NATIONAL REPORT
OF AUSTRIA ON EPR ARRANGEMENTS

APRIL 2014
IMPRINT

National Report of Austria

Publisher:
FEDERAL MINISTRY OF AGRICULTURE, FORESTRY, ENVIRONMENT, WATER MANAGEMENT
(BUNDESMINISTERIUM FÜR LAND- UND FORSTWIRTSCHAFT, UMWELT UND WASSERWIRTSCHAFT)
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(National Competent Authority under the obligations of the Conventions)

Vienna, April 2014
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A. INTRODUCTION

A.1 ABOUT THIS REPORT

The Austrian National Report for the on Emergency Preparedness and Response Arrangements for the 7th Meeting of Representatives of Competent Authorities identified under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency follows the structure of the guide-lines for National EPR reports by IAEA.

A.2 GENERAL OUTLINE OF AUSTRIA'S NATIONAL POLICY ON EPR

The overall goal of the Austrian EPR arrangements is an adequate protection of the Austrian population and the environment in case of a nuclear or radiological emergency.

To achieve this goal the following targets shall be taken into account in establishing EPR arrangements in Austria:

- Austrian EPR shall be based on the current international regulations and standards and on a state of the art technology,
- An up-to-date systematic hazard assessment covering all possible nuclear and radiological events shall be the basis for Austria EPR arrangements,
- Following a graded approach EPR arrangements shall focus more on facilities and practises with higher potential impact,
- Concerning possible trans-boundary impacts Austria shall maintain and further deepen the bilateral cooperation with the neighbouring countries and periodically test these bilateral arrangements by joined emergency exercises,
- Transparency and communication with the public prior to and in the case of an emergency shall be a key element in EPR to guarantee the trust of the population in the Austrian authorities,
- Austria shall actively support further international harmonization of EPR arrangements
OVERVIEW ON EPR ARRANGEMENTS IN AUSTRIA

The Austrian EPR arrangements are based on a systematic hazard assessment. Nuclear or radiological facilities of hazard category III, such as a research reactor of low power, a central waste treatment and interim facility for low and intermediate level waste, are in operation in Austria. In addition about 1000 partly mobile dangerous sources (hazard category IV) and potential trans-boundary impacts of NPP accidents in neighbouring countries (hazard category V) are taken into account in the Austrian EPR arrangements.

The basic points of Austrian EPR arrangements are based on legal requirements of the Radiation Protection Act and subsequent Ordinances. The off-site EPR arrangements are determined in detail at federal level by the Austrian National Radiation Emergency Plan and at regional level by the emergency plans of the Austrian Federal Provinces. On-site EPR plans have to be prepared by the licensee and are part of the licensing process.

The roles and responsibilities for on-site and off-site EPR are described in detail in chapter D. In addition well defined notification and information pathways and coordinating mechanism are in place including an electronic situation reporting system to keep all involved organisations on the same information levels and the coordination committee of the Federal Crisis and Disaster Protection Management.

International cooperation in EPR is very important for Austria. The intense bilateral cooperation with neighbouring countries including bilateral emergency exercises is seen as a good practice. Austria has fully implemented the Early Notification Convention and the Assistance Convention and has registered national assistance capabilities to the IAEA Response Assistance Network system.

CHANGES AND IMPROVEMENTS

Major updates of EPR plans at federal (Austrian National Radiation Emergency Plan) and Provincial level have been undertaken. A Catalogue of Protective Measures elaborated in 2011 has been refined based on international experience and involvement of stakeholders in the field of agriculture, food production and waste management.

In 2012 an Austria-wide exercise (INTREX 2012) was performed. The exercise scenario was a Fukushima-like severe NPP accident in a neighbouring country. Main parts of the new emergency plans were tested in these 3 days of exercise. Specific weak points were identified and measures for improving the emergency management system in Austria are under implementation.

The Austrian Early Radiation Warning Systems with automatic dose rate and air monitoring stations and decision support systems implemented in Austria are permanently enhanced. The bilateral cooperation with the neighbouring countries has been extended also on a technical level. This includes an exchange of measurement and other emergency-relevant data and the mutual access to electronic situation reporting systems.

EXPERIENCES/CHALLENGES

A further harmonization and international cooperation in EPR is needed. International standards in specific areas e.g. contamination levels for import of goods would be highly appreciated.

