous routine and special-focus ad-hoc investigations shall be carried out. The outsourced organizational units of the federal government, in which BMNT or BMASGK exercise shareholder rights, shall be consulted for this. Other institutions that are appropriate in view of their responsibilities as well as the Central Institute for Meteorology and Geodynamics shall support the above-mentioned authorities with sample collection. In the event of a large-scale radioactive contamination, the BMNT shall also consult other institutions that are appropriate in view of their responsibilities.

For the equipment calibration the Act requires that measuring equipment that is operated in the radiation early warning system or in the laboratory-based environmental monitoring system shall be calibrated prior to acceptance into service and at regular recurring intervals in accordance with the state of technology. For calibration of the measuring equipment BMNT shall consult accredited bodies or the Austrian Federal Office of Metrology and Surveying. In

addition, the laboratory-based environmental monitoring system shall be integrated into inter-laboratory comparisons.

1.10. SUMMARY

Austria has established a legal framework that in great majority fully meets requirements set forth by IAEA safety standards. However, there are some areas where further improvements are possible.

The Government has not promulgated a national policy and strategy on nuclear safety, although some elements are embedded into the existing legislation.

At the federal level three ministries perform the regulatory functions. There is a potential conflict of interest in each of them as the same ministry also takes care about the operational aspects of some of their authorized parties. In addition, for the facilities and activities in Austria, the existence of three different regulatory authorities may be counterproductive from the perspective of efficient use of available resources.

The prime responsibility for safety is not reflected fully in the legislation.

The regulatory body should consider further harmonizing regulatory practices among all authorities involved in regulatory control.

A national policy and strategy for radioactive waste management was not promulgated yet.

2. THE GLOBAL SAFETY REGIME

2.1. INTERNATIONAL OBLIGATIONS AND ARRANGEMENTS FOR INTERNATIONAL COOPERATION

Austria participates in many international arrangements intended to promote international cooperation and assistance to enhance nuclear and radiation safety.

In this context Austria is a signatory party of all relevant international conventions that establish common obligations and mechanisms for ensuring protection of safety. In specific Austria has signed, ratified, and actively participates in the:

- Convention on the Physical Protection of Nuclear Material;
- Amendment to the Convention on the Physical Protection of Nuclear Material;
- Convention on Early Notification of a Nuclear Accident;
- Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency;
- Convention on Nuclear Safety;
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Austria follows the requirements by the codes of conduct that promote the adoption of good practices in the relevant facilities and activities. In specific Austria has implemented the IAEA:

- Code of Conduct on the Safety and Security of Radioactive Sources;
- Code of Conduct on the Safety of Research Reactors.

Austria has invited the present IRRS mission in order to have a peer review of the regulatory control and safety of the research reactor and of the radioactive sources related to medical activities. This is the first peer review service invited to Austria. Although there is a plan to invite ARTEMIS to peer review the area of waste management safety, Austria would also benefit from invitation of peer review services for other areas of peaceful use of nuclear energy and ionizing radiation, such as emergency preparedness and response (EPREV service of the IAEA) or physical protection and security (IPPAS service of the IAEA).

Austria conducts regular multilateral and bilateral cooperation with the relevant international organizations and with its neighbouring and other partner countries to enhance safety and to share knowledge and experience in safety reviews and inspections. Specifically, Austria is, amongst others, a member of the following relevant international organizations:

- International Atomic Energy Agency (IAEA);
- OECD Nuclear Energy Agency (NEA);
- European Nuclear Safety Regulators Group (ENSREG);
- Heads of European Radiological Protection Competent Authorities (HERCA).

Austria has bilateral agreements and regular information exchange with twelve countries including all neighbouring states except Italy.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: There is only very limited use of international peer review services.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 14 states that** *"The government shall fulfil its respective international obligations, participate in the relevant*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
	international arrangements, including international peer reviews, and promote international cooperation and assistance to enhance safety globally."
S5	**Suggestion: The Government should consider making more use of international peer review services to share knowledge and experience and receive feedback on existing national safety arrangements.**

2.2. SHARING OF OPERATING EXPERIENCE AND REGULATORY EXPERIENCE

Austria's only nuclear facility is the TRIGA Mark-II Research Reactor, operated by the Technische Universität Wien. The authorized party is obliged to report any incidents of safety significance to the regulatory body. In addition, the reactor operator is a member of the incident reporting system of the IAEA (IRSRR) and has established a model reporting and evaluation system, which has been transferred to other TRIGA reactor operators through IRSRR.

Operational experience is collected and shared among the TRIGA reactor operators worldwide as well as through the IAEA with the international research reactor community. The Atominstitut (an institute of the Technische Universität Wien, operating the research reactor) is a member of the:

- TRIGA community (meets regularly);
- Arbeitsgemeinschaft Forschungsreaktoren (AFR - meets twice a year);
- Research Reactor Operators Group (RROG - meets once a year);
- Research Reactor Fuel Management Group (RRFM - meets once a year);
- International Group on Research Reactor (IGORR - meets every 18 month);
- European Atomic Energy Society (EAES - meets once a year);
- International Nuclear Security Education Network (INSEN – meets yearly).

These communities and meetings provide ample occasions for receiving information and sharing lessons learned on operating experience of other countries and authorized parties.

All the above mentioned activities are driven by the operating organization. The BMBWF has a process established to manage the operational experience at the TRIGA Mark-II Research Reactor. The regulatory authority of the research reactor takes part in bilateral and multilateral meetings. During these meetings information and experience are exchanged in order to deduce the relevant lessons learned. Since March 2017 the BMBWF is a participant of an international information exchange meeting with other research reactor regulatory authorities from Belgium, Germany and the Netherlands. This forum shall meet biannually and discuss regulatory experience in research reactor oversight, in the application of graded approach, and assist in exchanging information on challenges and good practices.

Results of event investigations or information on incidents in medical applications are distributed among radiation therapy facility and cyclotrons for production of radiopharmaceuticals (radionuclides) on a case-by-case basis.

A formal process for systematic analysis of operating and regulatory experience (national and international) has not been established in any of the regulated areas, to facilitate the identification of lessons to be learned, the dissemination of these lessons, and their use by authorized parties, the regulatory body and other relevant authorities.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: There are limited arrangements in place at the level of the regulatory body for systematic analysis of operating experiences and for collection of information about such experiences from international databases.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 15 states that** *"The regulatory body shall make arrangements for analysis to be carried out to identify lessons to be learned from operating experience and regulatory experience, including experience in other States, and for the dissemination of the lessons learned and for their use by authorized parties, the regulatory body and other relevant authorities."*
R3	**Recommendation: The regulatory body should make arrangements for using operating and regulatory experience feedback in a structured and systematic way, including feedback on measures taken in response to information received.**

2.3. SUMMARY

The IRRS team acknowledged that Austria has a high level of international cooperation relative to the size of its programme. The regulatory body fulfils its international obligations by participating in the relevant international arrangements, although it is recommended to increase the use of international peer reviews to benchmark national framework for safety with best international practices. Also, activities related to operating and regulatory experience feedback to the regulatory body are not deployed in a structured and systematic way in line with the international good practices.

3. RESPONSIBILITIES AND FUNCTIONS OF THE REGULATORY BODY

3.1. ORGANIZATIONAL STRUCTURE OF THE REGULATORY BODY AND ALLOCATION OF RESOURCES

In Austria, the legislative and executive powers are divided between the federal state and the provinces.

The scope of the mission was limited to the federal level, where the regulatory responsibilities are allocated by the Act as follows:

- The Federal Ministry of Education, Science and Research (BMBWF) is the regulatory authority for the TRIGA Mark-II Research Reactor and three accelerators at the universities, as well as a small number of X-ray facilities and sources in connection with the reactor or the accelerators;
- The Federal Ministry of Labour, Social Affairs, Health and Consumer Protection (BMASGK) is the regulatory authority for particle accelerators that are used for the irradiation of patients or the production of radiopharmaceuticals, issuance of the type approvals of devices intended for medical use, the authorizations and the recognition of the training of medical physicists;
- The Federal Ministry of Sustainability and Tourism (BMNT) is the regulatory authority in all other civilian nuclear and radiation safety matters falling into the scope of the IRRS mission.

The actual organizational layout is defined by the Federal Ministries Act.

In general, the provincial authorities are responsible for the implementation of Parts I - III of the Act, except where the law explicitly provides that another authority is in charge.

Having such a fragmented structure of regulatory authorities at federal and provincial level, there is a clear need of ensuring the consistency and stability of the regulation.

This issue of harmonization of regulatory practices is addressed in Suggestion S3 in Section 1.5.

The policy issue discussions took place on 29 June 2018. Experts of the host counterparts and IRRS team members participated in the discussions. The host counterparts wished to collect the international experience and views of the IRRS team regarding the topics of (1) independence of the regulatory body and (2) creation of an integrated regulatory body.

The discussion goal was to identify governmental and regulatory policy aspects and criteria for assuring the independence of the regulatory body for nuclear and radiation safety and creation of an integrated regulatory body. Background information in both topical areas was attached to the IRRS ARM Summary Report.

I. Independence of the regulatory body

IAEA Safety Standard GSR Part 1 (Rev 1) contains requirements on the independence of the regulatory body. Requirement 4 states that "*The government shall ensure that the regulatory body is effectively independent in its safety related decision making and that it has functional separation from entities having responsibilities or interests that could unduly*

influence its decision making". Requirement 17 states that "*The regulatory body shall perform its functions in a manner that does not compromise its effective independence*".

The regulatory authorities having responsibilities in ensuring nuclear and radiation safety in Austria have a full understanding of the requirements above and in the framework of the self-assessment process preceding the IRRS mission a thorough analysis of the effective independence of the Austrian regulatory body has been performed.

The affected Austrian regulatory authorities looked for relevant advice and good practices of the IRRS team on the following questions:

1) How serious does the international community consider the infringement of effective independence present in the Austrian practice?
2) What could be the legal and/or institutional means of eliminating the potential conflicts of interest implied by the actual Austrian situation?
3) What practical steps could or should be taken in the short run, if legal or institutional changes require a longer period of time?
4) What is the related experience of the team in handling such situations?

Discussions are summarized below. Independence is not only a question of legislative provisions, but this should also be built through the behaviour, actions of the regulatory body and its relationship with authorized parties and the public. Full independence is all but impossible to establish within a governmental structure, but the higher the level to which the regulatory body is attached to, the higher level of independence can be assured. On the other hand, a strong link to the government is very important to manage and maintain the everyday operation of the regulatory body and also to establish good relationship to and cooperation with other organizations of the government. Regulatory decisions are generally made not in isolation, as consequences of regulatory decisions on granting or withdrawal of a licence may affect other areas as well.

Institutional issues and legislative bases clearly have to be separated from other organizational and operational issues. Independence is also important from the point of view of accountability for the regulatory functions, decisions and operation, as well as funding of the regulatory body.

II. Creation of an integrated regulatory body

Legal framework prescribes how competencies are divided among various Austrian authorities due to the principle of federalism in the constitution. Although the actual regulatory regime fulfils its roles and discharges its responsibilities, there are aspects that indicate the practicability of and potential in considering integration of the regulatory functions. Moreover, the Government of Austria has put in its programme the establishment of an integrated regulatory body for nuclear and radiation safety for facilities and activities regulated at the federal level.

The main advantages of an integrated regulatory body are represented by increased coordination, coherence and synergy in the oversight of the facilities and activities; concentrated pool of human and financial resources; the effective independence from any unwanted influence and avoidance from conflicting responsibilities must be taken into consideration when creating an integrated regulatory body.

The affected Austrian regulatory authorities looked for relevant advice and good practices of the international experts of the IRRS team. The following questions were discussed:

1) What is the experience of the team members in creating and exercising integrated regulatory responsibilities and roles?
2) What model of an integrated regulatory body would best suit Austria, taking into account its federal state structure?
3) What would be the time slot necessary for preparations to such a transition?
4) What practical advice could be offered regarding the functioning of the regulator during the transition period?

Discussions are summarized below. The divided structure does not allow for an optimal operation of each regulatory body in all areas that are important for an effective and efficient regulator, such as education and training, knowledge management, capacity building, experience feedback and sharing, allocation of resources, etc. While maintaining the historical federal structure, the greatest benefit of joining the separated regulatory bodies at the federal level would be through the thereby created synergy effect. For example, bringing together financial and material resources currently being provided separately to the separated regulatory authorities, would contribute to maintaining a more sustainable regulatory system.

The transition process from the existing regime to the unified regulatory body shall be well designed to assure the safe and smooth regulatory oversight of all facilities and activities during that period.

As for the format of the future unified organization, several models can be considered for implementation. One model is to establish a regulatory organization separated from any other ministry. This would assure stability during any governmental reorganizations and independence from direct influences. However, based on international experience, such an independent organization may face challenges in communication and co-ordination with the ministries and preparation of legally binding acts.

In another model a regulatory organization could be established within one of the ministries having no responsibilities for promoting or operating nuclear or radiation facilities. It should have sufficient independence and freedom to make decisions in relation to authorizations. The advantage of such arrangement would be an easier access to other governmental structures. The minister responsible for the regulatory body could represent its positions at the highest levels of the government.

More options can be identified, but the final solution needs to be decided by Austria with the full consideration of the national legislative framework, financial opportunities, historical and other factors. Collecting experiences from other EU Member States could bring useful examples on the model and its implementation and on the transition process to be considered by Austria.

3.2. EFFECTIVE INDEPENDENCE IN THE PERFORMANCE OF REGULATORY FUNCTIONS

The main discussion on the subject of independence of the regulatory body is included in the Section 1.3, in Recommendation R2 and Suggestion 1.

In this respect the IRRS team noted that in its programme for 2017 to 2022 the new Austrian government has declared the intent to create a new integrated structure for radiation protection in regard to facilities and activities regulated at federal level. When establishing such structure, measures need to be taken to ensure that effective independence of the nuclear and radiation safety regulatory body is guaranteed.

In addition, the requirement on avoiding conflicts of interest of administrative bodies is formulated in the General Administrative Procedure Act by stating that in exercising their duties, administrative officers shall abstain from exercising their office and cause to have appointed a substitute:

- in matters in which they themselves are involved, or one of their relatives or one of the persons under their guardianship is involved;
- in matters in which they were or are appointed representative of a party;
- if there are any other important reasons resulting in doubts as to them being fully unbiased;
- in an appeal, proceeding if they were involved in issuing the ruling appealed against or the preliminary decision on appeal.

According to the General Administrative Procedure Act the stipulations above regarding conflicts of interest apply also to the experts appointed by the regulatory body to assist in their work.

According to the General Radiation Protection Ordinance, the regulatory body prescribes in the authorization conditions the designation of working areas as controlled or supervised areas and also prescribes the categorization of occupationally exposed workers as category A or category B. This may shift the responsibility for safety from the authorized party to the regulatory body. The regulatory body should refrain from assuming responsibility instead of the authorized parties.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: The regulatory body takes over the role of the authorized party for the implementation of radiation protection measures such as the designation of controlled and supervised areas and the categorization of occupationally exposed workers.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 17, para 4.9 states that** *"To maintain its effective independence, the regulatory body shall ensure that, in its liaison with interested parties, it has a clear separation from organizations or bodies that have been assigned responsibilities for facilities or activities or for their promotion."*
(2)	**BASIS: GSR Part 3 Requirement 4 states that** *"The person or organization responsible for facilities and activities that give rise to radiation risks shall have the prime responsibility for protection and safety."*
R4	**Recommendation: The regulatory body should avoid any direct or indirect involvement in the implementation of radiation protection measures in the authorized facilities and activities which may conflict with the authorized party's prime responsibility for safety.**

3.3. STAFFING AND COMPETENCE OF THE REGULATORY BODY

Organization of the regulatory body at federal level is detailed in Module 3.1. Three ministries in charge of regulatory activities have staffing of about 25 persons. As the

government currently has a freeze on recruitment, the regulatory body faces the same challenge as most public institutions worldwide in replacing staff.

In the case of BMASGK there is little turnover of staff and it is rather easy to find substitutes. The last time when a job for a physicist was advertised, there were more than ten suitable applicants. In BMBWF, the staff outlook is stable. In case of BMNT there are temporary fluctuations and sometimes it is difficult to find appropriate substitutes, since academic level education and training in radiation protection and nuclear physics has declined in the recent years.

Despite this, the regulatory authorities at federal level have not performed a systematic staffing needs analysis taking into account the number and competence of staff needed for all facilities and activities including future growth. This should include a knowledge management plan.

Human resource management is done only with use of standard procedures for government organizations, including those required by the Civil Service Act and other general rules.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: A competence needs analysis has not been carried out and there is no human resource plan in place.	
(1)	**BASIS: GSR Part 1(Rev 1) Requirement 18 states that** *"The regulatory body shall employ a sufficient number of qualified and competent staff, commensurate with the nature and the number of facilities and activities to be regulated, to perform its functions and to discharge its responsibilities."*
(2)	**BASIS: GSR Part 1 (Rev 1) Requirement 18 para. 4.11 states that** *"The regulatory body has to have appropriately qualified and competent staff. A human resources plan shall be developed that states the number of staff necessary and the essential knowledge, skills and abilities for them to perform all the necessary regulatory functions."*
(3)	**BASIS: GSR Part 1 (Rev 1) Requirement 18 para. 4.12 states that** *"The human resources plan for the regulatory body shall cover recruitment and, where relevant, rotation of staff in order to obtain staff with appropriate competence and skills, and shall include a strategy to compensate for the departure of qualified staff."*
(4)	**BASIS: GSR Part 1 (Rev 1) Requirement 18 para. 4.13 states that** *"A process shall be established to develop and maintain the necessary competence and skills of staff of the regulatory body, as an element of knowledge management. This process shall include the development of a specific training programme on the basis of an analysis of the necessary competence and skills. The training programme shall cover principles, concepts and technological aspects, as well as the procedures followed by the regulatory body for assessing applications for authorization, for inspecting facilities and activities, and for enforcing regulatory requirements."*
R5	**Recommendation: The regulatory body should develop and systematically use formal processes to assess sufficiency and competence**

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
	of staff and to ensure long term human resource and succession planning and recruitment, appropriate training and knowledge management.

3.4. LIAISON WITH ADVISORY BODIES AND SUPPORT ORGANIZATIONS

Although it is foreseen by the existing Act, regulatory authorities do not use advisory bodies. The IRRS team was informed that the need for advisory bodies is not included in the revised Act.

Some regulatory authorities use services of external technical experts both in the scope of the review and assessment as well as for inspection of facilities and activities. Selection of experts is usually based on General Administrative Procedures Act, applicable to all public administration of Austria. On selection, the expert gets a formal document (certificate of recognition) recognizing them as the qualified expert to give expert opinion on specified subject. Such certificate contains also the explanation of assurances (evidences) that have led the authority to issue that certificate. Typically, it contains the description of the candidate's education, academic achievements, work experience etc.