Implementation of the new European Basic Safety Standards and new international standards in the field of EPR such as the updated GS-R-2 of IAEA within the next years will need additional efforts.

During the Fukushima emergency it again became clear that information of the public is one of the most important arrangements in EPR for Austria even if Austria is not directly affected by a nuclear or radiological emergency. The elaboration of a more comprehensive communication plan with media and the public is planned.
C. OVERVIEW OF NUCLEAR/RADIOLOGICAL FACILITIES AND ACTIVITIES

C.1 OVERVIEW OF THE NATIONAL HAZARD ASSESSMENT

A major update of the Austrian National Radiation Emergency Plan (NREP) was finalized in 2011. The update was based on the requirements of the Ordinance on Interventions in Case of Radiological Emergencies and in Case of Lasting Exposure (hereafter “Ordinance on Interventions”) and on the IAEA EPR-METHOD (2003). During this updating process a new systematic hazard assessment for all nuclear and radiological hazards potentially affecting Austria was performed. All hazards covered by EPR-METHOD (2003) were taken into account resulting in six parts of the Austrian NREP.

- Part 1: Accidents in Nuclear Power Plants outside of Austria
- Part 2: Satellite re-entry with radioactive inventory on board
- Part 3: Accidents in Austrian nuclear or radiological facilities
- Part 4: Accidents with (mobile) dangerous radiation sources
- Part 5: Radiological terror
- Part 6: Medical diagnosis and treatment after radiation accidents

In Part 1 of the NREP a systematic hazard assessment for potential NPP accidents covering all NPPs within a distance of 400 km to Austria was performed. Assuming different accident scenarios, including also severe accidents with releases in the order of Fukushima, the possible radiological impact to Austrian territory was analysed for different weather conditions. This systematic hazard assessment was also the basis for updating the planning of protective measures strategies in Austria after NPP accidents.

Similar approaches were used for assessing potential impacts of accidents in Austrian nuclear or radiological facilities (NREP Part 3), accidents with dangerous sources (NREP Part 4) and radiological terror (NREP Part 5). The hazard assessment for satellite re-entry was mainly based on internationally available literature. NREP Part 6 provides a framework how to proceed with heavily contaminated and/or overexposed persons in case of radiological emergencies.

C.2 OVERVIEW OF MAJOR NUCLEAR/RADIOLOGICAL FACILITIES AND ACTIVITIES

NUCLEAR POWER PLANTS

In the 1970s, a nuclear power plant was constructed in Zwentendorf, but as the consequence of the negative vote
in the referendum in 1978 was subsequently not put into operation. All nuclear fuel elements were removed in the late 1980s. Since 1999 a constitutional law has been prohibiting the construction and operation of installations for the production of energy by means of nuclear fission in Austria. The use of installations for research and development activities is compatible with this constitutional law.

**RESEARCH REACTORS**

Currently, Austria operates only one research reactor (TRIGA Mark II) at the Institute of Atomic and Subatomic Physics, which is administered by the Vienna University of Technology. It has a maximum steady state thermal output of 250 kW and pulsing capabilities. Spent nuclear fuel from the research reactor will be repatriated to the USA.

Two other research reactors (ASTRA research reactor at the Austrian Research Centre Seibersdorf and the ARGONAUT reactor at the Graz Reactor Institute) were shut down and decommissioned in the past. Spent fuel of both reactors was returned to the United States.

**CENTRAL AUSTRIAN WASTE TREATMENT AND INTERIM STORAGE FACILITY SEIBERSDORF**

Nuclear Engineering Seibersdorf GmbH is the only centralised waste management facility in Austria, where all low level and intermediate level radioactive waste (LILW) arising in Austria from hospitals, industry and research is currently treated and interim stored. High level radioactive waste does not arise in Austria.

**OTHER MAJOR RADIOLOGICAL FACILITIES**

- Nuclear Material Laboratory of IAEA, Seibersdorf
- MediScan GmbH, irradiation facility for sterilization, Seibersdorf
- Seibersdorf Laboratory, research laboratory, Seibersdorf

**HAZARD CATEGORIZATION OF MAJOR FACILITIES**

The typical hazard categories according to EPR-METHOD (2003) have been verified by scenario calculations in the frame of the hazard assessment.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Facility Type, EPR-METHOD (2003)</th>
<th>Typical Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRIGA Mark II research reactor at the Institute of Atomic and Subatomic Physics, Technical University of Vienna</td>
<td>research reactor with power level &lt; 2 MWth</td>
<td>III</td>
</tr>
<tr>
<td>Nuclear Engineering Seibersdorf (NES)</td>
<td>central treatment and interim storage facility for LILW</td>
<td>III</td>
</tr>
<tr>
<td>Nuclear Material Laboratory of IAEA, Seibersdorf</td>
<td>research laboratory without large quantities of fissile material</td>
<td>III</td>
</tr>
<tr>
<td>MediScan GmbH, Seibersdorf</td>
<td>irradiation facility for sterilization</td>
<td>III</td>
</tr>
<tr>
<td>Seibersdorf Laboratories, Seibersdorf</td>
<td>research laboratory without large quantities of fissile material</td>
<td>III</td>
</tr>
<tr>
<td>14 Austrian Hospitals</td>
<td>Teletherapy and gamma knives</td>
<td>III</td>
</tr>
</tbody>
</table>

According to the Austrian national registry of radiation sources about 1000 dangerous sources of IAEA category (1-4) are used in Austrian industry, research and medicine, including the radiation sources in the above mentioned facilities. Mobile sources used in Austria are typically of IAEA category 2-4.
C.3 EMERGENCY PREPAREDNESS CATEGORIES

Based on the national hazard assessment and the categorization in EPR-METHOD (2003) the following hazard categories were taken into account in the Austrian EPR:

- Austrian nuclear/radiological facilities (as described in C.2): hazard category III
- Mobile dangerous sources (as described in C.2), satellite re-entry with radioactive material on board: hazard category IV
- NPP in neighbouring countries: hazard category V, including the urgent protective actions sheltering and Thyroid Blocking
D. OVERVIEW OF PREPARDNESS ELEMENTS

D.1 LEGAL BACKGROUND

ON-SITE EPR

Article 5, 6, 7 and 10 of the Austrian Radiation Protection Act require that licensees prepare safety analyses and on-site emergency plans which are part of the licensing procedure for all practices. These articles also set forth requirements for alerting and notifying and taking mitigation measures by the licensee in case of an emergency.

In accordance with a graded approach more detailed requirements for on-site emergency plans, safety reports, emergency exercises and notification/alerting procedures for the research reactor of the Technical University of Vienna and the Central Austrian Waste Treatment and Interim Storage Facility Seibersdorf are part of the General Ordinance on Radiation Protection.

OFF-SITE EPR

Article 36l, 37 and 38 of the Radiation Protection Act set forth the general principles concerning interventions, radiation monitoring and counter measures to be taken in the case of a radiological emergency.

The detailed requirements are given in the Ordinance on Interventions in Case of Radiological Emergencies and in Case of Lasting Exposure which has been enacted in June 2007. Inter alia, regulations for the following areas of radiological emergency management are provided:

- main responsibilities and procedures in case of radiological or nuclear emergencies,
- definition of intervention levels and a checklist of protective measures to be taken into account in different phases of an emergency which provides the basis for a specific catalogue of protective measures in Austria,
- criteria for updating emergency plans at federal and at provincial levels,
- regulations for education, training, individual dosimetric monitoring and medical surveillance of intervention teams,
- criteria for planning and conducting emergency exercises,
- criteria for alerting and notifying radiological emergencies caused by events in Austria,
- information of the public in case or before an emergency,
- protection of emergency workers such as dose limits for interventions, medical and physical surveillance.
NEW COUNCIL DIRECTIVE 2013/59/EURATOM LAYING DOWN THE BASIC SAFETY STANDARDS

Within the next years Austria has to implement Council Directive No. 2013/59/EURATOM of 5 Dec. 2013 laying down the basic safety standards (EC BSS) into Austrian regulations. Subsequently for implementing the EC BSS chapter on emergency exposure situations the Austrian Radiation Protection Act and the Ordinance on Interventions in Case of Radiological Emergencies and in Case of Lasting Exposure will be adapted in some points and amended.