There are, however, no written procedures or criteria for the approval of experts in the field of radiation protection and nuclear safety. Such criteria would improve consistency, transparency and confidence in the approval of experts to support regulatory decision making.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: For the recognition of the qualification of experts who are providing services to the regulatory body, the procedure prescribed in the law about the general administrative procedures is used. There are, however, no specific written procedures or criteria set with conditions regarding competences the external expert should fulfil in order to be recognized and approved in the field of radiation protection and nuclear safety.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 20 para. 4.19 states that** *"Technical and other expert professional advice or services may be provided in several ways by experts external to the regulatory body. The regulatory body may decide to establish a dedicated support organization, in which case clear limits shall be set for the degree of control and direction by the regulatory body over the work of the support organization. Other forms of external support would require a formal contract between the regulatory body and the provider of advice or services."*
(2)	**BASIS: GSR Part 1 (Rev 1) Requirement 22 para. 4.26 states that** "*The regulatory process shall be a formal process that is based on specified policies, principles and associated criteria, and that follows specified procedures as established in the management system. The process shall ensure the stability and consistency of regulatory control and shall prevent subjectivity in decision making by the individual staff members of the regulatory body. The regulatory body shall be able to justify its decisions if they are challenged. In connection with its reviews and assessments and its inspections, the regulatory body shall inform applicants of the objectives,*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
	principles and associated criteria for safety on which its requirements, judgements and decisions are based."
(2)	**BASIS: GSR Part 1 (Rev 1) Requirement 20 para. 4.20 states that** *"Arrangements shall be made to ensure that there is no conflict of interest for those organizations that provide the regulatory body with advice or services. If this is not possible domestically, then the necessary advice or assistance shall be sought from organizations in other States or, as and where appropriate, from international organizations which have no such conflicts of interest."*
S6	**Suggestion: The regulatory body should consider establishing criteria and process for selection, approval or accreditation of external experts assuring their expertise.**

3.5. LIAISON BETWEEN THE REGULATORY BODY AND AUTHORIZED PARTIES

BMNT communicates with the authorized parties as part of inspections, licensing process, and formal/informal meetings on specific topics.

In case of BMASGK the regulatory authority communicates directly and formally with the authorized parties on all safety related issues as part of the authorization process and the inspections. Informal communication between the authority and the authorized parties also occurs if there are any concerns on safety related issues.

Formal communication by BMBWF is performed according to the respective entries in the Supervisory Handbook and to the requirements by the General Administrative Procedure Act. Informal communication occurs on an ad hoc, case-by-case basis using e-mails and other forms of telecommunication or in meetings.

In all cases communications and related documents are handled via the Electronic Business Case and File Management System (ELAK).

3.6. STABILITY AND CONSISTENCY OF REGULATORY CONTROL

The regulatory control of nuclear and radiation safety in Austria is fully determined by the Act (together with implementing Ordinances) and the General Administrative Procedures Act. These legal instruments provide the basis for regulatory supervision in decision making and in inspection and enforcement activities performed by the federal ministries involved. Further on, for each ministry a business regulation according to the Federal Ministries Act (Geschäftsordnung) exists, that describes the functioning of the ministry, including its regulatory actions.

Nevertheless, none of the regulatory authorities have established an integrated management system comprising formal procedures for conduct of their regulatory functions. For more details on the issue of management systems refer to Section 4.5.

BMBWF has developed a Supervisory Handbook that is meant to summarize the main regulatory processes and activities of the ministry for regulatory oversight of the research reactor. To a certain extent this handbook substitutes the documents required to be developed

for an integrated management system. However, not all the elements required for a management system have been integrated into the Supervisory Handbook. The other two ministries in charge of radiation safety and waste safety plan to follow this example.

Further on, the Act requires that qualified experts must be consulted with regard to fulfilment of the prerequisites of authorization. For example, the Federal Ministry of Sustainability and Tourism involves when necessary AGES (Austrian Agency for Health and Food Safety Ltd.) experts or other external experts in the regulatory review and assessment and inspection processes. The experts check the technical licensing documentation for compliance with the respective regulation requirements. This is considered as one of the measures to secure stability and consistency of the regulatory control.

3.7. SAFETY RELATED RECORDS

All registers and inventories required by the legislative framework in Austria (the Act and the General Radiation Protection Ordinance) are in operation as detailed below.

A Central Dose Register is established for all occupationally exposed persons who work in Austria and for external workers who work outside of Austria as well as for the exposure assessments to be communicated in connection with work involving natural sources of radiation. The concerned person shall be informed about the data storage. The stored data shall be disclosed to her/him upon request. The establishment and maintenance of the Central Dose Register is the responsibility of BMNT.

The Central Register of Radioactive Sources is updated regularly and is kept for all the radioactive sources that are in the authorized party's possession and located on federal territory. The Central Register of Radioactive Sources is also managed by BMNT.

Radioactive sources are recorded in the Central Register of Radioactive Sources but not the full information is stored on the devices containing the sources. X-ray generators are not included in the Central Register of Radioactive Sources.

For monitoring of external workers, the General Radiation Protection Ordinance requires that until the establishment of a Central European Radiation Protection Register, external workers must hold a complete, registered individual radiological monitoring passport.

The databases, such as the Central Dose Register and the Central Source Register are used by the regulatory body when needed, on a case-by-case basis, typically during inspections as well as when preparing various reports, on national as well as international level. Radioactive waste inventories are consulted e.g. for preparing reports to the Government or in compliance with international conventions.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: Radioactive sources are recorded in the Central Register of Radioactive Sources maintained by the BMNT but the information on the devices containing those sources is not always recorded. X-ray generators are not included either in the Central Register of Radioactive Sources.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 35 para. 4.63 states that** *"The regulatory body shall make provision for establishing and maintaining the following main registers and inventories: … Registers of sealed radioactive sources and radiation generators …"*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
S7	**Suggestion: The BMNT should consider defining which X-ray generators are to be included in the central source register and should consider expanding the information relating to sealed sources as to systematically include information on the devices containing the sources, if applicable.**

3.8. COMMUNICATION AND CONSULTATION WITH INTERESTED PARTIES

The relevant legislation requires informing and consulting the interested parties and the public about the possible risks associated with the facilities and activities and about the processes and decisions of the regulatory body. The General Radiation Protection Ordinance requires the regulatory authorities for the research reactors and for waste management facilities to make available information on their activities to the public. Similarly, it is required that the regulatory authority informs the general public on safety issues related to research reactors. In the medical field such a requirement exists regarding particle accelerators for radiotherapy with protons and carbon ions (MedAustron).

The Act also sets requirements on informing the public in advance and in case of nuclear and radiological emergencies with details of the information to publish in case of large-scale radioactive contamination.

Also, information to the public on the environmental monitoring data is required as the BMNT shall inform the public appropriately of the measurement data collected on federal territory and the derived assessments and recommendations.

The typical way of providing information to the public is through the web-sites of the regulatory authorities (in the framework of their ministries).

Communication from the public is typically received by letters, telephone calls and e-mails, addressed either to the offices or to the Ministers. Public information is performed via all the usual ways, thus by:

- distribution of brochures and flyers (e.g. on radon or on emergency preparedness);
- annual reports (e.g. on early warning system, environmental monitoring system);
- web-sites (e.g. ministries, national reports to meetings of international conventions, on-line data of the early warning system, radon concentrations).

The Act does not require consultations with inhabitants near facilities. On the other hand, the General Administrative Procedure Act details the requirements on oral hearings for interested parties. For the scheduling of an oral hearing the persons involved, to the extent they are known, shall be notified personally. If further persons could be involved, the hearing shall also be publicly announced on the official bulletin board of the municipality, by publication in the newspaper serving for official announcements of the authority, or by publication in the electronic official gazette of the authority.

Communication with the public is held when changes in the reactor core (fuel elements) of the TRIGA Mark-II Research Reactor are planned.

The Ordinance on Incident Information stipulates the information of the potentially affected public for existing facilities, which today would require an Environmental Impact Analysis to grant permission for their construction.

3.9. SUMMARY

Three ministries are responsible for regulatory activities at federal level having staff of about 25 persons. However, systematic analysis of competence or number of staff needed for regulation of existing facilities and activities have not been carried out and there is no human resource plan in place.

Although a Supervisory Handbook summarizes the main regulatory processes and activities for regulatory oversight of the TRIGA Mark-II Research Reactor, not all regulatory activities have documented procedures developed and implemented to ensure consistency in the decision-making process.

The regulatory body should consider establishing criteria and process for selection, approval or accreditation of external experts and assuring there is no conflict of interest created by their relationship with regulated parties.

4. MANAGEMENT SYSTEM OF THE REGULATORY BODY

4.1. RESPONSIBILITY AND LEADERSHIP FOR SAFETY

The senior managers in the three ministries involved in safety regulation at federal level are aware of their leadership role in the organization, including their serving as examples to the staff in upholding the general spirit of the Act and the primary safety objective, expressed in the General Radiation Protection Ordinance, to protect life and health of humans against harm resulting from ionizing radiation. Their leadership role is supported by the Rules of Procedures of the respective ministry that require the senior managers to manage their organizational units in a legal manner and in a suitable economical manner, to set priorities, to ensure appropriate coordination within the organizational unit, to provide their employees with all the information necessary and maintain the necessary exchange of information, to seriously consider the proposals made by his or her employees, to officially supervise the employees directly subordinate to him/her, to ascertain and remedy any errors and misconduct and to expressly acknowledge exemplary performance.

The management encourages the reporting of safety related problems, development of questioning and learning attitudes, and correction of acts or conditions that are adverse to safety.

The regulatory authorities consider the purpose of the Act and the Ordinances to protect life and health of humans against harm resulting from ionizing radiation, to be their primary goal.

However, no explicit safety policy has so far been established at management level of the regulatory authorities and no specific long or medium-term strategies for safety have yet been established.

These issues on safety policy and strategies for safety are addressed in Recommendation R6 in Section 4.3.

Annual goals and plans are established each year in the three ministries and are presented by the managers to all employees.

4.2. RESPONSIBILITY FOR INTEGRATION OF SAFETY INTO THE MANAGEMENT SYSTEM

For various reasons, none of the three ministries have fully established and implemented management systems aligned with their safety goals as required by the relevant IAEA safety standards. However, important decisions for the development of an integrated management system have been taken recently by all three ministries. BMBWF has issued a Supervisory Handbook as part of its management system, which includes many of the elements of a management system within the meaning of the IAEA safety requirements as applicable to its regulatory functions.

The senior managements of both BMNT, and BMASGK expressed their commitments to develop similar documents, using a graded approach, to reflect their specific responsibilities and processes, as described in the regulatory body's Initial Action Plan.

Review of the achievement of goals is performed each year for the previous year (at the same time planning for the next year is done), and actions to address deviations are taken in the following year's plan, at each ministry.

The IRRS team was informed that only the strategy for interaction with the media is formally available at all three ministries. A requirement to inform the public in regard to the TRIGA Mark-II Research Reactor and NES is provided also in the General Radiation Protection Ordinance.

This issue on strategy for interaction with interested parties is addressed in Recommendation R6 in Section 4.3.

4.3. THE MANAGEMENT SYSTEM

The existing Supervisory Handbook of the BMBWF was developed with the goal of integrating safety, health, environmental, security, quality, human-and-organizational-factors, societal and economic elements in one coherent management system document. It includes the fundamental safety objective, a description of how the management system (regulatory supervision process) complies with legal requirements that apply to the organization, as well as the description of the technical aspects of some core processes applicable to facilities and activities under the regulatory control of the BMBWF.

Several elements of the management system have not been integrated at the level of Supervisory Handbook. For instance, the integration of the security and environmental aspects with all other elements of the management system is not demonstrated clearly.

The policy statements of the regulatory body on values and behavioral expectations (yet included in the Civil Servants Employment Act), the description of the organization and its structure, responsibilities and accountabilities, levels of authority (provided in the ministry's Business Organization document and in the Rules of Procedure), as well as all the processes and their interactions are not included in the Supervisory Handbook.

Application of the graded approach, although implemented in practice, based on the high level criteria provided by the Act, is not explicitly documented in the management system documents and is not further detailed in the internal management system through guides/instructions, in order to support implementation of all criteria (e.g. the required level of qualification and training of the experts, level of approval based on the safety significance of the task, requirements on verification and inspection, etc.), as well as, for ensuring consistent implementation in all processes and for all possible cases.

Any conflicts arising in the decision making processes are addressed in accordance with the General Administrative Procedure Act and with the specific Rules of Procedures of the ministries. However, no respective formal process was yet established, as part of the management system documents.

Interfaces with external organizations are specified in respect of other Austrian ministries. The Federal Ministries Act specifies in general the performance of business concerning the powers of more than one federal ministry; e.g. communication and coordination. For BMBWF the Supervisory Handbook details the interfaces with other regulatory authorities involved in the authorization and supervision of facilities under the BMBWF responsibility (e.g. labour inspectorate, BMNT, civil construction authority).

The document control processes are well established in all ministries and are meant to provide for the preparation, review, approval, issuing, distribution, revision and validation (where appropriate) of documents essential to the management, performance and assessment of work. These processes are supported by an electronic document management system - Electronic Business Case and File Management System (ELAK).

No formal process for the management of the organizational changes was established and documented, although they were considered in practice in a limited extent.

The only relevant and official documentation of the management system developed so far is the Supervisory Handbook, issued by BMBWF. As mentioned above, the other two ministries are committed to develop and implement similar management system in the future.

These issues on integration of all elements of the management system, application of graded approach, policy statements, description of organizational structure, processes for management of organizational changes and resolution of conflicts, comprehensiveness of the management system processes, are addressed in Recommendation R6 formulated below.

These findings were also identified in the regulatory body's Initial Action Plan.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: The existing management systems of the regulatory authorities do not fully comply with the IAEA safety standards with regard to the formalization and implementation of safety policy, safety goals, strategies, integration of safety, health and environmental aspects with all other aspects, use of a graded approach, regulatory core/management and support processes, promotion of safety culture, processes for measurement, assessment and improvement of the management system, processes for resolutions of conflicts, organizational structures, responsibilities, accountabilities and level of authority, as well as identification, planning, control and management of organizational change.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 19 state that** *"The regulatory body shall establish, implement, and assess and improve a management system that is aligned with its safety goals and contributes to their achievement."*
(2)	**BASIS: GSR Part 2 Requirement 3 para 4.2 states that** *"Senior management shall be responsible for establishing safety policy."*
(3)	**BASIS: GS-G-3.1 para. 2.8 states that** *"The documentation of the management system shall include the following:* *—The policy statements of the organization."*
(4)	**BASIS: GSR Part 2 Requirement 4 states that** *"Senior management shall establish goals, strategies, plans and objectives for the organization that are consistent with the organization's safety policy."*
(5)	**BASIS: GSR Part 2 Requirement 5 para. 4.6 states *that*** *"Senior management shall identify interested parties for their organization and shall define an appropriate strategy for interaction with them."*
(6)	**BASIS: GS-G-3.1 part 5.6 states that** *"To develop the processes necessary for the effective implementation of the management system (see para. 5.13), the organization should consider the following:* *…* *management of organizational change and resolution of conflicts."*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(7)	**BASIS: GSR Part 2 Requirement 10 states that** *"Processes and activities shall be developed and shall be effectively managed to achieve the organization's goals without compromising safety."*
(8)	**BASIS: GSR Part 2 para. 4.29 states that** "*The sequencing of a process and the interactions between processes shall be specified so that safety is not compromised. Effective interaction between interfacing processes shall be ensured."*
(9)	**BASIS: GSR Part 2 Requirement 13 state that** *"The effectiveness of the management system shall be measured, assessed and improved to enhance safety performance, including minimizing the occurrence of problems relating to safety."*
(10)	**BASIS: GS-G 3.1 para. 2.7 states that** "*A robust and effective management system should support the enhancement and improvement of safety culture and the achievement of high levels of safety performance."*
R6	**Recommendation: The regulatory body should further develop and implement its integrated management system for complying fully with the requirements set out in IAEA safety standards.**

4.4. MANAGEMENT OF RESOURCES

Senior management in all three ministries have the responsibilities to determine the competences and resources necessary to carry out the activities of the organization. The individual competences are assessed and the competence requirements for individuals are specified yearly, at all levels, as part of the results of the individual appraisal interviews. Based on these results, individual training plans for the next year are developed, agreed and signed off by both the supervisor and the employee.

Senior managers are also annually given opportunities to improve their skills through management and leadership seminars and training courses offered by the Federal Academy of Administration. The IRRS team was informed that these training sessions are not tailored to the specific need of the manager regulating nuclear activities in Austria, but rather to more general knowledge on public management and governance, project management, process management, quality management, knowledge management.

There is no process in place to determine the core competencies, nor for the assessment of the training needs, that would be needed to support justification of the necessary resources in the three ministries.

The IRRS team was informed that the human resources available for the development of an integrated management system in accordance with IAEA safety standards are not sufficient.

Arrangements are in place for the regulatory authorities to access competences and resources which are not available in-house. The main legal provisions are given in the General Administrative Procedure Act on official appointment of experts, on exclusion conditions of experts and on fees of officially appointed experts.

The BMBWF's Supervisory Handbook provides details on the procedure for appointment of external experts, the tasks in which external experts can be involved, and the conditions for acceptance of their work by the regulatory authority.

This issue on management of resources is addressed in Recommendation R5 in Section 3.3.

4.5. MANAGEMENT OF PROCESSES AND ACTIVITIES

As described in sections above, the management and core processes are not developed yet neither by BMNT nor by BMASGK. The leadership for the development of the management system documents has been assumed by BMBWF. As mentioned above, BMBWF developed the Supervisory Handbook. It includes the fundamental safety objective, a description of how the management system (regulatory supervision process) complies with applicable legal requirements and, to a limited extent, the description of the technical aspects of some core processes applicable to the facilities and activities under regulatory control of BMBWF.

The processes map is not provided in the Supervisory Handbook.

The content and structure of the recently developed process procedures (e.g. process of integrated management system review, authorization, review and assessment) are not fully in line with the requirements of the IAEA safety standards (e.g. processes do not describe completely the interfaces with all other processes or other activities, graded approach and criteria for allocation of resources are not provided in the description of the processes, performance indicators were not assigned to the processes, etc.). Other processes such as, development of regulations, inspection, emergency preparedness and response, the processes for measurement, assessment and improvement of an integrated management system have not yet been developed. The supporting documentation for the implementation of the processes, such as working instructions, guides and procedures, are in a similar situation.

This issue on management of processes and activities is addressed in Recommendation R6 in Section 4.3.

The IAEA Safety Guide GS-G-3.1 provides valuable guidance for the development of all management system elements and may be used by all three ministries for further development of their management systems.

All three ministries are aware of their responsibility for safety when contracting out any processes and when receiving any item, product or service in the supply chain. The only detailed procedure for appointment of external experts, the tasks in which external experts can be involved, and the conditions for acceptance of their work by the ministries, is described in the Supervisory Handbook of BMBWF.

4.6. CULTURE FOR SAFETY

The IRRS team was informed that the management of all three ministries have established a working environment in which staff can raise safety issues without fear of harassment, intimidation, retaliation or discrimination. The management encourages the reporting of safety related problems, development of questioning and learning attitudes, and correction of acts or conditions that are adverse to safety. Managers promote the personal accountability for their attitudes and conduct with regard to safety, as well as the adherence to the provisions of the Act during periodic meetings with their staff.

However, the existing management system is not sufficiently developed in any of the three ministries for fostering and sustaining a strong safety culture. All three ministries should

further develop their management systems in order to effectively support the enhancement and improvement of safety culture and the achievement of high levels of safety performance.