D.2 ROLE AND RESPONSIBILITY OF ORGANIZATIONS IN EPR

In accordance with the legislation, the responsibilities for off-site emergency management for events in Austria or abroad are summarised in the following table:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Responsibilities</th>
</tr>
</thead>
</table>
| **Federal Ministry of Agriculture and Forestry, Environment and Water Management** | • Evaluation of the consequences of radiological and nuclear emergencies  
• Decision on countermeasures (with involvement of the Federal Ministry of Health)  
• Environmental monitoring  
• Competent Authority for international information exchange (ECURIE, Convention on Early Notification and bilateral agreements) |
| **Federal Ministry of Health**                                             | • Food monitoring  
• Pre-distribution of KI Blocking                                               |
| **National Crisis and Disaster Protection Management at the Federal Ministry of the Interior** | • Federal co-ordinating institution for crisis management |
| **Federal Alarming Centre at the Federal Ministry of the Interior**         | • National information exchange centre  
• Contact Point for information exchange with foreign countries (ECURIE, Convention on Early Notification and bilateral agreements) |
| **Nine Austrian Federal Provinces**                                        | • Implementation of specific protective measures                                  |
The following regulatory authorities are responsible for supervising the on-site emergency management of the licensees:

<table>
<thead>
<tr>
<th>Licensee</th>
<th>Regulatory Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Ministry of Agriculture and Forestry, Environment and Water Management</td>
<td>• Regulatory Authority for the Central Austrian Waste Treatment and Interim Storage Facility Seibersdorf</td>
</tr>
<tr>
<td>Federal Ministry of Science, Research and Economy</td>
<td>• Regulatory Authority for the research reactor</td>
</tr>
<tr>
<td>Local authorities in the Austrian Federal Provinces</td>
<td>• Regulatory Authority for other practices</td>
</tr>
<tr>
<td>IAEA</td>
<td>• Regulatory Authority for the Nuclear Material Laboratory of IAEA, Seibersdorf</td>
</tr>
</tbody>
</table>

D.3 COORDINATION MECHANISMS

URGENT PHASE

In the urgent phase of a nuclear or radiological emergency the coordination between different responsible authorities in Austria (see D.2) is realized by well-established information pathways and an Internet based electronic situation reporting platform with restricted access for all responsible authorities.

In case of emergencies, media relevant events or exercises all relevant information on the event is electronically available on this information system. Keeping all involved organisations on the same information levels guarantees an effective coordinated emergency management.

LATER PHASES

Major disasters in Austria and abroad, such as the nuclear accident of Chernobyl in 1986 or the flood disaster in 2002, have shown that longer lasting large-scale events require a more comprehensive overall coordination beyond the limits of administration and competence.

Following a decision by the Council of Ministers in 2004, the "Federal Crisis and Disaster Protection Management (SKKM)" was reorganised. A new coordination committee, chaired by the Federal Ministry of the Interior with representatives of all Federal Ministries and Federal Provinces, emergency organisations and media are represented. It is the task of the SKKM to guarantee the quick coordination amongst the federal authorities as well as the coordination and cooperation with the Federal Provinces in the event of longer-lasting and complex crisis and disaster situations.

D.4 LOGISTICAL ARRANGEMENTS AND FACILITIES

Logistical arrangement and emergency facilities are part of the National Emergency Plans including:

- Communication tools and arrangements between the involved organizations in case of an emergency,
- Description of the ideal response to different types of emergencies based on the legally defined roles and responsibilities of response organizations and authorities,
- Overview on the main emergency tools such as international notification and alerting systems, prognosis and decision support system (e.g. RODOS, TAMOS, ESTE), the Austrian Radiation Early Warning System (with 330 automatic ambient dose rate measurement stations and 10
automatic air measurement stations) and the international and bilateral data exchange between emergency systems,

- Radiation monitoring and sampling arrangements by emergency “intervention” teams
- Sirens systems for alerting and warning the public,
- “Intervention” teams, their specific capabilities, tools and resources, communication and alerting arrangements (Intervention teams of the police, of the Austrian Agency of Health and Food Safety and from Nuclear Engineering Seibersdorf).

Similarly the Provincial Emergency Plans give an overview of the logistical arrangement and emergency facilities at provincial level.

D.5 EXISTING PLANS AND PROCEDURES

PLANS AT NATIONAL LEVEL:

The **Austrian National Radiation Emergency Plan** consists of six parts (“intervention plans at federal level”):

- National Emergency Plan for Accidents in NPP (Zwischenfälle in kerntechnischen Anlagen)
- National Emergency Plan for Satellite Re-entry with Radioactive Inventory (Absturz von Satelliten mit radioaktivem Inventar)
- National Emergency Plan for Radiological Terror (Radiologischer Terror)
- National Emergency Plan for Accidents with Dangerous Radiation Sources (Zwischenfälle mit gefährlichen Strahlenquellen)
- National Emergency Plan for Accidents in Austrian Facilities (Zwischenfälle in österreichischen Anlagen)
- National Emergency Plan for Medical Diagnostic and Treatment in Case of Radiation Accidents (Notfallplan Medizinische Diagnostik und Therapie)

An **Austrian Catalogue of Protective Measures** covering protective measures in the warning, contamination, intermediate and late phase was elaborated in 2011. The catalogue is the basis for planning of strategies and practical implementation of protective measures by different authorities. The Austrian Catalogue of Protective Measures is a living document which is regularly updated based on new international developments (such as HERCA) or new information from the involvement of stakeholders in Austria.

Two **plans for monitoring, sampling and laboratory measurements** in case of nuclear or radiological emergencies covering on the one hand large-scale contamination, as expected after an NPP accident in Europe and on the other hand small-scale radiological accidents such as transport accidents. These plans determine the main roles and responsibilities for monitoring, sampling and measuring in case of emergencies. They fix the number, type and regional distribution of samples (environmental media, feedstuff and food), the transport, measurement in the four Austrian laboratories and the distribution of the measurement results.

**Guideline for conducting emergency exercises** was elaborated by a working group under the Austrian Federal Crisis and Disaster Protection Management.

PLANS AT REGIONAL AND PROVINCIAL LEVELS

The emergency plans for nuclear and radiological emergencies of the 9 Austrian Federal Provinces have been also updated after the major update at national level. The majority of these plans have been finalized.

New is also a detailed guideline for sampling in case of nuclear and radiological emergencies at provincial level.
D.6 TRAINING, DRILLS AND EXERCISES

Key requirements for education and training of emergency workers are part of the Ordinance on Interventions. These include requirements on the content and scope of education and training in theoretical and practical areas for emergency workers in Austria. Emergency workers are also required to regularly participate in emergency exercises.

Requirements for conducting emergency exercises at federal and provincial level are also part of the Ordinance on Interventions.

A more detailed exercise plan is part of the Austrian National Radiation Emergency Plan listing the regular exercises with Austrian participation:

- **Exercises at international level**: ConvEx (IAEA), ECURIE Exercises (EC), INEX (NEA/OCD),
- **Exercises at bilateral or regional levels**: Exercises together with Austrian neighbouring countries such as Czech Republic, Switzerland, Hungary, Germany, Slovak Republic, Slovenia,
- **National exercises** such as the Austria-wide INTREX (Integrated Radiation Exercise),
- **Regional exercises** conducted by the Austrian Federal Provinces or by first responder organizations.

The bilateral exercises with neighbouring countries are very important for Austria and demonstrate the intense cooperation in the field of EPR.

In 2012 an Austrian-wide exercise INTREX 2012 was performed. The exercise scenario assumed a Fukushima-like severe NPP accident in a neighbouring country. Main parts of the new emergency plans were tested in these 3 days of exercise. Specific weak points were identified and measures for improving the emergency management system in Austria are under implementation (see also chapter H of this report).

Since 2012 a working group on emergency exercises with participation of all relevant authorities and emergency organisations has been established under the Austrian Federal Crisis and Disaster Protection Management. A guideline for conducting emergency exercises was elaborated by this working group. The working group also contributes to the preparation of national and regional exercises in Austria.

Requirements for exercises of the operators of major Austrian nuclear/radiological facilities are part of their on-site emergency plans.

D.7 QUALITY MANAGEMENT PROGRAMMES

The laboratories from the Austrian Agency of Health and Food Safety have their QM programme including regular inter-comparison measurements.

Concerning the overall EPR arrangements the main plans and documents have to be regularly reviewed and if necessary updated as required by the Ordinance on Interventions. In addition the EPR arrangements have to be tested by regular exercises.