This issue on culture for safety is addressed in Recommendation R6 in Section 4.3.

Further observations on the safety culture are presented in Sections 7.2 and 7.3.

4.7. MEASUREMENT, ASSESSMENT AND IMPROVEMENT

In the current practice of all three ministries the measurement, assessment and improvement of the management system is implemented to a limited extent. The IRRS team was informed that the independent assessments and self-assessments of the management system are not conducted regularly and, as mentioned above, this process is not formalized. Internal audits are performed occasionally by a unit in the Internal Revision Departments within the ministries. The audits are focused on the management of financial resources allocated to various specific projects. The ministries are subject also to external audits by the Court of Auditors. A review of management systems is not yet done systematically and not in full compliance with IAEA safety standards.

The Supervisory Handbook of the BMBWF does not address clearly and formally all the elements (including those mentioned above) needed for an effective implementation of the measurement, assessment and improvement process.

Therefore, the measurement, assessment and improvement process needs further enhancement in order to make it a valuable instrument for supporting continuous improvement of the management system. The effectiveness of the management system shall be measured, assessed and improved to enhance safety performance, including minimizing the occurrence of problems relating to safety.

This issue on measurement, assessment and improvement process is addressed in Recommendation R6 in Section 4.3.

4.8. SUMMARY

None of the three ministries has yet fully established and implemented an integrated management system that would be aligned with their safety goals as required by the relevant IAEA safety standards. However, important decisions for the development of an integrated management system have recently been taken by all three ministries. BMBWF is the most advanced in the establishment of the management system, the ministry responsible for the regulatory control of research reactor and particle accelerators in universities and the Austrian Academy of Sciences. In April 11^{th,} 2018 this ministry issued the Supervisory Handbook which includes many of the elements of a management system within the meaning of the IAEA safety standards.

The senior management of BMNT and of BMASGK expressed their commitments to develop similar documents, using a graded approach, to reflect their specific responsibilities and processes, as described in the Initial Action Plan.

Further actions should be taken by the ministries for fully satisfying the requirements set out in the IAEA safety standards, through proper formalization and implementation of safety policy, safety goals, strategies, plans, objectives, integration of safety, health, environmental and other aspects, use of a graded approach, regulatory core/management and support process, promotion of safety culture, as well as, of the processes for measurement, assessment and improvement of the management system.

5. AUTHORIZATION

5.1. GENERIC ISSUES

The Act sets forth requirements for authorization. It includes requirements on construction and testing of facilities, on operations of facilities requiring construction permits and on authorization of facilities that do not require construction permits. It also includes provisions regarding the authorization of handling of sources and for type approval of devices containing radioactive sources and/or X-ray generators.

Furthermore, the Act enables the regulatory body to exempt, by ordinance, certain handlings of sources from the obligation to obtain authorization. Some handlings are, however, required to be notified to the regulatory authorities.

The Act assigns responsibilities for regulating radiation sources among federal and provincial authorities based on the type of the regulated facilities and activities. In the cases where several authorities are responsible in the first instance for parts of an installation, the highest authority is responsible for the entire installation in the first instance. Consequently, BMBWF is authorizing all sources in the research reactor and other sources at universities in institutions, which run particle accelerators, but not at the three Medical Universities. Similarly, BMNT is in charge of all sources at NES, and BMASGK is responsible for all sources at medical facilities operating particle accelerators.

The same authorized party, such as in case of universities, may be under regulatory supervision from different regulatory authorities. This situation depends on the activities they have.

In general, two stages of authorization are stipulated for the facilities that call for the preparation and implementation of radiation protection measures during construction: a construction permit and an operation authorization. The construction permit covers siting, design and construction and allows for the installation of the equipment and running testing activities.

The IRRS team was informed that there are no guidelines for defining "the facilities that call for the preparation and implementation of radiation protection measures during construction", but basically decisions are made based on professional judgment and experience.

Although the construction permit covers the equipment testing, it has been noticed that BMBWF has issued a separate authorization for testing of a new facility. The IRRS team was informed that BMBWF issues separate authorization for testing in certain cases and such decision are made based on professional judgment and in accordance with the Act but there are limited formal guidelines or internal instructions.

For operation authorization, the Act requires, inter alia, a final safety analysis. Requirements relating to research reactors are given in the General Radiation Protection Ordinance. For some other facilities and activities regulatory guides defining the necessary content of the safety analysis exist. The IRRS team observed that this document does not fully address radiation protection measures needed for the operation of facilities and that radiation protection is in general not fully assessed prior to issuing an authorization.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES
Observation: The regulatory body has not established criteria for determining the

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
facilities that call for the preparation and implementation of radiation protection measures during construction. The regulatory body has not established guidance for the periodic safety review of the research reactor beyond the requirements set forth in the General Radiation Protection Ordinance. In addition, the regulatory body has not established guidance on the contents of the documents required in the application for authorization such as the safety analysis for all facilities and activities.	
(1)	**BASIS: GSR Part 1 (Rev 1) Requirement 24 para. 4.34 states that** *"The regulatory body shall issue guidance on the format and content of the documents to be submitted by the applicant in support of an application for an authorization. The applicant shall be required to submit or to make available to the regulatory body, in accordance with agreed timelines, all necessary safety related information as specified in advance or as requested in the authorization process."*
(2)	**BASIS: GSR Part 1 (Rev 1) Requirement 23 states that** *"Authorization by the regulatory body, including specification of the conditions necessary for safety, shall be a prerequisite for all those facilities and activities that are not either explicitly exempted or approved by means of a notification process."*
(3)	**BASIS: GSR Part 1 (Rev 1) Requirement 22 para. 4.26 states that** *"The regulatory process shall be a formal process that is based on specified policies, principles and associated criteria, and that follows specified procedures as established in the management system. The process shall ensure the stability and consistency of regulatory control and shall prevent subjectivity in decision making by the individual staff members of the regulatory body. The regulatory body shall be able to justify its decisions if they are challenged. In connection with its reviews and assessments and its inspections, the regulatory body shall inform applicants of the objectives, principles and associated criteria for safety on which its requirements, judgements and decisions are based."*
R7	**Recommendation: The regulatory body should specify criteria on which facilities need preparation and implementation of radiation protection measures during construction.**
R8	**Recommendation: The regulatory body should issue guidance on the periodic safety review beyond the requirements set forth in the General Radiation Protection Ordinance.**
R9	**Recommendation: The regulatory body should establish guidance on the format and contents of the documents required in the application for authorization such as the safety analysis for all facilities and activities.**

Provisions for future decommissioning are included in the construction permit as well as in the operation authorization and are typically included in the (preliminary and final) safety analysis report.

Any modification of a facility which introduces additional radiological risks requires an amendment of the authorization before the necessary changes are being made.

According to the Act and Ordinances, the documents required to support applications for authorization shall be developed either by the applicant or by a qualified expert. Similarly, a qualified expert's opinion is required for type approval. However, no written procedures and criteria for formal recognition of qualified experts who may be used by authorized parties have been established by any of the three federal regulatory authorities.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: Austrian legal framework requests that all authorization processes shall be supported by the opinion of qualified experts. However, no written procedures and criteria for formal recognition of qualified experts who may be used by authorized parties have been established by any of the three federal regulatory authorities.	
(1)	**BASIS: GSR Part 3 Requirement 2 para. 2.21 states that** *"The government shall ensure that requirements are established for:* *(a) Education, training, qualification and competence in protection and safety* *of all persons engaged in activities relevant to protection and safety;* *(b) The formal recognition of qualified experts;* *(c) The competence of organizations that have responsibilities relating to protection and safety."*
R10	**Recommendation: The regulatory body should establish written criteria and procedures for the formal recognition of qualified experts providing advice to authorized parties.**

According to the General Administrative Procedures Act, officially appointed qualified experts are to be primarily used. If such experts are not available, not officially appointed experts may be used. This is a common situation for both BMNT and BMBWF.

There is no requirement for an independent verification of the safety assessment conducted by the applicants, to be submitted to the regulatory body together with the safety assessment for review.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: There is no requirement for an independent verification of the safety assessment before it is used by the operating organization or submitted to the regulatory body.	
(1)	**BASIS: GSR Part 4 Requirement 21 states that** *"The operating organization shall carry out an independent verification of the safety assessment before it is used by the operating organization or submitted to the regulatory body...*"

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
R11	**Recommendation: The regulatory body should ensure that the applicant/authorized party is required to carry out independent verification of its safety assessment before it is used by the operating organization or submitted to the regulatory body.**

The General Radiation Protection Ordinance provides evidence of graded approach with regard to the authorization process as it provides for exemption from authorization and includes specific provisions for research reactors, and high activity sealed sources. However, due to the limited scope of this IRRS mission, the implementation of a graded approach in the authorization process was not reviewed.

5.2. AUTHORIZATION OF RESEARCH REACTORS

The General Radiation Protection Ordinance requires that siting, design, construction, testing, commissioning, operation (including modification and experimental devices), and decommissioning of research reactors are authorized in accordance with the relevant provisions of the IAEA Safety Standard SSR-3. Authorizations for the TRIGA Mark-II Research Reactor have been granted for construction and testing, operation, and approvals for clearance have also been issued.

The General Radiation Protection Ordinance prescribes obligations of the authorized parties with respect to the operation of the research reactors, including stipulations on the operating organization. Accordingly, research reactors shall be staffed with reactor management, reactor operators, who need authorization, a radiation protection officer and other radiation protection experts, a nuclear safety officer and a deputy officer. Reactor operators shall have individual permits.

The validity of the operation license is not limited, but a periodic safety review is required once in every ten years.

The research reactor authorized party is required to keep the necessary records to assess the safety of the research reactor operation, including the authorized party event report, and present these records to the regulatory authority as required or on request.

5.3. AUTHORIZATION OF RADIATION SOURCES FACILITIES AND ACTIVITIES

As operation authorizations do not have expiry date in general and there are no requirements for periodic safety review to be conducted by authorized parties other than the research reactors, regulatory inspections are the only means for regular verification of safety.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: There are no requirements for periodic review of the safety assessment to be conducted by authorized parties for any facility or activity other than the research reactors.	
(1)	**BASIS: GSR Part 4 Requirement 24 states that** *"The safety assessment shall be periodically reviewed and updated."*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(2)	**BASIS: GSR Part 4 Para. 5.10 states that** *"The safety assessment shall be periodically reviewed and updated at predefined intervals in accordance with regulatory requirements."*
R12	**Recommendation: The regulatory body should establish requirements for periodic review of the safety assessment for all facilities and activities taking into account the associated radiological risk in accordance with a graded approach.**

According to the Act, devices containing radiation sources can be authorized by type approval, issued by the regulatory body. Some type approved devices are exempted from further authorization, while some others require a separate authorization unless the regulatory body grants an exemption from obligation to obtain authorization. The IRRS team was informed that the regulatory body decides on this aspect based on the inputs from the technical experts involved in the authorization process. However, there is no guidance or procedure available with the regulatory body in this regard.

This issue on the lack of guidance and procedure is addressed in Recommendation R6 in Section 4.3.

Type approval must be applied for by domestic manufacturer, authorized representative in Austria of foreign manufacturers, or by the user if no such authorized representative is available.

The IRRS team was informed that type approval for medical devices has not been applied since 1995 and that type approvals for medical and some other devices will be removed in the forthcoming revision of the Act.

Authorized parties of type approved devices are required to report any changes in the possession of sources to the Central Register of Radioactive Sources which is maintained by BMNT.

The sources contained in type approved devices are reported and included in the central register but not always the devices themselves. X-ray generators are also not included in the Central Register of Radioactive Sources.

This issue of the Central Register of Radioactive Sources is addressed in Suggestion S7 in Section 3.7.

5.4. SUMMARY

The Act and the General Radiation Protection Ordinance cover the authorization process. However, there is room for improvement through, inter alia, specifying criteria on which facilities need preparation and implementation of radiation protection measures during construction, issuing guidance on the periodic safety review and on contents of the documents to be submitted in support of an application, establishing criteria and process for formal recognitions of qualified experts, establishing requirements for independent verification of safety assessment and periodic review of the safety assessment for all facilities and activities.

6. REVIEW AND ASSESSMENT

6.1. GENERIC ISSUES

6.1.1. MANAGEMENT OF REVIEW AND ASSESSMENT

Initial review and assessment is conducted by the regulatory body as part of the authorization process. The Act requires that qualified experts must be consulted in the review and assessment process.

The purpose, scope and criteria for review and assessment are derived from the Act. Some authorities have not developed written procedures or internal guidelines for the review and assessment of applications for authorization of facilities and activities (including the supporting safety demonstration). Reviewing and assessing the documentation is based on the knowledge and experience of personnel and external experts. BMBWF has established some procedures for review and assessment.

The regulatory review is repeatedly performed during the lifetime of an authorized facility or activity through inspections and review of updated documentation of the authorized party. All information submitted by the authorized party to the regulatory authority is evaluated.

The Act requires submitted applications to be reviewed and assessed and the decision issued without undue delay, and in any case no longer than in six months after the receipt of applications; in special cases, as prescribed in the Act the regulatory authority shall issue a decision in shorter time (maximum three months).

Coordination and cooperation with other regulatory authorities take place whenever needed. The documents submitted for review by the authorized party (e.g. operation reports) are distributed by the regulatory body to the other regulatory authorities; the representatives of the authorities are invited to give their opinion and discuss their concerns with the authorized parties, if such aspects are related to nuclear or radiation safety.

The regulatory body is organizing the results obtained during the review process in a systematic manner. An electronic system of record keeping (ELAK) is used to keep all decisions taken by the regulatory body, including notices of decision, inspection protocols, etc. The submitted documentation and regulatory review and assessment documentation used to take the regulatory decision is also kept within the system.

6.1.2. ORGANIZATION AND TECHNICAL RESOURCES FOR REVIEW AND ASSESSMENT

The competence for review and assessment is maintained in the framework of the general education and training programmes and in the course of the normal recruitment and succession process, but there is no training manual or programme in place.

This issue of competence of staff is addressed in Recommendation R5 in Section 3.3.

In order to evaluate if adequate provisions have been made for radiation protection, BMNT and BMBWF consult external experts, but there is no written procedure and criteria to determine qualification, evaluate and select the consultant.

This issue of recognition of external experts is addressed in Suggestion S6 in Section 3.4.

6.1.3. BASIS FOR REVIEW AND ASSESSMENT

The general content of the safety analysis, accident analysis and emergency response plan is prescribed in the General Radiation Protection Ordinance which includes details for research reactors. For some of the other activities and facilities there are no guidelines for the necessary content of the safety analysis, accident analysis and emergency response plan.

This issue is addressed in Recommendation R8 in Section 5.1.

In case after issuing the authorization, the regulatory body finds that radiation protection is not adequately ensured despite of the fulfilment of the regulatory requirements and compliance with the authorization conditions, it may stipulate additional requirements for construction and operation.

6.1.4. PERFORMANCE OF REVIEW AND ASSESSMENT

The regulatory body verifies the safety assessment case-by-case in accordance with the application for authorization. In some cases, written checklists are used. For the contents of safety analyses reports and emergency plans for research reactors requirements are set by the General Radiation Protection Ordinance.

This issue of guidance for documents to be submitted in support of an application is addressed in Recommendation R8 in Section 5.1.

Any proposed modification that might significantly affect the safety of a facility or activity is subject to a review and assessment prior to approval by the regulatory body.

6.2. REVIEW AND ASSESSMENT FOR RESEARCH REACTORS

In addition to generic issues covered in Section 6.1, the General Radiation Protection Ordinance requires to conduct a periodic safety review (PSR) of research reactors every ten years taking into account ageing related aspects and extended shutdowns; the regulatory body reviews and assesses the results of the PSR. The decision for continual operation is based on its review. All information submitted by the authorized party to BMBWF is evaluated as described in the Supervisory Handbook.

6.3. REVIEW AND ASSESSMENT FOR RADIATION SOURCES FACILITIES AND ACTIVITIES

Initial review and assessment is done as part of the authorization process. Whilst BMNT and BMBWF utilize the services of external experts to conduct the review and assessment, BMASGK performs the review and assessment of the facilities and activities under its jurisdictions through its staff members.

For all ministries, inspections are the main mechanism for regular review and assessment.

6.4. SUMMARY

The review and assessment process needs to be formalized as a part of the management system. In order to ensure consistency in the decision making, internal guidance and criteria for judging safety should be established. As the regulatory body is responsible for the regulatory decision, it should have and maintain sufficient technical competence in order to judge the assessments of external experts.

7. INSPECTION

7.1. GENERIC ISSUES

7.1.1. INSPECTION PROGRAMME

According to the Act inspections are carried out by the responsible authorities to verify that the authorized party is in compliance with the regulatory requirements and specified conditions in the authorization.

The regulatory body conducts planned, announced, and reactive inspections. According to the Act, the authority may carry out inspections at any time as prerequisite for the review of the handling of sources (and facilities) as laid down in the Act and for important reasons such as in particular criminal charges, complaints, suspicion of the existence of reasons for a prohibition, suspicion of unlawful operation. This limitation is not fully in line with IAEA requirement where the inspection programme shall specify the types of regulatory inspection, including scheduled inspections and unannounced inspections at any time. The IRRS team was informed that unannounced inspections have never been used before. With regard to the research reactor the external experts visit the reactor on behalf of the regulatory authority and witness tests as necessary.

The frequency of inspection depends on the type of facilities and activities. Inspection of research reactors, high-activity sealed sources, particle accelerators, high-dose gamma beam equipment and nuclear medicine facilities for therapy is at least once a year.

During the annual inspection/review, the regulatory body checks the compliance with the legal and authorization requirements and conditions, verifies the statements in the safety assessment for review, and follows up the corrective actions required.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: The Act provides for inspections of facilities and activities and their frequency. However, it also says that additional inspections of authorized facilities may be carried out at any time only in case of important reasons. With regard to interventions, the Act stipulates that except in the event of imminent danger, the investigation shall be performed during the usual operating or business hours in the presence of a corporate body designated to represent the company. Such legal constraints could lead into situations where inspectors would not have free access to facilities or activities at any time. The regulatory body does not perform unannounced inspections.	
(1)	**BASIS: GSR Part 1 (Rev 1) para. 4.50 states that** *"The regulatory body shall develop and implement a programme of inspection of facilities and activities, to confirm compliance with regulatory requirements and with any conditions specified in the authorization. In this programme, it shall specify the types of regulatory inspection (including scheduled inspections and unannounced inspections), and shall stipulate the frequency of inspections and the areas and*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
	programmes to be inspected, in accordance with a graded approach".
(2)	**BASIS: GSR Part 1 (Rev 1) para. 4.52 states that** *"Regulatory inspections shall cover all areas of responsibility of the regulatory body, and the regulatory body shall have the authority to carry out independent inspections. Provision shall be made for free access by regulatory inspectors to any facility or activity, at any time, within the constraints of ensuring operational safety at all times and other constraints associated with the potential for harmful consequences. These inspections may include, within reason, unannounced inspections. The manner, extent and frequency of inspections shall be in accordance with a graded approach."*
R13	**Recommendation: The Government should ensure the free access by regulatory inspectors to any facility or activity, at any time, within the constraints of ensuring operational safety at all times and other constraints associated with the potential for harmful consequences.**
R14	**Recommendation: The regulatory body should include into its programme of inspections also unannounced inspections, in accordance with the graded approach.**

7.1.2. INSPECTION PROCESS AND PRACTICE

There are differences between authorities in performing the inspections. BMBWF has established a process for inspection (which includes inspection guidelines), as described in its Supervisory Handbook. An inspection plan is established every year. BMNT and BMASGK do not have a formal process for inspection. However, an inspection programme is performed every year, agreed with the authorized parties. The process of inspection needs to be formal, consistent, and part of the management system of the regulatory body.

This issue of the management system is addressed in Recommendation R6 in Section 4.3.

The inspection process is interfaced with other regulatory processes as the compliance with the authorization requirements and conditions are checked, statement in safety assessment for review is verified, and corrective action required is followed up.

7.1.3. INSPECTORS

According to the Act, inspections may also be carried out by accredited bodies. It requires the regulatory body to establish by ordinance the requirements for such accredited bodies.

Inspections performed by BMNT and BMBWF are conducted with assistance of external experts who may also perform the review and assessment of the authorization documentation. The external experts are requested by the regulatory body to make the technical part of the inspection.

No training program for the inspectors is in place. However, they attend some workshops and seminars on administrative and legal issues. The issue of training is discussed in detail in section 4.4.

This issue of competence is addressed in Recommendation R5 in Section 3.3.

BMASGK performs inspections using only its own personnel. BMASGK inspectors receive regular training and the inspectors' competence was evident in the site visit to the Kaiser Franz Joseph Hospital.

7.2. INSPECTION OF RESEARCH REACTORS

At least one inspection per year for research reactors is required by law. The inspection process is detailed in the Supervisory Handbook. Depending on the object of inspection, the applied methods for inspection are observation**,** questioning, perusal and examination of the operator's documents/information/test plans.

Two inspectors perform inspections at the Atominstitut separately, one for the research reactor and one for radiation sources, both holding degrees in technical studies and having experience and training in reactor management.

Prior to the inspection, the authorized party is obliged to submit annual reports on operation, radiation protection, environmental monitoring, safety analysis, training, test results and information on any safety related change in the operation of the research reactor. BMBWF and its expert(s) review and assess the submitted documents.

External technical experts conduct inspections on the site on behalf of the authority. Representative of other regulatory authorities such as fire protection, labour inspectorate, emergency preparedness or building safety may participate in performing the inspection.

The outcome of an inspection is discussed between the technical experts and the legal experts of BMBWF and is used as basis for the planning of topical inspections. The findings are usually agreed between the external experts and BMBWF, formulated and provided to the authorized party. These findings are used as an input for the oral hearing.

Although there is no regulatory requirement for the operating organization of the research reactor to monitor and control activities performed by the contractors, the IRRS team was informed that a practice to control the outsourced activities is in place and was verified by the authority last year.

Besides annual inspections, which generally cover all aspects that need to be controlled (e.g. operational radiation protection, emergency preparedness and response, training and qualification of personnel, etc.), there might be topical inspections.

Site visit to the research reactor

The IRRS team was invited to observe the annual oral hearing which was conducted during the IRRS mission at the research reactor. The hearing was headed by a representative of BMBWF. The member of the oral hearing were staff members from BMBWF, two external experts, a technical expert from AGES, a labour inspection officer, a representative of the authorized party, reactor staff including the reactor manager, the safety officer, and the radiation protection officer. The discussion went smooth and all agenda topics were discussed and agreed with the reactor staff. Part of the hearing was a walkthrough the reactor hall and the control room. Finally, the hearing ended by conclusions and a legal statement for continual operation.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: There are no regulatory requirements for the operating organization of the research reactor to monitor and control activities performed by contractors.	
(1)	**BASIS: GSR Part 1 (Rev.1) para. 4.53 states that** "*In conducting inspections, the regulatory body shall consider a number of aspects, including Structures, systems and components and materials important to safety, Liaison with contractors and other service providers, ...*"
R15	**Recommendation: The regulatory body should require the authorized parties to monitor and control activities performed by contractors.**

7.3. INSPECTION OF RADIATION SOURCES FACILITIES AND ACTIVITIES

The Act requires the conduct of inspections by the authorization authorities for the operation of facilities and handling of sources. For the use of type approved devices, the Act requires the conduct of inspection by the radiation protection authority responsible for the user's site.

The IRRS team was informed that prior to issuing an operation authorization, the regulatory body usually performs pre-authorization inspection.

Graded approach to inspection is essentially reflected in the frequency of inspection which is specified in the Act. However, inspections to facilities falling within the scope of this IRRS missions would be done annually.

Inspections are often conducted jointly with other governmental bodies such as the Labour Inspectorate. The IRRS team was informed that in such a case a joint report is prepared but there would be no impact of the findings of the other bodies on the authorization process unless they affect radiation safety.

For inspection preparation, the inspectors review the authorization conditions and the findings of past inspections. It was observed during site visits that the inspectors go thoroughly through the authorization conditions and verify the compliance of the authorized party with each of those conditions. However, verification of safety culture and organizational and managerial arrangements for safety were not addressed adequately to IAEA safety standards. The use of authorization conditions as the primary means for compliance monitoring may lead to the risk of missing safety issues or requirements if these are not captured within the authorization conditions.

Inspection reports are prepared on the site and they include the findings and the corrective actions required, if any. The reports are then agreed with the representative of the authorized party and are countersigned. The inspected facility shall report to the inspecting authority the implementation of the corrective actions. Follow up is done usually in the next inspection. Communication between the regulatory body and the authorized party with regard to the inspection findings and corrective actions is usually done at the personal level between the inspectors and the representative of the authorized party (often the radiation protection officer).

Inspectors have the power to impose enforcement actions on-the-spot in case of imminent danger. Such actions will be in the form of preliminary injunctions.

BMASGK and BMNT have not established a formal process for inspection and have not established guidelines for the inspectors.

This issue of guidelines is addressed in Recommendation R6 in Section 4.3.

7.4. SUMMARY

The regulatory body should establish a formal process and procedures for inspection in accordance with its management system and needs to include unannounced inspections in its inspection programme, in accordance with a graded approach.

The regulatory body should have free access to the premises of the regulated facilities at any time for ensuring operational safety.

The regulatory body should pay attention to the activities conducted by contractors on the premises of the authorized parties if these activities are important to safety.

8. ENFORCEMENT

8.1. ENFORCEMENT POLICY AND PROCESS

The possible enforcement actions are outlined in the Act and in the Administrative Enforcement Act. They include actions that can be imposed by the regulatory body as well as administrative penalties.

The administrative penalties are specified in the Act and they include fines, seizure or forfeiture of sources. Those penalties are however not enforced by federal ministries but by the district administrative authorities. Therefore, the review of their implementation and the effectiveness of communication between the federal and the provincial levels was outside the scope of this IRRS mission. The regulatory body has acknowledged in the ARM that it has very limited role and experience in this level of enforcement.

The enforcement actions that can be imposed by the regulatory body are usually requests to the authorized party to undertake specific corrective actions within a given timeframe. This is typically imposed by inspectors on the spot and is usually agreed by the authorized party through its counter-signature on the inspection protocol. This approach has been confirmed in the site visits to the Kaiser Franz Joseph Hospitaland the TRIGA Mark-II Research Reactor. The inspectors may also issue preliminary injunctions in case of imminent danger and such injunctions are immediately enforceable within the meaning of the Administrative Enforcement Act.

In addition, the regulatory body may prohibit an authorized activity if one of the requirements of the authorization is not met and there is reason to fear harm to the health and life of humans. An appeal against such a decision does not suspend enforcement actions. The regulatory body has also the power to impose additional condition in case of inadequacy of radiation protection despite meeting the requirements according to the Act.

For the implementation of enforcement actions described above, the regulatory body has not established a formal enforcement policy and has not developed a formal process and procedures or internal guides. This has been recognized by the regulatory body in the ARM.

8.2. ENFORCEMENT IMPLEMENTATIONS

Decisions are made by inspectors based on their professional experience and judgment and the advice received from external experts participating in the inspection. It was not evident that the inspectors receive specialized training on the implementation of enforcement actions.

Follow-up on the implementation of corrective actions is mainly done through next inspections. The authorized party is requested to inform the regulatory body of the completion of corrective actions, but such communication could be informal through an e-mail to the inspector. There are procedures and forms in place for acceptance (acceptance protocol by expert in case of the research reactor). Although inspectors may take the radiological risk associated with non-compliances into account in their decision making, a graded approach to enforcement was not evident in the absence of formal process and procedures.

As a matter of general legal provisions, the applicant or the authorized party may appeal against any decision by the authority. The appeal has to be submitted to the administrative court in the first instance within a prescribed timeframe.

The IRRS team was informed by the regulatory body that no cases of conflicts, objections or contradicting views with the authorized party have ever occurred that may lead to an appeal or to escalating the enforcement process to higher levels. Indeed, this was also confirmed by an authorized party during site visits.

The regulatory body has no process for informing other governmental bodies of the enforcement actions when needed. The IRRS team was also informed that it is not a practice of the regulatory body to inform other authorities. Also, there are no arrangements to ensure that the regulatory body would be informed by the provincial authorities on the outcome of administrative penalties, if imposed upon request by the regulatory body.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: The regulatory body has not established a formal enforcement policy and has not developed formal procedures for enforcement. No internal guidelines exist for the application of a graded approach, follow-up actions, formal communication and documentation of enforcement actions as well as exchange of enforcement information with the relevant federal or provincial bodies.	
(1)	**BASIS: GSR Part 1 (Rev. 1) Requirement 30 states that** *"The regulatory body shall establish and implement an enforcement policy within the legal framework for responding to non-compliance by authorized parties with regulatory requirements or with any conditions specified in the authorization."*
(2)	**BASIS: GS-G-1.5 para. 3.85 states that** *"The regulatory body should adopt clear administrative procedures governing the taking of enforcement actions. The procedures should specify the policy of the regulatory body with regard to the use of regulatory actions and enforcement measures, and the associated delegated authority given to inspectors and to other staff of the regulatory body. The procedures should cover in detail the decision making approach of the regulatory body in determining the level of action to take and the way in which actions should be taken, including dealing with the failure of the operator to comply with the regulatory enforcement requirements."*
S8	**Suggestion: The regulatory body should consider establishing an enforcement policy and putting in place formal procedures for enforcement that ensure, inter alia, the application of a graded approach, efficient follow-up and formal documentation and communication of the enforcement actions taken.**

8.3. SUMMARY

The regulatory body should establish an enforcement policy and develop and implement effective process and procedures for enforcement that ensure, inter alia, the application of a graded approach, efficient follow-up and formal documentation and communication of the enforcement actions taken.

9. REGULATIONS AND GUIDES

9.1. GENERIC ISSUES

The Act requires regulatory authorities to establish requirements relating to safety in the form of ordinances. In relation to this IRRS mission, the following ordinances were presented to the IRRS team:

- The General Radiation Protection Ordinance;
- The Medical Radiation Protection Ordinance;
- The Intervention Ordinance;
- The Natural Radiation Protection Ordinance;
- Four ordinances on the training for medical technical professions, medical assistant professions, medical practitioners, and dental assistance;
- Ordinance on Incident Information.

Those ordinances set forth regulatory requirements that are broadly commensurate with the radiological risks associated with the regulated facilities and activities and therefore they support a graded approach for the regulatory control.

The Ordinance on Medical Exposure Control and the Intervention Ordinance were revised recently and issued in December 2017 and October 2017 respectively.

The General Radiation Protection Ordinance has been subject to amendments in 2012 and 2015 and 2018. It will be revised in conjunction with the revision of the Act and for transposing the Directive 2013/59/Euratom.

The IRRS team was informed that review, amendment or revision of the Act and ordinances is usually triggered when new requirements or commitments emerge such as through Euratom Directives. IAEA safety standards do not usually trigger review of the Act and ordinances. Regulatory experience is a factor that is taken into account but is usually not a trigger by itself for the review. An example was given that one of the changes in the 2012 revision of the Radiation Protection Ordinance was based on experience to allow for the categorization of occupationally exposed workers in category A and B.

No formal process has been established to assess the need for review or revision of the ordinances, to identify the gaps and to establish transitional plans for the implementation. The IRRS team was informed that the impact of changes in regulatory requirements is taken into account in the revision process despite the absence of formal analysis process.

Although there is no dedicated formal process for the review of ordinances, the generic process follows the Federal Law on the Rules of Procedure of the National Council and includes technical review and drafting by experts from various governmental bodies and consultation with interested parties. Federal ministries have to agree on the proposed revision if it touches their competence, as it is the case for instance in the General Radiation Protection Ordinance which is issued as a common ordinance of all federal regulatory authorities. Once all comments received are resolved the revised ordinance is signed by the responsible minister or ministers. There is no obligation to share with the interested parties the resolution of their comments. Ordinances are published in the Federal Law Gazette and in a dedicated governmental web-based system, the legal information system (RIS), and are available to the public. They are also published in the websites of the respective ministries.

The regulatory body has not established guides for the implementation of the regulatory requirements falling in their respective competence.

9.2. REGULATIONS AND GUIDES FOR RESEARCH REACTORS

The primary legal basis of the regulatory supervision of the research reactor is provided by the Act and the General Radiation Protection Ordinance. According to the General Ordinance the siting, construction and decommissioning of the research reactor shall be ensured in accordance with the international provisions of the IAEA Safety Standard NS-R-4 (presently SSR-3).

9.3. REGULATIONS AND GUIDES FOR RADIATION SOURCES FACILITIES AND ACTIVITIES

Several provisions in the General Radiation Protection Ordinance are not in line with the IAEA safety standards. Of particular importance are the provision, which require the regulatory authority to classify the occupationally exposed workers into categories A or B during the authorization process or during review in an inspection and the provision stating that the regulatory authority shall delineate the controlled area and the supervised area in the authorization procedure. Both provisions compromise the prime responsibility of the authorized party for safety and appear to shift parts of its responsibility to the regulatory body.

This issue of the effective independence is addressed in Recommendation R4 in Section 3.2.

Other examples of non-conformity of the Act with the IAEA safety standards are missing requirements for the authorized party to establish a management system as the ordinance only requires this for the research reactor. Detailed observation relating to occupational exposure, medical exposure and public exposures are given in sections 11.1, 11.2 and 11.3 respectively.

The regulatory body is aware of the need to revise both the Act and the General Radiation Protection Ordinance for transposition of the Directive 2013/59/Euratom. The updated IAEA safety requirements for research reactors will be taken into account.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICE	
Observation: There are no regulatory requirements for the authorized parties other than the research reactor to establish a management system to ensure safety.	
(1)	**BASIS: GSR Part 2 Requirement 3 states that** *"Senior management shall be responsible for establishing, applying, sustaining and continuously improving a management system to ensure safety."*
(2)	**BASIS: GSR Part 3 Requirement 5 states that** "*The principal parties shall ensure that protection and safety are effectively integrated into the overall management system of the organizations for which they are responsible."*
R16	**Recommendation: The regulatory body should include in the regulations requirements for the authorized parties to establish, apply, sustain and continuously improve a management system to ensure safety, taking into consideration a graded approach.**

9.4. SUMMARY

The legal basis for developing regulations for nuclear and radiation safety is clearly defined. The development, approval, issuance and promotion of regulations follow the general approach provided in federal acts.

There is no mechanism or procedure to ensure that the regulations are fully compatible with the IAEA safety standards.

Some requirements from the existing regulatory framework are not fully implemented in a practice. No formal process has been established to identify the impact of changes to regulatory requirements or to the identification of gaps with existing practices.

10. EMERGENCY PREPAREDNESS AND RESPONSE – REGULATORY ASPECTS

10.1. AUTHORITY AND RESPONSIBILITIES FOR REGULATING ON-SITE EPR OF OPERATING ORGANIZATIONS

The main competences of all the national authorities with responsibilities to respond in a radiological emergency are mainly described in the Act, in the Intervention Ordinance, in the General Radiation Protection Ordinance, and in the Medical Radiation Protection Ordinance. In addition, a regulatory guide for safety analysis, accident analysis and emergency planning has been developed by BMNT and BMASGK.

The legal framework assigns to the authorized party the responsibility for the on-site Emergency Preparedness and Response (EPR).

The necessary content of the on-site emergency response plan for the research reactor is established in Annexes of the General Radiation Protection Ordinance; for other facilities and activities, there are also guidelines published on a website provided by BMNT.

According to the Act, BMNT is entitled to establish, by ordinance requirements, criteria related to areas of the EPR like, for instance, criteria for the termination of an emergency exposure situation to an existing exposure situation.

The regulatory body evaluates the EPR arrangements of the authorized party during the licensing process, whereas the prospective authorized party has to submit with the application for license a radiation protection programme which includes an emergency response plan. Additionally, it is required that the authorized party notifies the regulatory body immediately about any emergency and to have in place a system for response to an on-site emergency.

The regulatory body reviews and assesses the on-site EPR arrangements of the authorized party to verify compliance with the regulatory requirements before issuing the authorization for the conduct of the activity.

Afterwards, during the lifetime of the facility or the conduct of the activity the regulatory control in EPR is ensured by the approval of the authorized party revisions and updates of the on-site emergency plan and by conducting inspections on EPR arrangements and observing and evaluating the exercises.

The Act requires that the emergency response plans should include the integration of the on-site emergency arrangements by the authorized party with the relevant off-site emergency arrangement from the response organizations including, in particular, on-site and off-site actions needed to address the emergency. The off-site actions are to be coordinated with the competent emergency response organization, if necessary.

BMBWF is contracting external experts for performing the inspection to the research reactor, to assess all technical aspects of the research reactor operation, including the EPR arrangements. **The issue of recognition of external experts is addressed in Suggestion S6 in Section 3.4**.

The on-site EPR arrangements for the facilities are based on IAEA standards and guides, but not fully aligned with the current IAEA safety standard on Emergency Preparedness and Response, IAEA Safety Standards GSR Part 7. **This issue is addressed in Recommendation R17 in Section 10.3.**

10.2. REGULATIONS AND GUIDES ON ON-SITE EPR OF OPERATING ORGANIZATIONS

According to the General Radiation Protection Ordinance the authorized party, in the event of changes, should have arrangements in place for reviewing and updating the emergency response plan.

The Ordinance for Interventions defines a legal basis for the protection of emergency workers, there is also a definition to designate workers as "Emergency Workers". No clear criteria were presented for the designation of on-site "Emergency Workers". The Act refers in a very implicit manner the obligation to designate "Emergency Workers" in advance of a radiological emergency. **This issue is addressed in Recommendation R17 in Section 10.3.**

No definition was found for "Helpers" in the Act or the Ordinances. Nevertheless, for example, the persons responsible for performing samples collection and others qualify to be considered as "Helpers". **This issue is addressed in Recommendation R17 in Section 10.3.**

The Intervention Ordinance includes provisions related to the reference levels which have to be applied for the emergency workers. The training requirements for emergency workers are also defined in the Ordinance.

For the research reactor, the emergency response plan is included in the safety analysis report and the General Radiation Protection Ordinance requires an update of the Safety Analysis Report whenever a significant change is planned to be approved by BMBWF.

The reference levels and general criteria used for undertaking urgent protective actions are the ones stated in the Intervention Ordinance.

In case of loss, theft or unauthorized use of a radiation source and in an incident or accident related to radiation practices, the authorized party is required to notify the regulatory body immediately.