Due to the implementation of the Nuclear Safety Directive (COUNCIL DIRECTIVE 2009/71/EURATOM of 25 June 2009 establishing a community framework for the nuclear safety of nuclear installations) into Austrian regulations Austria will invite and host an IRRS mission. A self-assessment before the IRRS mission has to be finalized in 2016 and the mission in Austria will be conducted in 2017.
E. OVERVIEW OF RESPONSE ELEMENTS

E.1 IDENTIFYING, NOTIFYING AND ACTIVATING

REQUIREMENTS FOR AUSTRIAN LICENSEES

The Austrian Radiation Protection Act requires that in case of an incident or emergency in a facility or during a practise the licensee has to notify immediately his/her regulatory authority of this event, take measures to mitigate the consequences and further on deliver specified information to the regulatory authority.

For the research reactor of the Technical University of Vienna and the Central Austrian Waste Treatment and Interim Storage Facility Seibersdorf detailed requirements for notification and alerting (criteria for alerting) are part of the General Ordinance on Radiation Protection.

The Ordinance on Interventions determines how and which information has to be provided to the federal level (to the Federal Ministry of Agriculture, Forestry, Environment, Water Management) in case of a nuclear and radiological emergency:

If a radiological emergency is caused by an event in Austria the responsible licensing authority has to provide the following information to the Federal Ministry of Agriculture, Forestry, Environment, Water Management:

- time and date of the event, reporting institution and person (to be provided immediately),
- information on the event: type of event, location, causes of the event, source term in case of a release, dose rate measurements in the vicinity of the source if there is no release (to be provided immediately),
- if possible meteorological on-site information and environmental monitoring data,
- measures mitigating the consequences of the accident.

This information is the basis for Austria and its national competent authority, the Ministry of Agriculture, Forestry, Environment and Water Management for fulfilling the international notifying and information requirements by the Convention on Early Notification in Case of a Nuclear Accident, Council Decision on Community Arrangements for early exchange of information in the event of a radiological emergency 87/600/EURATOM and due to bilateral agreements with neighbouring countries (see Annex 1).

In addition national competent authorities of neighbouring countries have access to the Austrian situation reporting system.

INTERNATIONAL REQUIREMENTS:

Based on these international notifying and information requirements Austria receives information in case of a nuclear/radiological accident or trans-boundary event in foreign countries. The procedure is similar to these procedure if the event occurs in Austria.
The following diagram summarizes the alerting procedures in Austria:

E.2 MITIGATION ACTIONS

According to the Austrian Radiation Protection Act on-site emergency plans are preconditions for the licensing of nuclear or radiological facilities and practices. The emergency plans contain all mitigation actions being planned by the operator for different initiating events identified in the safety analyses.

The Austrian Radiation Protection Act also determines the main responsibility of the licensee for alerting/notifying and taking mitigation measures in case of an emergency.

In accordance with a graded approach for the research reactor of the Technical University of Vienna and the Central Austrian Waste Treatment and Interim Storage Facility Seibersdorf detailed requirements for the content of on-site emergency plans including mitigation measures, safety reports, emergency exercises and notification and alerting procedures are part of the General Ordinance on Radiation Protection.

ZAMG: Austrian Central Institute for Meteorology and Geodynamics
E.3 PROTECTIVE AND OTHER RESPONSE ACTIONS

PROTECTIVE ACTIONS FOR THE PUBLIC
In addition to the Austrian National Radiation Emergency Plan a Catalogue of Protective Measures specifies all protective measures planned in case of a large-scale contamination in Austria after a nuclear accident. This catalogue is the basis for planning of strategies and practical implementation of protective measures by different authorities in the warning, contamination, intermediate and late phase.

Protective actions in case of other radiological emergencies such as accidents with dangerous radiation sources, are determined in the corresponding parts of the Austrian National Radiation Emergency Plan for these events.

PROTECTION OF EMERGENCY WORKERS
The Ordinance on Interventions contains requirements for the protection of emergency workers (“intervention personal”) and other persons implementing protective actions in the areas of:

- Education and training,
- Guidance values for restricting exposure of emergency workers and helpers (see chapter G.6 of this report),
- Personal protective equipment,
- Dose monitoring and medical surveillance.

The Austrian National Radiation Emergency Plan also documents the personal protective equipment and dose rate monitoring equipment of the Austrian intervention teams at federal level.