For all activities and facilities, in case of an emergency the regulatory authority and BMNT are notified immediately, otherwise, in case of incidents, the notification should be made within 24 hours.

The hazard assessment within the National Emergency Response Plan concludes that there are only facilities or activities in Austria giving rise to Emergency Preparedness Categories (EPC) III, IV and V, as per IAEA categorization.

The Intervention Ordinance includes criteria for initial assessment of the situation, criteria for transition from an emergency exposure situation to an existing exposure situation and criteria for the termination of an off-site emergency. For on-site emergencies these criteria are not clearly defined. The IRRS team was informed that the new legislation being prepared will address this subject.

The Intervention Ordinance brings the off-site component of the EPR system in line with IAEA Safety Standards GSR Part 7 requirements, nevertheless the provisions of this Ordinance have not yet been transposed in the on-site emergency plans of the facilities.

10.3. VERIFYING THE ADEQUACY OF ON-SITE EPR OF OPERATING ORGANIZATIONS

The regulatory body verifies the compliance of EPR on-site arrangements of the authorized party against the regulatory requirements before commencement of operation/activity.

The IRRS team was informed that annual inspections to the research reactor always include the EPR matters. BMBWF conducts inspections as described in Section 7.

There are obligations stated in the General Radiation Protection Ordinance for the research reactor to update and review the EPR plans. Nevertheless, the frequency for this update and review is not defined. **This issue is addressed in Recommendation R17 in Section 10.3.**

It was observed that only the on-site emergency plans of some facilities, such as the research reactor, require the explicit approval by the regulatory body.

Requirements on the contents of EPR plans for the research reactor are described in Annex 14 of the General Radiation Protection Ordinance. The authorized party has to describe its internal plans for prevention and response to radiological emergencies, including their available equipment and human resources.

The Intervention Ordinance sets the requirements to the authorized party for training their employees for emergency situations and also provisions for periodic tests and exercises. The IRRS team noted that there is no established process for sharing the lessons taken by the on-site training, drills and exercises with the federal authorities with competence on EPR. In fact, the IRRS team was informed that BMASGK is not aware of the outcome of the exercises performed at the research reactor. The sharing of the exercise reports between the three regulatory authorities at federal level will help strengthen the articulation of the regulatory body. **This issue is addressed in Recommendation R17 in Section 10.3**.

The General Radiation Protection Ordinance and the Intervention Ordinance contain requirements on the emergency plan, radiation protection competences, and notification and training of the staff. Compliance with these requirements is verified by inspectors of the regulatory body.

From the observations made by the IRRS team the Austrian emergency preparedness and response system for nuclear and radiological emergencies would benefit from an IAEA Emergency Preparedness and Response Review (EPREV) Service. **This issue of peer reviews is addressed in Suggestion S5 in Section 2.1.**

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: Some of the existing requirements for on-site emergency preparedness and response are not consistent with the requirements by the IAEA Safety Standards GSR Part 7; for example: the lack of a clear allocation of the responsibilities to regulate on-site EPR; the designation of the "Helpers"; clear criteria for the designation of on-site "Emergency Workers"; a lack of an established process for sharing the lessons taken by the on-site training, drills and exercises with all the federal authorities with competence on EPR; the periodicity of the review and update of the on-site emergency plans.	
(1)	**BASIS: GSR Part 7 Requirement 2 para. 4.7 states that** *"The government shall ensure that all roles and responsibilities for preparedness and response for a nuclear or radiological emergency are clearly allocated in advance among operating organizations, the regulatory body and response organizations."*
(2)	**BASIS: GSR Part 7 Requirement 20 para. 6.5 states that** *"The emergency arrangements shall include clear assignment of responsibilities and authorities…"*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(3)	**BASIS: GSR Part 7 Requirement 11 para. 5.49 states that** *"Arrangements shall be made to ensure that emergency workers are, to the extent practicable, designated in advance and are fit for the intended duty."*
(4)	**BASIS: GSR Part 7 Requirement 11 para. 5.50 states that** *"Arrangements shall be made to register and to integrate into operations in an emergency response those emergency workers who were not designated as such in advance of a nuclear or radiological emergency and helpers in an emergency. This shall include designation of the response organization(s) responsible for ensuring protection of emergency workers and protection of helpers in an emergency."*
(5)	**BASIS: GSR Part 7 Requirement 25 para. 6.30 states that** *"Exercise programmes shall be developed and implemented to ensure that all specified functions required to be performed for emergency response, all organizational interfaces for facilities in category I, II or III, and the national level programmes for category IV or V are tested at suitable intervals. These programmes shall include the participation in some exercises of, as appropriate and feasible, all the organizations concerned, people who are potentially affected, and representatives of news media. The exercises shall be systematically evaluated and some exercises shall be evaluated by the regulatory body. Programmes shall be subject to review and revision in the light of experience gained."*
(6)	**BASIS: GSR Part 7 Requirement 25 para. 6.33 states that** *"The conduct of exercises shall be evaluated against pre-established objectives of emergency response to demonstrate that identification, notification, activation and response actions can be performed effectively to achieve the goals of emergency response."*
(7)	**BASIS: GSR Part 7 Requirement 23 para. 6.18 states that** *"(e) Emergency plans and procedures are periodically reviewed and updated…"*
(8)	**BASIS: GSR Part 7 Requirement 26 para. 6.36 states that** *"Arrangements shall be made to maintain, review and update emergency plans…"*
R17	**Recommendation: The Government should revise the legislation on on-site emergency preparedness and response to ensure compliance with the IAEA Safety Standards GSR Part 7.**

10.4. ROLES OF THE RB IN A NUCLEAR OR RADIOLOGICAL EMERGENCY

The specific responsibilities of the regulatory body in case of off-site radiological emergencies are established in the Act and are further detailed in the Intervention Ordinance, in the National Response Plans and in other related documents. The main roles and responsibilities for the off-site EPR are shared by BMNT, BMASGK, Ministry of the Interior (BMI), the Austrian Provinces and the National Crisis and Disaster Protection Management.

BMNT takes the leading role in establishing a National Emergency Response Plan together with the pertinent federal ministries. BMNT is also responsible for defining the criteria for agricultural countermeasures and longer-term protective measures and the procedure to guide the coordination of these activities.

The National Emergency Response Plan assigns responsibilities to the response authorities also in mitigating non-radiological consequences of the emergency.

The coordination of the national stakeholders is established in the National Emergency Response Plan, covering EPC III to V. Nevertheless, separated specific emergency response plans, based on hazard assessments, exists for different scenarios such as the ones involving the research reactor, considering also terror attacks, etc.

The Intervention Ordinance encompasses an alignment with IAEA Safety Standards GSR Part 7, but lacks to be implemented on the on-site emergency plans and on the Act. The IRRS team was informed that a new Act is under preparation and that the EPR features will be drafted in alignment with the requirements in IAEA Safety Standards GSR Part 7.

BMNT has an annual programme for off-site EPR training, drills and exercises, and each year the BMNT staff participates, alone or together with other federal and provincial responders, in several exercises and drills, organized by IAEA (USIE), EURATOM (ECURIE), national and provincial institutions, etc.

BMNT maintains a dedicated emergency support centre, with several staff members that ensure duty officer functions 24/7 hours, with means of communication and defined procedures.

Austria is a Party to the IAEA Convention on Early Notification of a Nuclear Accident as well as to the IAEA Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, BMI has the competency of being the National Contact Point and BMNT is the competent authority for both emergencies domestic or abroad.

The IRRS team was informed that the new Act under development will provide Austria with a legal framework to establish a consolidated quality management programme for EPR. It was observed that elements of that quality management programme already exist.

The Intervention Ordinance already encloses some of the Generic Criteria of GRS Part 7 and assigns to BMNT and BMASGK the competence for deciding on protective actions in case of an emergency.

During events, such as the theft of radioactive sources, all medical facilities that may come in contact with affected persons are made aware of the event. Nevertheless, no formal procedures and systematic arrangements are in place for general practitioners and medical emergency staff to make them aware of the symptoms of radiation exposure in patients, in routine situations. **This issue is addressed in Recommendation R18 in Section 10.4.**

The management of the medical response is detailed in the arrangements for the off-site EPR. Whenever decontamination of injured persons is needed, the National Emergency Plan designates hospitals for the decontamination and treatment of patients.

BMNT together with BMASGK decides on measures to follow the health conditions of persons exposed to ionizing radiation in order to determine possible health effects due to exposure or contamination.

For EPC V Austria has a clear outline of the emergency planning distances. No facilities of EPC I and II exists in the country.

Austria also developed a catalogue of protective actions, mainly focus on nuclear emergencies, which is currently under revision to include radiological emergencies and to align with IAEA Safety Standards GSR-Part 7.

Austria has established a comprehensive and efficient bilateral exchange with the neighbouring countries, which in some cases includes provision of real time data (source term, on site weather data and measurement data) and periodic testing in annual exercises.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: In routine situations no arrangements are in place so that medical personnel, both general practitioners and medical emergency staff, are made aware of the clinical symptoms of radiation exposure and notification procedures and other emergency response actions to be taken if a nuclear or radiological emergency arises or is suspected.	
(1)	**BASIS: GSR Part 7 Requirement 12 para. 5.63 states that** *"Arrangements shall be made for medical personnel, both general practitioners and emergency medical staff, to be made aware of the clinical symptoms of radiation exposure, and of the appropriate notification procedures and other emergency response actions to be taken if a nuclear or radiological emergency arises or is suspected."*
R18	**Recommendation: The regulatory body should ensure that arrangements are in place so that medical personnel, both general practitioners and medical emergency staff, are made aware of the clinical symptoms of radiation exposure and notification procedures and other emergency response actions to be taken if a nuclear or radiological emergency arises or is suspected.**

10.5. SUMMARY

Austria is a country with facilities and activities belonging to Emergency Preparedness Categories III, IV and V, as per IAEA categorization. The regulatory framework assigns to the authorized party the responsibility for the on-site Emergency Preparedness and Response.

The existing legislation and hazard assessment provide a good basis for implementing the IAEA requirements in order to achieve a harmonized graded approach in establishing arrangements for preparedness and response to radiological emergencies.

Austria possesses a framework for medical response to an emergency, but no formal procedures are in place for creating awareness in the general practitioners and medical emergency staff of the symptoms of radiation exposure of patients, in routine situations.

At Federal level the responsibility to regulate the on-site EPR arrangements are distributed among BMNT, BMBWF and BMASGK. The licensing process of the facilities and activities states an obligation to establish a radiation protection programme which includes an on-site emergency plan that is submitted with the license request and then updated regularly but with no clear periodicity defined in the legislation.

Some aspects of the on-site emergency preparedness and response requires further development to ensure compliance with the IAEA Safety Standards GSR Part 7, like for example: the lack of a clear allocation to the regulatory body of the responsibilities to regulate on-site EPR; the designation of the "Helpers"; clear criteria for the designation of on-site

“Emergency Workers”; a lack of an established process for sharing the lessons taken by the on-site training, drills and exercises with all the federal authorities with competence on EPR; and a lack of a definition for a clear periodic review and update of the on-site emergency plans.

Austria has in place an operational emergency preparedness and response capability, and has established a comprehensive and efficient bilateral exchange with the neighbouring countries.

11. ADDITIONAL AREAS

11.1. CONTROL OF MEDICAL EXPOSURES

Responsibilities of the government specific to medical exposure

The Act and the Medical Radiation Protection Ordinance have established the regulatory framework for the justification and optimization of medial exposures.

The radiological medical practitioner has the responsibility for medical exposures. The IRRS team was informed that the delegation of roles and responsibilities regarding medical exposures for radiological technologist and medical physicist are based on educations and there are no personal delegations.

BMASGK together with a group of experts (scientific forum) have established national diagnostic reference levels (DRLs), by collecting data within Austria and comparing these data to DRLs from other European countries.

Dose constraints have been established for carers and comforters, volunteers in biomedical research and for family members of patients that undergo treatments with sealed or unsealed sources.

Responsibilities of the regulatory body specific to medical exposure

The Medical Radiation Protection Ordinance has measures for the protection of individuals against harm resulting from ionizing radiation in medicine. BMASGK provides directives to the regions, for example on calibration of medical monitors. However, BMASGK does not receive any report from the regions on findings of their inspections.

Radiation therapy in Austria is licenced and controlled by BMASGK. Inspections are undertaken on an annual basis by a team of three inspectors. Fifteen (15) hospitals have LINACs and about half of them also have brachytherapy equipment.

The IRRS team was informed that compliance with the requirements of justification is not prioritised during inspections, because there are no radiological medical practitioners in the inspection teams of BMASGK.

Responsibilities of registrants and authorized parties specific to medical exposure

Radiological procedures are undertaken following referrals from the medical practitioners. These referrals provide the radiological medical practitioners with information on the clinical content that is relevant for selecting proper radiological examination. There is no requirement that ensures that if the clinical information is inadequate, the radiological medical practitioners contacts the medical practitioner to receive more information on the patient so proper radiological examination can be performed.

Information to patients, carers and comforters may only be available in German, which makes it difficult for those that are not fluent in German to understand the benefits and risks with a medical exposure. Federal level guidance could help the regional and local authorities to address this in a consistent manner. **This issue of harmonization of regulatory practices is addressed in Suggestion S3 in Section 1.5.**

Justification of medical exposures

The Medical Radiation Protection Ordinance requires that relevant parties, both the medical practitioner and the radiologist ensure that medical exposures are justified. Medical practitioners have guidelines supporting them in selecting proper radiological examinations. The presentation of dose information in this guideline makes it difficult for the medical practitioners to select a lowest dose examination that would provide the diagnostic information requested. However, the radiologist is responsible for ensuring that the most appropriate examination is performed.

All medical doctors have access to the recently introduced Electronic Patient Act where previous results of previous medical exposures can be found. This avoids unnecessary repeat of medical exposures.

Optimisation of protection and safety

Optimisation of medical exposure is primarily through the quality assurance of the imaging and therapeutic equipment and by verifying that the local diagnostic reference levels (DRLs) are below the national DRLs. Further, there are also separate guidelines regarding radiological examinations of children and the EUREF guideline (European guidelines for quality assurance in breast cancer screening and diagnosis, fourth edition) has been implemented for mammography screening.

Pregnant or breast-feeding female patients

There is an updated national guideline regarding imaging of pregnant women, "Pregnancy and X-ray Diagnostic". Women of reproductive age are asked about pregnancy or potential pregnancy before a medical exposure, and recorded. A new guideline regarding nuclear medicine and pregnancy and breast feeding patients are in the draft stage and will be published late 2018.

Release of patients after radionuclide therapy

Dose constrains for public and family members from a patient that undergoes radionuclide therapy are stated in the Medical Radiation Protection Ordinance. Adequate checks are made to ensure that it is safe to discharge the patients.

Unintended and accidental medical exposures

There are criteria for reporting unintended or accidental medical exposures. This information is published by BMASGK, making them available for other clinics in Austria.

Reviews and records

Optimisation of protection in diagnostic and therapeutic procedures is a key focus of inspections including the proper recording of exposure factors and quality assurance checks.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: The radiation doses presented in the medical practitioners' guidelines are not relevant for selecting the proper radiological examination.	
(1)	**BASIS: GSR Part 3 para. 3.155 states that** "*Medical exposures shall be justified by weighting diagnostic…benefits…against the radiation detriment that*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
	they might cause, with account taken of benefits and the risks of alternative techniques…"
S9	**Suggestion: The regulatory body should consider including the relevant dose information in the medical practitioners' guidelines.**

11.2. OCCUPATIONAL RADIATION PROTECTION

Legal and regulatory framework

Austria has established a legal and regulatory framework to ensure that protection and safety is optimised for occupational exposure of workers. Relevant requirements for the control of occupational exposures are established under the Act, the General Radiation Protection Ordinance and the Medical Radiation Protection Ordinance. The requirements for the protection of emergency workers are under the Intervention Ordinance.

The dose limits are in compliance with the current international standards, except for the annual equivalent dose to the lens of the eye. The law prohibits pregnant women from working in radiation areas, and for breast feeding women to work with unsealed sources. Persons under the age of 18 are not allowed to be occupationally exposed. The IRRS team was informed that these issues will be made consistent with the current international standards in the new legislation that is being prepared by the government.

The reference levels for emergency workers are not proposed to be updated to be consistent with the current IAEA safety standards. The IRRS team was informed that the regulatory body does not envisage an emergency scenario that would require it to apply the guidance value of 500 mSv in the IAEA Safety Standards No. GSR Part 3.

As part of the authorization process, the regulatory body reviews a Safety Analysis Report prepared by authorized parties. In most cases this report does fully address the requirements for systems and programmes for the monitoring of occupational exposures. In any case the regulatory authority has to prescribe an appropriate monitoring programme.

The regulation requires workers who are occupationally exposed to be individually monitored for exposures and in specified cases intakes by an approved dosimetry service. Persons working in supervised areas may be monitored through workplace monitoring if approved by the regulatory body.

General responsibilities of authorized parties and employers

The regulations define and assign the responsibilities for the protection of workers to authorized parties. As one of the principal parties, employers have not been assigned responsibilities under the law for establishing and implementing measures and resources for the protection and safety of workers.

There are requirements on authorized parties to provide suitable and adequate facilities, equipment and human resources for protection and safety of workers. However, there are no requirements for authorized parties or employers to:

- establish and implement dose constraints and other measures, as part of optimisation of protection and safety;

- promote safety culture or, to involve and consult with workers, or their representatives in the optimization of protection and safety;
- record and act on reports from workers that could affect compliance.

A requirement prohibiting the offer of benefits as substitutes for measures for protection and safety is proposed to be introduced. The requirement for maintenance of confidentiality of worker's exposure records or health surveillance is specified under the Federal Act concerning the Protection of Personal Data and the EU General Data Protection Regulation (GDPR).

There are formal training requirements for radiation protection officers in medical and non-medical areas including waste management and research reactors. However, other than being instructed by the authorized party or by the radiation protection officer, there are no training requirements of general workers in radiation protection and safety. The Intervention Ordinance provides for training of emergency workers.

General responsibilities of workers

There are very few requirements in the Act or the regulations directly placed on workers for protection and safety. The requirements are placed on authorized parties. For instance, the correct use of radiation protection equipment is prescribed in the regulations, but as a responsibility of authorized parties for their provision and correct use. Similarly, the workers are not required directly to report circumstances that could adversely affect protection and safety, but authorized parties are required to ensure that all incidents impacting on protection and safety are reported to them. Similarly, there is also no requirement for workers to abstain from any wilful action that could put themselves or others in harmful situations.

Requirements for radiation protection programmes

The regulation has established organizational, procedural and technical arrangements for the control of occupational exposures. These include designation of controlled or supervised areas, providing workers with suitable and adequate personal protective equipment, assessing radiation exposure of workers, health surveillance, etc. There are some gaps in these requirements, such as the need to minimize the reliance on administrative controls and personal protective equipment in favour of well-engineered controls, use of measures such as work permit to designate workers who may work in controlled areas, etc.

A key issue is that the regulations require the regulatory body to delineate radiation areas into controlled and supervised areas and for the designation of occupationally exposed workers as category A or category B. This is not consistent with the requirements of the international safety standards which require such obligations to be placed on the authorized parties who have the prime responsibility for safety. Authorized parties should be responsible for implementing and optimising safety measures and for promoting a safety culture. **This issue of effective independence is addressed in Recommendation R4 in Section 3.2**

Monitoring programmes and technical services

There are four dosimetry service providers in Austria. They are authorized under the Metrology Act or accredited under the Accreditation Act. Dosimetry services report personal monitoring data to the Central Dose Registers maintained by BMNT. The IRRS team was informed that compliance with International Standards ISO 9001 and ISO/IEC 17025 as per IAEA Safety Standards Series No. GS-G-3.2 is included as part of the accreditation requirements for dosimetry services.

Individual monitoring is required for occupationally exposed workers in regard to the external dose or if the committed effective dose may exceed 1 mSv over the period of 12 months. The

IRRS team was informed that individual monitoring for category B workers is done similar to that of category A workers. The regulatory body may exempt category B persons from personal monitoring, in which case workplace monitoring may be used to assess exposure of such workers.

The IRRS team was informed that personal monitoring for external exposures is required to be undertaken on a monthly basis. The dosimetry services are required to comply with relevant Austrian Standards in determining the type of intake measurement and the monitoring interval. The Austrian Standards are used as the basis for advising authorized parties and workers on intake monitoring by the dosimetry services.

The time frames for the reporting of dose assessments by the dosimetry service to the Central Dose Register has been specified as "*four weeks"* under section 92(2) of the General Radiation Protection Ordinance, however, under 27(3) the period stated is "*no less than six weeks"*. This needs to be corrected.

The IRRS team was informed that the individual monitoring records of workers are held by the central dosimetry register for periods required by the International Safety Standards.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: The regulatory framework has not assigned responsibilities on employers for establishing and implementing measures and resources for the protection and safety of workers including for their optimization; or on workers to carry out their duties for protection and safety. The requirements to promote a safety culture, to establish and use as appropriate constraints, to minimize the reliance on administrative controls and personal protective equipment, to involve workers in the optimization of protection and safety; mechanisms for designation of workers who may work in controlled areas; or for adequate training of workers is also not provided for in the regulations.	
(1)	**BASIS: GSR Part 3 Requirement 21 states that** *"Employers, registrants and licensees shall be responsible for the protection of workers against occupational exposure. Employers, registrants and licensees shall ensure that protection and safety is optimized and that the dose limits for occupational exposure are not exceeded."*
(2)	**BASIS: GSR Part 3 Requirement 21 para. 3.76 (k) states that** *"Employers, registrants,.....Necessary conditions for promoting safety culture are provided."*
(3)	**BASIS: GSR Part 3 Requirement 21 para. 3.77 (a) & (b) states that** *"Employers, registrants and licensees:* *(a) Shall involve workers, through their representatives where appropriate, in optimization of protection and safety;* *(b) Shall establish and use, as appropriate, constraints as part of optimization of protection and safety."*
(4)	**BASIS: GSR Part 3 Requirement 22 states that** *"Workers shall fulfil their obligations and carry out their duties for protection and safety."*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(5)	**BASIS: GSR Part 3 Requirement 24 para. 3.88 states that "***Registrants and licensees shall designate as a controlled area any area in which specific measures for protection and safety are or could be required."*
(6)	**BASIS: GSR Part 3 Requirement 24 para. 3.90 (e) states that** *"Registrant and licensees shall restrict access to controlled areas by means of administrative procedures such as the use of work permits, and by physical barriers, which could include locks or interlocks, the degree of restriction being commensurate with the likelihood and magnitude of exposures."*
(7)	**BASIS: GSR Part 3 Requirement 24 para. 3.93 states that** *"Employers, registrants and licensees shall minimize the need to rely on administrative controls and personal protective equipment for protection and safety by providing well engineered controls and satisfactory working conditions, in accordance with the following hierarchy of preventive measures:* *(1) Engineered controls;* *(2) Administrative controls;* *(3) Personal protective equipment."*
(8)	**BASIS: GSR Part 3 Requirement 26 para. 3.110 (a) states that** *"Employers, in cooperation with registrants and licensees: (a) Shall provide all workers with adequate information on health risks due to their occupational exposure in normal operation, anticipated operational occurrences and accident conditions, adequate instruction and training and periodic retraining in protection and safety, and adequate information on the significance of their actions for protection and safety;"*
R19	**Recommendation: The regulatory body should ensure that all requirements for the protection and safety of workers in planned exposure situations are in compliance with the IAEA Safety Standards GSR Part 3.**

11.3. PUBLIC RADIATION PROTECTION

Environmental Monitoring

The Act empowers the regulatory body to impose requirements for source and environmental monitoring on the authorized party and for establishment of discharge limits from authorized practices. According to the General Radiation Protection Ordinance a dose constraint of 0.3 mSv per year is established for all facilities discharging liquid and gaseous radioactive material into the environment. Although the Act or the General Radiation Protection Ordinance do not explicitly specify the discharge limits, these are incorporated in the authorization and the "Supervisory Handbook" of BMBFW indicates that environmental monitoring is carried out in the research reactor facility. Independent verification of the monitoring results is carried out by the Austrian Agency for Health and Food Safety (AGES). BMNT operates a radiation early warning system and a laboratory-based environmental monitoring system. Assessment of

public exposures due to authorized practices is carried out jointly by the ministries involved at federal level and published on the website of BMNT.

With respect to reporting of the radioactive discharges and results of the environmental monitoring programme, there are no requirements for the facilities (in the scope of the mission) to submit periodic reports on public exposure (including results of monitoring programmes and dose assessments) to the regulatory body for review. The IRRS team was informed that the periodic reports are verified during regulatory inspections, the frequency of which may be varied, for different types of facilities. To some extent, the self-assessment report also identifies this aspect.

Dose Constraints

The annual dose limit for public exposure as prescribed in the General Radiation Protection Ordinance is 1mSv. The ordinance stipulates a dose constraint of 0.3 mSv per year for all radioactive discharges. In case of several facilities contributing to the exposures, the regulatory body has to impose a lower dose constraint to comply with the stipulated dose limits.

Visitors (in controlled and supervised areas)

Although the General Radiation Protection Ordinance mentions about control of access of non-occupationally exposed persons to radiation areas, the requirements with respect to the protection of visitors in controlled and supervised areas as per IAEA Safety Standards GSR Part 3 para 3.128, are not fully covered in the Act or the General Radiation Protection Ordinance.

Exemption and Clearance

Provision for exemption and clearance of sources/materials is available in the Act. However, the exemption criteria for radioactive sources is not mentioned in the Act or the General Radiation Protection Ordinance. The exemption levels provided in Annex 1 of the General Radiation Protection Ordinance are consistent with IAEA Safety Standards GSR Part 3. Clearance levels and criteria are broadly in agreement with the IAEA Safety Standards GSR Part 3. The IRRS team was informed that with the revised regulations transposing the BSS Directive 2013/59/Euratom into the Austrian regulatory framework, the criteria and the clearance levels would be more aligned with the Schedule I of the IAEA Safety Standards GSR Part 3.

Consumer Products

The Act requires justification of new classes or types of handling sources resulting in exposure to ionizing radiation, prior to their first authorization. However, the IRRS team was informed that no formal procedures exist for the justification of consumer products. This aspect is addressed in the recommendations in Section 4. BMNT regulates consumer goods (other than those subject to the food safety and consumer protection Act). Consumer products containing radioactive substances are authorized by a Notification of decision of a type approval. In case of consumer products containing radioactive substances, not all the requirements of IAEA Safety Standards GSR Part 3 Paras 3.138 to 3.144. in relation to design, manufacture and supply are addressed in the Act or Ordinances.

Human Imaging using radiation for purposes other than medical diagnosis, medical treatment or biomedical research

The IRRS team was informed that human imaging for the purpose of age determination and also for the detection of concealed objects is practiced in Austria. However, further information on justification in this regard was not available. Dose constraints to be applied for human imaging for the above-mentioned purposes are not established.

The IRRS team was informed that with the revised regulations transposing the BSS Directive 2013/59/Euratom into the Austrian regulatory framework this issue will be resolved.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
Observation: There are some missing or limited requirements in the Act and the Ordinances with respect to control of public exposures. These include no requirement for all the regulated facilities to submit periodic reports on public exposures to the regulatory body for review; limited requirements for visitors in radiation areas; designers, manufacturers and other providers of consumer products; no criteria for justification or requirement for establishment of dose constraints in case of human imaging for purposes other than medical diagnostic, treatment or biomedical research purposes.	
(1)	**BASIS: GSR Part 3 Requirement 32 para. 3.135(b) states that** *"The regulatory body shall be responsible, as appropriate, for….(b) Review of periodic reports on public exposure …."*
(2)	**BASIS: GSR Part 3 Requirement 32 para. 3.137(c) states that** *"Registrants and Licensees shall, as appropriate …(c)Report or make available to the regulatory body the results of the monitoring programme at approved intervals, including, as applicable, the levels and composition of discharges, dose rates at the site boundary and in premises open to members of the public, results of environmental monitoring and retrospective assessments of doses to the representative person."*
(3)	**BASIS: GSR Part 3 Requirement 30 para 3.128 states that** *"Registrants and licensees, in cooperation with employers where appropriate: (a) Shall apply the relevant requirements of these Standards in respect of public exposure for visitors to a controlled area or a supervised area …..(d) Shall ensure that adequate control is maintained over the entry of visitors to a controlled area or a supervised area…"*
(4)	**BASIS: GSR Part 3 Requirement 33 para. 3.139 states that** *"Upon receipt of a request for authorization to provide consumer products to the public, the regulatory body:(a) Shall require the provider of the consumer product to provide documents to demonstrate compliance with the requirements in paras 3.138–3.144;"*
(5)	**BASIS: GSR Part 3 Requirement 33 para. 3.141 states that** "*The design and manufacture of consumer product, with regard to features that could affect exposure during normal handling,… take into account the following: (a) The various radionuclides that could be used in consumer products …. (b) The chemical and physical forms of the radionuclides that could be used in consumer*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
	products and their significance for protection and safety in normal conditions and abnormal conditions…"
(6)	**BASIS: GSR Part 3 Requirement 18 states that** *"The government shall ensure that the use of ionizing radiation for human imaging for purposes other than medical diagnosis, medical treatment or biomedical research is subject to the system of protection and safety."*
(7)	**BASIS: GSR Part 3 Requirement 18 para 3.61 states that** *"The government, if so decided in accordance with paras 3.18, 3.20 and 3.21, shall ensure that the requirements of para. 3.16 for the justification of practices are applied to any type of human imaging procedure in which radiation is used for purposes other than for medical diagnosis or medical treatment or other than as part of a programme of biomedical research. The justification process shall include the consideration of…a)….(e) The availability of sufficient resources to conduct the human imaging procedure safely throughout the intended period of the practice."*
(8)	**BASIS: GSR Part 3 Requirement 18 para 3.64 states that** *"For human imaging using radiation…. for employment related, legal or health insurance purposes without reference to clinical indications: (a) The government shall ensure, on the basis of consultation between relevant authorities, professional bodies and the regulatory body, that dose constraints are established for such human imaging; (b) The registrant or licensee shall ensure that the appropriate optimization requirements for medical exposure in paras 3.162–3.177 are applied, with dose constraints as required in (a) above used instead of diagnostic reference levels."*
R20	**Recommendation: The regulatory body should ensure that all requirements for the control of public exposures are in compliance with the IAEA Safety Standards GSR Part 3.**

11.4. SUMMARY

Austria has established a legal and regulatory framework for justification and optimization of medical exposure and for the optimization of occupational and public exposures. The regulatory framework is largely consistent with the IAEA Safety Standards GSR Part 3. There are some gaps that should be addressed to ensure full compliance.

The regulatory body has established national diagnostic reference levels. Dose constraints have been established for carers and comforters, volunteers in biomedical research and for family members of patients that undergo treatments with sealed or unsealed sources.

Medical practitioners have a guideline supporting them in selecting proper radiological examinations. The radiation doses presented in the medical practitioners' guidelines are not relevant for selecting the proper radiological examination.

As one of the principal parties, employers have not been assigned responsibilities under the regulation for establishing and implementing measures and resources for the protection and safety of workers. Such responsibilities have been placed on authorized parties. Similarly, the regulation does not require workers to fulfil their duties for protection and safety.

The regulation has largely established organizational, procedural and technical arrangements for the control of occupational exposure. However, the obligations for implementing some of these measures have been placed on the regulatory body rather than on the employer or authorized parties. According to the international safety standards, as the parties with prime responsibility for safety, authorized parties and employers should be the responsible for implementing and optimizing measures and for promoting a safety culture.

The provisions for exemption and clearance, environmental monitoring, control of discharges and establishment of dose constraints are addressed in the regulatory framework. However, some missing requirements were observed by the IRRS team with respect to alignment with IAEA Safety Standards GSR Part 3 in this area. Some of these gap areas were identified in the self-assessment report of the regulatory body and in the Initial Action Plan. Many of these missing requirements are expected to be addressed when the BSS Directive 2013/59/Euratom is transposed in the Austrian regulatory framework. These requirements should be incorporated in the regulatory framework for strengthening the mechanism for control of public exposures.

APPENDIX I - LIST OF PARTICIPANTS

INTERNATIONAL EXPERTS			
1.	MARKKANEN Mika	Radiation and Nuclear Safety Authority (STUK), FINLAND	Mika.Markkanen@stuk.fi
2	STRITAR Andrej	Slovenian Nuclear Safety Administration, SLOVENIA	andrej.stritar@gov.si
3.	CIUREA-ERCAU Cantemir	National Commission for Nuclear Activities Control (CNCAN) ROMANIA	cantemir.ciurea@cncan.ro
4.	DE OLIVEIRA MARTINS João	Agencia Portuguesa do Ambiente PORTUGAL	joao.martins@apambiente.pt
5.	KAMOON Ashraf	Nuclear and Radiological Regulatory Authority, EGYPT	ashrafkamoun2004@live.com
6.	KRS Petr	State Office for Nuclear Safety (SÚJB) CZECH REPUBLIC	Pet.Kr@seznam.cz
7.	RAJAPPA Uma	Environmental Health Hazards Department of Health AUSTRALIA	uma.rajappa@gmail.com
8.	SIVARAMAKRISHNAN Mahalakshmi	Atomic Energy Regulatory Board INDIA	lakshmi@aerb.gov.in
9.	THUNBERG Stefan	Swedish Radiation Safety Authority (SSM), SWEDEN	Stefan.Thunberg@ssm.se
IAEA STAFF MEMBERS			
1.	MANSOUX Hilaire	Division of Radiation, Transport and Waste Safety	H.Mansoux@iaea.org
2.	MACSUGA Géza	Division of Nuclear Installation Safety	G.Macsuga@iaea.org

3.	SUMAN Hazem	Department of Nuclear Safety and Security	H.Suman@iaea.org
4.	Zumi Swoboda	Division of Radiation, Transport and Waste Safety	Z.Swoboda@ieaa.org
5.	WANG, Chongxiang	Division of Nuclear Installation Safety	C.Wang@iaea.org
6.	GEWESSLER Lyn	Division of Radiation, Transport and Waste Safety	L.Gewessler@iaea.org
LIAISON OFFICER			
1.	MOLIN Andreas	Liaison Officer Directorate I/6, General Coordination of Nuclear Affairs Federal Ministry of Sustainability and Tourism	Andreas.Molin@bmnt.gv.ati

APPENDIX II LIST OF COUNTERPARTS

IRRS EXPERTS	COUNTERPART
RESPONSIBILITIES AND FUNCTIONS OF THE GOVERNMENT	
KRS Petr STRITAR Andrej	KARG Viktor (BMNT); REISNER Dominik (BMBWF)
GLOBAL SAFETY REGIME	
KRS Petr STRITAR Andrej	KARG Viktor (BMNT); REISNER Dominik (BMBWF)
RESPONSIBILITIES AND FUNCTIONS OF THE REGULATORY BODY	
KRS Petr STRITAR Andrej	KARG Viktor (BMNT); REISNER Dominik (BMBWF)
MANAGEMENT SYSTEM	
CIUREA Cantemir	HOLUBETZ Volker (BMNT); BUCK Susanne (BMBWF); DITTO Manfred (BMASGK); FISCHER Helmut (BMNT)
AUTHORIZATION	
SUMAN Hazem KAMOON Ashraf	BISCHOF Domink (BMNT); DITTO Manfred (BMASGK); BUCK Susanne (BMBWF) BUCK Susanne (BMBWF); HAYDEN-KLINGER Konstanze (BMBWF); NOWOTNY Evelyn (BMBWF); HAMPEL Gabriele (Inspector)
REVIEW AND ASSESSMENT	
SUMAN Hazem KAMOON Ashraf MACSUGA Géza	BISCHOF Domink (BMNT); DITTO Manfred (BMASGK); BUCK Susanne (BMBWF) BUCK Susanne (BMBWF); HAYDEN-KLINGER Konstanze (BMBWF); NOWOTNY Evelyn (BMBWF); HAMPEL Gabriele (Inspector)
INSPECTION	
SUMAN Hazem	BISCHOF Domink (BMNT); DITTO Manfred (BMASGK); BUCK Susanne (BMBWF)

IRRS EXPERTS	COUNTERPART
KAMOON Ashraf MACSUGA Géza	BUCK Susanne (BMBWF); HAYDEN-KLINGER Konstanze (BMBWF); NOWOTNY Evelyn (BMBWF); HAMPEL Gabriele (Inspector)
ENFORCEMENT	
SUMAN Hazem KAMOON Ashraf MACSUGA Géza	BISCHOF Domink (BMNT); DITTO Manfred (BMASGK); BUCK Susanne (BMBWF) BUCK Susanne (BMBWF); HAYDEN-KLINGER Konstanze (BMBWF); NOWOTNY Evelyn (BMBWF); HAMPEL Gabriele (Inspector)
REGULATIONS AND GUIDES	
SUMAN Hazem KAMOON Ashraf MACSUGA Géza	BISCHOF Domink (BMNT); DITTO Manfred (BMASGK); BUCK Susanne (BMBWF) BUCK Susanne (BMBWF); HAYDEN-KLINGER Konstanze (BMBWF); NOWOTNY Evelyn (BMBWF); HAMPEL Gabriele (Inspector)
EMERGENCY PREPAREDESS AND RESPONSE	
OLIVEIRA MARTINS João	HOFER Peter (BMNT); BUCK Susanne (BMBWF); DITTO Manfed (BMASGK)
ADDITIONAL AREAS - Medical Exposure	
THUNBERG Stefan	DITTO Manfred (BMASGK)
ADDITIONAL AREAS - Occupational Exposure	
RAJAPPA Uma	FISCHER Helmut (BMNT)
ADDITIONAL AREAS - Control of radioactive discharges and materials for clearance, Environmental monitoring associated with authorized practices for public radiation protection purposes	
MAHALAKSHMI Sivaramakrishnan	FISCHER Helmut (BMNT)

APPENDIX III MISSION PROGRAMME

IRRS AUSTRIA MISSION PROGRAMME		
Sunday 24 June 2018		
IRRS Initial IRRS Review Team Meeting		
13:30 - 17:30	Opening remarks by the IRRS Team Leader Introduction by IAEA Team Coordinator IRRS Team Members - Self-introduction: *Each team member to give a brief statement of their careers and current responsibilities* *(2 min each)* Presentation of the IRRS Process (TC, DTC) Guidance for Reporting (TC, DTC) Review of Mission Schedule (TL, TC, LO) Logistical Arrangements (LO) Report of Initial Review of Advance Reference Material: *Reviewers to briefly present (10 min each) their initial impressions of the advance reference material. This is also an opportunity to raise any initial concerns or specific requests for clarification with the liaison officer. The order of the presentations is that of IRRS Modules* Closing Remarks/Questions Preparation for daily Interviews: *(The team members may continue working in their subject areas, after the closure of the meeting, to agree upon their approach for conducting the interviews)*	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: IRRS Team + LO

IRRS AUSTRIA MISSION PROGRAMME		
Monday 25 June 2018		
IRRS Entrance Meeting		
09:30 – 12.00	09:30 Arrival, registration, coffee 10:00 Welcoming Address by DG PICHL (BMBWF) 10:15 The IRRS Programme by H. Mansoux (IAEA) 10:30 Expectations for the Mission and introduction of the IRRS Team by M. Markkanen (Team Leader) 10:45 Introduction of the main Austrian Counterparts by A. Molin (Liaison Officer) 11:00 Regulatory Overview, Self Assessment results by A. Molin 11:50 Group photo	Venue: *Federal Ministry of Education, Science and Research,* *1010 Vienna, Freyung 3,* *2nd floor, Event Hall* Participants: Government Official, RB Management and staff, Officials from relevant organizations, IRRS Team + LO
12:00 – 13:00	Buffet Lunch	Venue: *Federal Ministry of Education, Science and Research,* *1010 Vienna, Freyung 3,* *adjacent to Event Hall*
13:30 – 17:00	Interviews and Discussions with Counterparts (parallel discussions) Modules1, 2 and 3 Module 4 Modules 5 to 9 Research Reactor Modules 5 to 9 General Radiation Protection Module 10 Module 11: Occupational Radiation Protection Module 11: Public Exposure Module 11: Medical Exposure	Venue: *Permanent Location & Counterparts offices* Participants: IRRS Team Reviewers + Counterparts (for details see separate schedule for interviews)
17:00 - 18:00	Daily IRRS Review Team meeting	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: IRRS Team + LO.

IRRS AUSTRIA MISSION PROGRAMME		
18:30 -	Writing the report	IRRS Team
Tuesday 26 June 2018		
Daily Discussions / Interviews		
09:00 – 17:00	Interviews and Discussions with Counterparts (parallel discussions) Modules1, 2 and 3 Module 4 Modules 5 to 9 Research Reactor Modules 5 to 9 General Radiation Protection Module 10 Module 11: Occupational Radiation Protection Module 11: Public Exposure Module 11: Medical Exposure	IRRS Reviewers Permanent Location & Counterparts offices: Film Team in the afternoon (for details see separate schedule for interviews)
12:00 – 13:00	Lunch	
13:00 – 14:30	Meeting with Ministries' Directors General	Venue: *1010 Vienna, Stubenbastei 5, 6th floor Room # 632* Participants: IRRS TL, DTL, TC, DTC Reviewer Modules 1,2, and 3 + DGs, DDG, Directors, LO
17:00 – 18:00	Daily IRRS Review Team meeting	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: IRRS Team + LO.
18:30-	Writing the report	IRRS Team
Wednesday 27 June 2018		
Daily Discussions / Interviews		
08:30 – 17:00 8:30 pick-up at hotel 10:00 inspection	Site Visits Sozialmedizinisches Zentrum Süd, Kaiser-Franz-Josef-Spital, Kundratstraße 3, 1100	Inspectors and IRRS Team IRRS Team Members: Suman, Thunberg, Rajappa Guide: Ditto (Spiegel) Inspectors: Wittig, Martitsch

IRRS AUSTRIA MISSION PROGRAMME		
	Wien	
14:00 appr. Meeting with management of licensee		IRRS team, KFJ, Film Team
8:30 pick-up at hotel 9:00 oral hearing	TU Wien –Atominstitut Stadionallee 2, 1020 Wien	IRRS Team Members Stritar, Macsuga, Kamoon Observer: Wang Guide: Reisner, Inspectors: Buck, Haden-Klinger
14:00 appr. Meeting with management of licensee		IRRS team, ATI, Film Team
9:00	Counterparts from BMNT (Bischof, Fischer, Hofer, Holubetz, Karg) will be available for interviews with those experts not taking part in the inspections (Krs, Ciurea, Martins, Mahalakshmi)	
12:00 – 13:00	Lunch	
13:00 – 17:00	Writing first draft of preliminary findings (Rs, Ss and GPs)	IRRS team
17:00 – 18:00 extended as needed	Quick briefing on site visits Daily IRRS Review Team meeting **(First draft of Rs, Ss and GPs)**	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: IRRS Team + LO.
18:00 -	Writing the report	IRRS Team
Thursday 28 June 2018		
Daily Discussions / Interviews		
9:00 -10:00 extended as needed	Follow-up Interviews and Discussions with Counterparts (parallel discussions)	IRRS Reviewers Permanent Location & Counterparts offices:
12:00 -13:00	Lunch	
13:00 – 17:00	Writing the report	IRRS Team

IRRS AUSTRIA MISSION PROGRAMME		
17:00 – 18:00 extended as needed	Daily IRRS Review Team Meeting: Finalize observations, recommendation, suggestions and good practices	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: the IRRS Team + LO.
Friday 29 June 2018		
Daily Discussions / Interviews		
09:00 – 12:00	Team members write draft report (individually). Cross reading of the report	IRRS Team
12:00 -13:00	Lunch	
13:00 – 15:00 13:00 – 14:00 14:00 – 15:00	Policy issue discussion: Independence of the RB Creation of an Integrated RB	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: Reviewers and Counterparts and Officers
15:00 – 18:00	Discussion of draft mission report with Counterparts by module	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: Reviewers and Counterparts + LO:
19:00 – 22:00	Daily Team Meeting: Cross Reading continues	Venue: Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: IRRS Team + LO

IRRS AUSTRIA MISSION PROGRAMME		
Saturday 30 June 2018		
Daily Discussions/ Interviews (if needed)		
08:30 –	Team finalize the report together TL, DTL, TC and DTC Review the draft report and draft report submitted to RB for comments (Lunch will be available)	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* IRRS Team TL, DTL, TC and DTC
Sunday 1 July 2018		
09:00 10:30 – 12:30 13:00 approx. 16:30 approx.	**IRRS Team rest day and Social Event** Pick up at hotel Guided Tour NPP Zwentendorf Lunch: *Winzerhaus KATTNER, Obere Ortsstraße 50, 3134 Reichersdorf* Return to hotel	
Monday 2 July 2018		
Daily Discussions		
08:00 – 12:00	RB review draft report	Venue: *1020 Vienna, Untere Donaustraße 11, 7th floor Room # 705*
12:00 –	RB submits comments to IRRS team	
12:00- 13:00	Lunch	
13:00- 15:00	IRRS Team Reviews comments	Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: IRRS Team

IRRS AUSTRIA MISSION PROGRAMME		
15:00 –	Finalize the draft report with RB	Venue: Venue: *1020 Vienna, Untere Donaustraße 11, 6th floor BMNT meeting room (Permanent Location)* Participants: IRRS Team and RB
19:30	Farewell Dinner	Venue: *Motto am Fluss, Franz Josefs Kai 2, 1010 Vienna*
Tuesday 3 July 2018		
Daily Discussions		
09:00	Draft report hand over to RB	IRRS Team
13:00 – 14:00	EXIT MEETING Main findings of the IRRS mission (Team Leader) Remarks by DG LIEBEL in response to the mission findings Closing Remarks by IAEA Official (DDG LENTIJO) Press release	Venue: *Federal Ministry of Education, Science and Research, 1010 Vienna, Minoritenplatz 5, 1st floor, Audience Hall* Participants: Government Officials, RB Management and staff, Officials from relevant organizations, IRRS Team + LO + counterparts + Film Team
14:00	Buffet Lunch	Venue: *Federal Ministry of Education, Science and Research, 1010 Vienna, Minoritenplatz 5, adjacent to Audience Hall*

APPENDIX IV SITE VISITS

TRIGA Mark II Research Reactor

Kaiser Franz Joseph Hospital (radiotherapy facility)

APPENDIX V RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
1.	RESPONSIBILITIES AND FUNCTIONS OF THE GOVERNMENT	R1	The Government should establish a national policy and strategy for safety to express its long-term commitment to safety and ensure that fundamental safety objective and fundamental safety principles as per IAEA SF-1 are fully embedded into the national framework for safety.
		R2	The Government should review the regulatory framework at the federal level to avoid any potential conflict of interest and to ensure the appropriate independence in the discharge of safety related regulatory functions.
		S1	The Government should consider reorganizing the existing fragmented system of several federal regulatory authorities into a simpler structure that would allow for a more efficient use of available resources.
		S2	The Government should consider explicitly stating in the legal framework that the compliance with regulations and requirements established or adopted by the regulatory body does not relieve the person or organization responsible for a facility or an activity of its prime responsibility for safety.
		S3	The regulatory body should consider further harmonizing regulatory practices among all authorities involved in regulatory control.
		S4	The Government should consider establishing the National Waste Management Programme.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
2.	**GLOBAL SAFETY REGIME**	S5	The Government should consider making more use of international peer review services to share knowledge and experience and receive feedback on existing national safety arrangements.
		R3	The regulatory body should make arrangements for using operating and regulatory experience feedback in a structured and systematic way, including feedback on measures taken in response to information received.
3.	**RESPONSIBILITIES AND FUNCTIONS OF THE REGULATORY BODY**	R4	The regulatory body should avoid any direct or indirect involvement in the implementation of radiation protection measures in the authorized facilities and activities which may conflict with the authorized party's prime responsibility for safety.
		R5	The regulatory body should develop and systematically use formal processes to assess sufficiency and competence of staff and to ensure long term human resource and succession planning and recruitment, appropriate training and knowledge management.
		S6	The regulatory body should consider establishing criteria and process for selection, approval or accreditation of external experts assuring their expertise.
		S7	The BMNT should consider defining which X-ray generators are to be included in the central source register and should consider expanding the information relating to sealed sources as to systematically include information on the devices containing the sources, if applicable.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
4.	**MANAGEMENT SYSTEM OF THE REGULATORY BODY**	R6	The regulatory body should further develop and implement its integrated management system for complying fully with the requirements set out in IAEA safety standards.
5.	**AUTHORIZATION**	R7	The regulatory body should specify criteria on which facilities need preparation and implementation of radiation protection measures during construction.
		R8	The regulatory body should issue guidance on the periodic safety review beyond the requirements set forth in the General Radiation Protection Ordinance.
		R9	The regulatory body should establish guidance on the format and contents of the documents required in the application for authorization such as the safety analysis for all facilities and activities.
		R10	The regulatory body should establish written criteria and procedures for the formal recognition of qualified experts providing advice to authorized parties.
		R11	The regulatory body should ensure that the applicant/authorized party is required to carry out independent verification of its safety assessment before it is used by the operating organization or submitted to the regulatory body.
		R12	The regulatory body should establish requirements for periodic review of the safety assessment for all facilities and activities taking into account the associated radiological risk in accordance with a graded approach.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
6.	**REVIEW AND ASSESSMENT**		NA
7.	**INSPECTION**	R13	The Government should ensure the free access by regulatory inspectors to any facility or activity, at any time, within the constraints of ensuring operational safety at all times and other constraints associated with the potential for harmful consequences.
		R14	The regulatory body should include into its programme of inspections also unannounced inspections, in accordance with the graded approach.
		R15	The regulatory body should require the authorized parties to monitor and control activities performed by contractors.
8.	**ENFORCEMENT**	S8	The regulatory body should consider establishing an enforcement policy and putting in place formal procedures for enforcement that ensure, inter alia, the application of a graded approach, efficient follow-up and formal documentation and communication of the enforcement actions taken.
9.	**REGULATION AND GUIDES**	R16	The regulatory body should include in the regulations requirements for the authorized parties to establish, apply, sustain and continuously improve a management system to ensure safety, taking into consideration a graded approach.
10.	**EMERGENCY PREPAREDNESS AND RESPONSE**	R17	The Government should revise the legislation on on-site emergency preparedness and response to ensure compliance with the IAEA Safety Standards GSR Part 7.

Area		R: Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		R18	The regulatory body should ensure that arrangements are in place so that medical personnel, both general practitioners and medical emergency staff, are made aware of the clinical symptoms of radiation exposure and notification procedures and other emergency response actions to be taken if a nuclear or radiological emergency arises or is suspected.
11.1	**CONTROL OF MEDICAL EXPOSURES**	S9	The regulatory body should consider including the relevant dose information in the medical practitioners' guidelines.
11.2	**OCCUPTIONAL RADIATION PROTECTION**	R19	The regulatory body should ensure that all requirements for the protection and safety of workers in planned exposure situations are in compliance with the IAEA Safety Standards GSR Part 3.
11.3	**CONTROL OF RADIOACTIVE DISCHARGES AND MATERIAL FOR CLEARANCE, ENVIRONMENTAL MONITORING ASSOCIATED WITH AUTHORIZED PRACTICES FOR PUBLIC RADIATION PROTECTION PURPOSES** **CONTROL OF CHRONIC EXPOSURES**	R20	The regulatory body should ensure that all requirements for the control of public exposures are in compliance with the IAEA Safety Standards GSR Part 3.

APPENDIX VI REFERENCE MATERIAL USED FOR THE REVIEW

ADVANCE REFERENCE MATERIAL	
ARMS Summary Report	
1.	IRRS AT ARM Summary Report FINAL 24042018.pdf
2.	ARM SARIS Table of references FINAL 16042018.docx
3.	IRRS AT ARM SARIS Table of references.pdf
4.	IRRS AT ARM Summary Report FINAL 24042018.docx
5.	
Austria Saris Report	
6.	Regulation of Research Reactors.pdf
7.	Safety Requirements for Medical Exposure.pdf
8.	Safety Requirements for Occupational Radiation Protection.pdf
9.	Safety Requirements for the Control of Public Exposure.pdf
10.	00. Country Information and the Self-Assessment Team(s).pdf
11.	01. Responsibilities and Functions of the Government.pdf
12.	02. The Global Safety Regime.pdf
13.	03. Responsibilities and Functions of the Regulatory Body.pdf
14.	04. Management System for the Regulatory Body.pdf
15.	05. Authorization.pdf
16.	06. Review and Assessment.pdf
17.	07. Inspection.pdf
18.	08. Enforcement.pdf
19.	09. Regulations and Guides.pdf
20.	10. Basic Primary responsibilities of the regulatory body (RB) in emergency.pdf
Austria reference documents:	
21.	00 Federal Constitutional Law.pdf
22.	01 Federal Constitutional Act for a Nonnuclear Austria.pdf
23.	02 Radiation Protection Act.pdf
24.	03 Atomic Liability Act.pdf
25.	04 Nuclear Non-Proliferation Act.pdf
26.	05 General Radiation Protection Ordinance.pdf
27.	06 General Radiation Protection Ordinance Annex 3.pdf
28.	07 General Radiation Protection Ordinance Annex 5.pdf
29.	08 General Radiation Protection Ordinance Annex 8.pdf
30.	General Radiation Protection Ordinance Annex 12
31.	09 General Radiation Protection Ordinance Annex 13.pdf
32.	10 General Radiation Protection Ordinance Annex 14.pdf
33.	11 General Radiation Protection Ordinance Annex 15.pdf
34.	12 General Radiation Protection Ordinance Annex 17.pdf
35.	13 General Radiation Protection Ordinance Annex 18.pdf
36.	14 Medical Radiation Protection Ordinance.pdf

ADVANCE REFERENCE MATERIAL	
37.	14a Medical Radiation Protection Ordinance 2017.pdf
38.	15 Intervention Ordinance.pdf
39.	16 Natural Radiation Sources Ordinance.pdf
40.	17 Federal Ministries Act.pdf
41.	18 General Administrative Procedure Act.pdf
42.	19 Administrative Enforcement Act.pdf
43.	20 Federal Act on the Federal Law Gazette.pdf
44.	21 Administrative Penal Act.pdf
45.	22 Civil Servants Employment Act.pdf
46.	23 Rules of Procedure Act.pdf
47.	24 Office Regulations.pdf
48.	25 Accreditation Act.pdf
49.	26 Medical Practitioners Act.pdf
50.	27 Medicinal Products Act.pdf
51.	28 Federal Act Regulating Medical Technical Professions.pdf
52.	29 Hospitals and Sanatoria Act.pdf
53.	30 Food Safety and Consumer Protection Act.pdf
54.	31 Protection of Personal Data Act.pdf
55.	32 Safety and Health at Work Act.pdf
56.	33 General Social Security Act.pdf
57.	34 Metrology Act.pdf
58.	35 Dental Practitioners Act.pdf
59.	36 Medical Assistant Professions Act.pdf
60.	37 Medical Devices Act.pdf
61.	38 University Act.pdf
62.	39 Waste Management Act.pdf
63.	40 Environmental Impact Assessment Act.pdf
64.	41 Ordinance on Education and Training for Medical Technical Professions.pdf
65.	42 Ordinance on Education and Training for Medical Assistant Professions.pdf
66.	43 Ordinance on Education and Training for Medical Practitioners.pdf
67.	44 Ordinance on Dental Assistance Education and Training.pdf
68.	45 Ordinance on Incident Information.pdf
69.	46 Model Regulations for Health Service Utilization.pdf
70.	47 Good Clinical Practice Directive.pdf
71.	48 GRPO Explanations and Comments.pdf
72.	49 Guidelines on EPR Practices.pdf
73.	50 National Intervention Plan Part 1 – Incidents in nuclear facilities.pdf
74.	51 National Intervention Plan Part 2 – Crash of satellite with radioactive inventory.pdf
75.	52 National Intervention Plan Part 3 – Incidents in Austrian Plants.pdf
76.	53 National Intervention Plan Part 4 – Incidents with dangerous sources of radiation.pdf
77.	54 National Intervention Plan Part 5 – Radiological Terrorism.pdf
78.	55 National Intervention Plan Part 6 – Emergency plan for medical diagnostics and therapy units.pdf

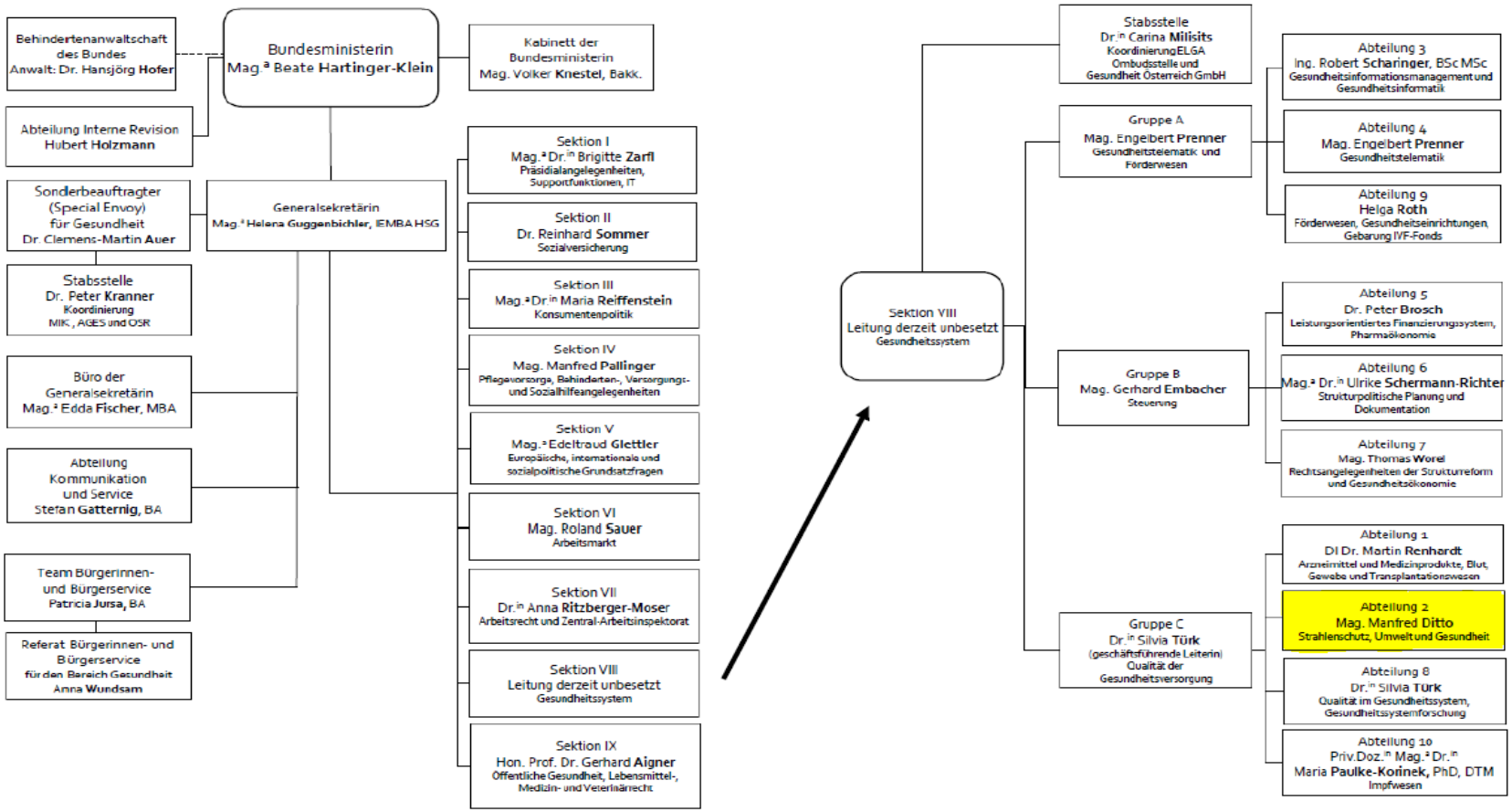
ADVANCE REFERENCE MATERIAL	
79.	56 Regulatory Supervisory Handbook.pdf
80.	57 Catalogue of measures in case of radiological emergencies.pdf
81.	58 Internal EPR training and drills plan.pdf
82.	59 Emergency Plan NES rev02.00.pdf
83.	60 Special Emergency Plan for all facilities at Seibersdorf Nov 2014.pdf
84.	61 Administration in Austria.pdf
85.	66 Organisation of Business BMGF.pdf
86.	67 Rules of Procedure BMGF.pdf
87.	71 BM LFUW Goals 2017 I-7.pdf
88.	72 7th National Report CNS.pdf
89.	73 6th National Report under the Joint Convention.pdf
90.	74 BM LFUW Work plan 2018 I-7.pdf
91.	AUSTRIA – Atomic Liability Act.pdf
92.	StrSchVO Anlage_2.pdf
93.	StrSchVO Anlage_6.pdf
94.	StrSchVO Anlagen 2-9.pdf
95.	Policy paper 1 - Creation of an Integrated Regulatory Body
96.	Policy paper 2 - Independence of the Regulatory Body
97.	IRRS AT Initial Action Plan FINAL.docx

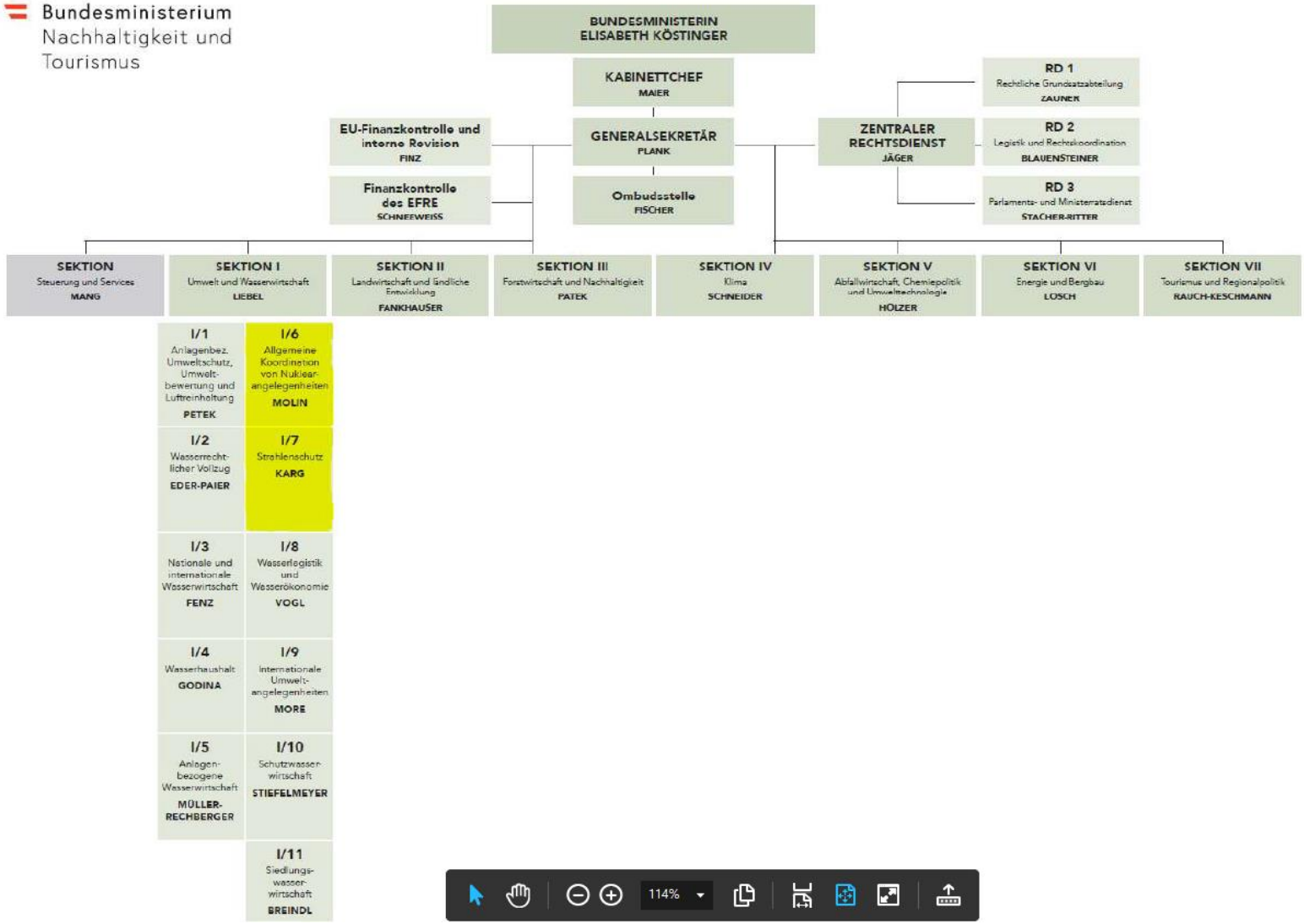
APPENDIX VII IAEA REFERENCE MATERIAL USED FOR THE REVIEW

1. INTERNATIONAL ATOMIC ENERGY AGENCY - Fundamental Safety Principles, Safety Fundamentals No. SF-1, IAEA, Vienna (2006)
2. INTERNATIONAL ATOMIC ENERGY AGENCY - Governmental, Legal and Regulatory Framework for Safety, General Safety Requirements Part 1(Rev 1), IAEA, Vienna (2016)
3. INTERNATIONAL ATOMIC ENERGY AGENCY- Leadership and Management for Safety, General Safety Requirements GSR Part 2, IAEA, Vienna (2016)
4. INTERNATIONAL ATOMIC ENERGY AGENCY – Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, General Safety Requirements Part 3, Vienna, (2014)
5. INTERNATIONAL ATOMIC ENERGY AGENCY – Safety Assessment for Facilities and Activities, General Safety Requirements Part 4 (Rev 1), IAEA, Vienna (2016)
6. INTERNATIONAL ATOMIC ENERGY AGENCY – Predisposal Management of Radioactive Waste General Safety Requirements Part 5, IAEA, Vienna (2009)
7. INTERNATIONAL ATOMIC ENERGY AGENCY – Decommissioning of Facilities General Safety Requirement Part 6, No. GSR Part 6, IAEA, Vienna (2014)
8. INTERNATIONAL ATOMIC ENERGY AGENCY – Preparedness and Response for a Nuclear or Radiological Emergency General Safety Requirements Part 7, IAEA, Vienna (2015)
9. INTERNATIONAL ATOMIC ENERGY AGENCY - Safety of Research Reactors, Specific Safety Requirements No. SSR-3, IAEA, Vienna (2017)
10. INTERNATIONAL ATOMIC ENERGY AGENCY - Disposal of Radioactive Waste Specific Safety Requirements No. SSR-5, IAEA, Vienna (2011)
11. INTERNATIONAL ATOMIC ENERGY AGENCY– Assessment of Occupational Exposure Due to Intake of Radionuclides Safety Guide Series No. RS-G-1.2, IAEA, Vienna (1999)
12. INTERNATIONAL ATOMIC ENERGY AGENCY - Assessment of Occupational Exposure Due to External Sources of Radiation Safety Guide Series No. RS-G-1.3, IAEA, Vienna (1999)
13. INTERNATIONAL ATOMIC ENERGY AGENCY - Building Competence in Radiation Protection and the Safe Use of Radiation Sources, Safety Guide Series No. RS-G-1.4, IAEA, Vienna (2001)
14. INTERNATIONAL ATOMIC ENERGY AGENCY – Classification of Radioactive Waste, General Safety Guide No. GSG-1, IAEA, Vienna (2009)
15. INTERNATIONAL ATOMIC ENERGY AGENCY – Application of the Management System for Facilities and Activities GS-G 3.1 (2006)
16. INTERNATIONAL ATOMIC ENERGY AGENCY – Regulatory Control of Radioactive Discharge to the Environment, Safety Guide Series No. WS-G-2.3, IAEA, Vienna (2000)
17. INTERNATIONAL ATOMIC ENERGY AGENCY – Safety Assessment for the Decommissioning of Facilities Using Radioactive Material, Safety Guide Series No. WS-G.5.2, IAEA, Vienna (2009)

APPENDIX VIII ORGANIZATION CHART

Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz




Bundesministerium
Nachhaltigkeit und
Tourismus
BUNDESMINISTERIN
ELISABETH KÖSTINGER
KABINETTCHEF
MAIER
GENERALSEKRETÄR
PLANK
EU-Finanzkontrolle und interne Revision
FINZ
Finanzkontrolle des EFRE
SCHNEEWEISS
Ombudsstelle
FISCHER
ZENTRALER RECHTSDIENST
JÄGER
RD 1
Rechtliche Grundsatzabteilung
ZAUNER
RD 2
Legistik und Rechtskoordination
BLAUENSTEINER
RD 3
Parlaments- und Ministeratsdienst
STACHER-RITTER
SEKTION
Steuerung und Services
MANG
SEKTION I
Umwelt und Wasserwirtschaft
LIEBEL
SEKTION II
Landwirtschaft und ländliche Entwicklung
FANKHAUSER
SEKTION III
Forstwirtschaft und Nachhaltigkeit
PATEK
SEKTION IV
Klima
SCHNEIDER
SEKTION V
Abfallwirtschaft, Chemiepolitik und Umwelttechnologie
HÖLZER
SEKTION VI
Energie und Bergbau
LOSCH
SEKTION VII
Tourismus und Regionalpolitik
RAUCH-KESCHMANN
I/1
Anlagenbez. Umweltschutz, Umwelt-bewertung und Luftreinhaltung
PETEK
I/2
Wasserrecht-licher Vollzug
EDER-PAIER
I/3
Nationale und internationale Wasserwirtschaft
FENZ
I/4
Wasserhaushalt
GODINA
I/5
Anlagen-bezogene Wasserwirtschaft
MÜLLER-RECHBERGER
I/6
Allgemeine Koordination von Nuklear-angelegenheiten
MOLIN
I/7
Strahlenschutz
KARG
I/8
Wasserlegistik und Wasserökonomie
VOGL
I/9
Internationale Umwelt-angelegenheiten
MORE
I/10
Schutzwasser-wirtschaft
STIEFELMEYER
I/11
Siedlungs-wasser-wirtschaft
BREINDL
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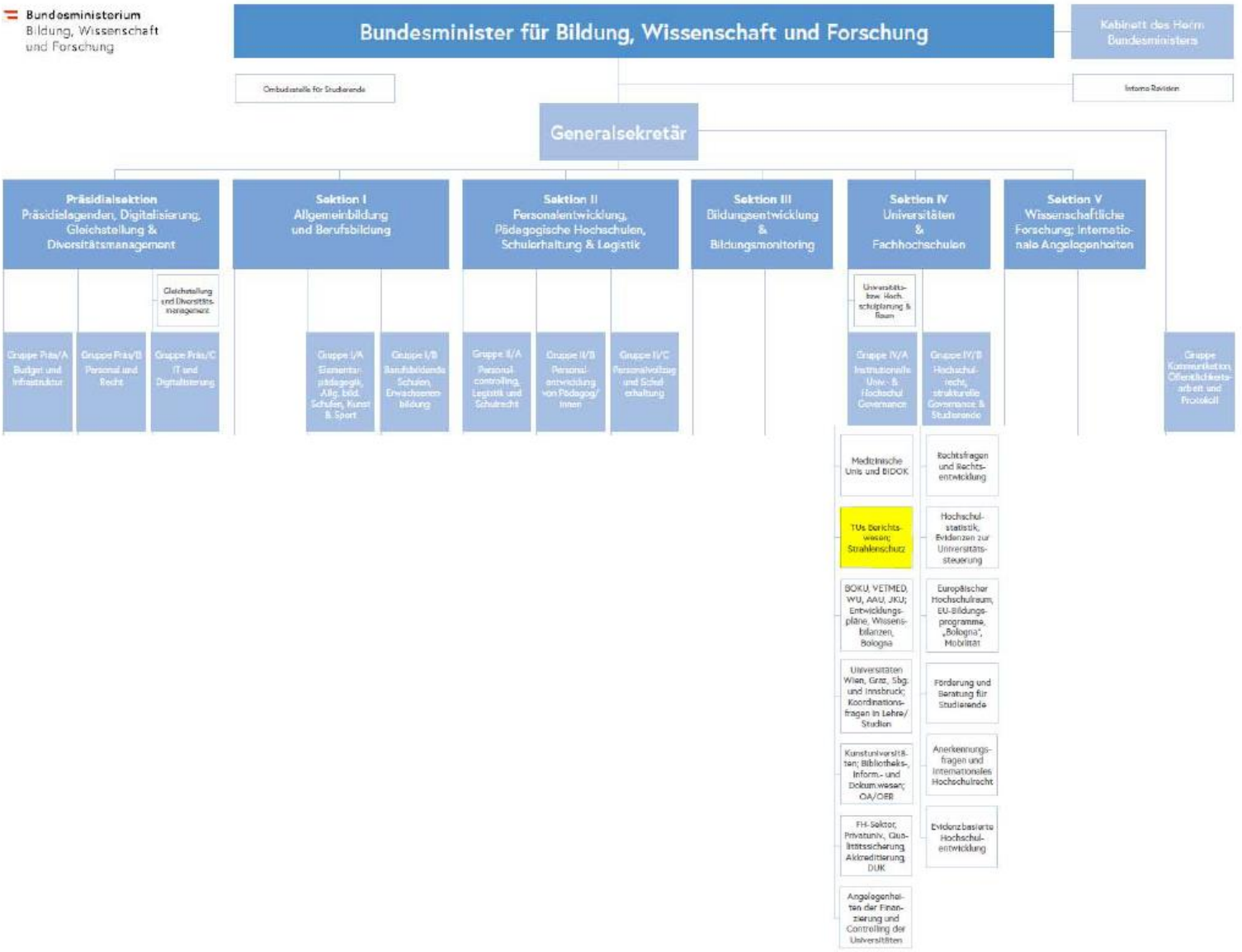
Bundesministerium
Bildung, Wissenschaft
und Forschung
Bundesminister für Bildung, Wissenschaft und Forschung
Kabinett des Herrn Bundesministers
Ombudsstelle für Studierende
Interne Revision
Generalsekretär
Präsidialsektion
Präsidialagenden, Digitalisierung, Gleichstellung & Diversitätsmanagement
Sektion I
Allgemeinbildung und Berufsbildung
Sektion II
Personalentwicklung, Pädagogische Hochschulen, Schulerhaltung & Logistik
Sektion III
Bildungsentwicklung & Bildungsmonitoring
Sektion IV
Universitäten & Fachhochschulen
Sektion V
Wissenschaftliche Forschung; Internationale Angelegenheiten
Gleichstellung und Diversitätsmanagement
Gruppe Präs/A Budget und Infrastruktur
Gruppe Präs/B Personal und Recht
Gruppe Präs/C IT und Digitalisierung
Gruppe I/A Elementar-, pädagogik, Allg. bild. Schulen, Kunst & Sport
Gruppe I/B Berufsbildende Schulen, Erwachsenenbildung
Gruppe II/A Personalcontrolling, Logistik und Schulrecht
Gruppe II/B Personalentwicklung von Pädagog/innen
Gruppe II/C Personalverwaltung und Schulerhaltung
Universitäts- bzw. Hochschulplanung & Raum
Gruppe IV/A Institutionelle Univ.- & Hochschul Governance
Gruppe IV/B Hochschulrecht, strukturelle Governance & Studierende
Gruppe Kommunikation, Öffentlichkeitsarbeit und Protokoll
Medizinische Unis und BIDOK
TUs Berichtswesen; Strahlenschutz
BOKU, VETMED, WU, AAU, JKU; Entwicklungspläne, Wissensbilanzen, Bologna
Universitäten Wien, Graz, Sbg. und Innsbruck; Koordinationsfragen in Lehre/Studien
Kunstuniversitäten; Bibliotheks-, Inform.- und Dokumwesen; OA/OER
FH-Sektor, Privatuniv, Qualitätssicherung, Akkreditierung, DUK
Angelegenheiten der Finanzierung und Controlling der Universitäten
Rechtsfragen und Rechtsentwicklung
Hochschulstatistik, Evidenzen zur Universitätssteuerung
Europäischer Hochschulraum, EU-Bildungsprogramme, „Bologna", Mobilität
Förderung und Beratung für Studierende
Anerkennungsfragen und Internationales Hochschulrecht
Evidenzbasierte Hochschulentwicklung