E.4 INFORMATION, INSTRUCTIONS AND WARNINGS TO THE PUBLIC

INFORMATION OF THE PUBLIC
The Council Directive 89/618/EURATOM on informing the public about health protection measures to be applied and taken in the event of a radiological emergency which is now integrated in the new EC BSS has been implemented in Austria by the Ordinance on Interventions. In accordance with 89/618/EURATOM the Federal Ministry of Agriculture, Forestry, Environment, Water Management has to provide prior information to the members of the public likely to be affected by an emergency and information in the event of an emergency.

PRIOR INFORMATION IS AVAILABLE AT

- the homepage of the Federal Ministry of Agriculture, Forestry, Environment, Water Management www.strahlenschutz.gv.at and a public leaflet on emergency management and planned protective actions in Austria,

- In addition the Federal Ministry of the Interior distributes a leaflet on radiation protection (www.bmi.gv.at/zivilschutz).
INFORMATION IN THE EVENT OF AN EMERGENCY

- Press releases (APA) and media inserts (TV and radio)
- Text templates focusing on protective actions to be taken in the event of an emergency
- Actual information and more detailed background information on the Internet (www.strahlenschutz.gv.at); a dark homepage is planned
- Online measurement results of the Austrian Early Radiation Warning system at the homepage of the Federal Ministry of Agriculture, Forestry, Environment, Water Management (www.strahlenschutz.gv.at) and Teletext (http://teletext.orf.at/)
- Austrian journalists are also integrated in the Federal Crisis and Disaster Protection Management
- The Federal Ministry of the Interior has a call centre which has been activated in the course of different disasters. The call centre was also activated and successfully operated during the Fukushima emergency

INSTRUCTIONS AND WARNING OF THE PUBLIC

An Austrian wide acoustic sirens system with about 8200 sirens established in the frame of civil protection by the Ministry of Interior will also be used for warning and alerting the Austrian population in case of a (potential) large-scale contamination. In the past the sirens system was activated in case of other large-scale disasters such as flooding. Once per year the system is tested by an Austrian wide activation.

After the population has been warned, people are expected to turn on TV and radio. In these media the detailed information on the event and protective measures will be provided based on prepared text templates.

E.5 MANAGING MEDICAL RESPONSE

Austrian National Radiation Emergency Plan Part 6 on medical diagnosis and treatment after radiation accidents provides a framework how to proceed with heavily contaminated and/or overexposed persons in case of radiological emergencies. It includes an overview on the infrastructure of Austrian hospitals and a strategy which hospital should be selected dependent on the severity of radiation damage.

In addition, if needed, Austria will use international assistance by RANET of the IAEA and by REMPAN network.

E.6 MITIGATING NON-RADIOLOGICAL CONSEQUENCES

Austria has a network of crisis intervention teams for professional psychological and social support for disaster victims. This network of organizations guarantees that enough personal is available in all Austrian Federal Provinces. According to the Austrian National Radiation Emergency Plan it is planned to use this network also in case of nuclear or radiological emergencies if the information of the public as described in chapter E4 is not sufficient.
E.7 MANAGING RADIOACTIVE WASTE

A Catalogue of Protective Measures includes all possible waste management options with their advantages and disadvantages.

This catalogue is currently updated taking into account international experiences and feedback from the involvement of Austrian stakeholders in the field of agriculture, food production and waste management.

In the updated Catalogue of Protective Measures which will be finished in the second half of 2014 in many areas the best options for protective measures and protective strategies will be identified. This is also the case for managing (radioactive) waste in case of emergencies with large-scale contamination in Austria. Solutions for treating and storing radioactive waste such as filters, sewage sludge are under way. As already mentioned the Catalogue of Protective Measures is a living document and will be also reviewed and updated periodically.

E.8 REQUESTING, PROVIDING AND RECEIVING INTERNATIONAL ASSISTANCE

As described in detail in chapter F of this report, Austria has ratified the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency and has registered national assistance capabilities to the IAEA Response Assistance Network (RANET) for practical implementation of the Assistance Convention.

More detailed procedures how to request and provide international assistance is part of the Austrian National Radiation Emergency Plan (NREP), Part 1: Accidents in nuclear power plants, including:

- the main responsibilities and roles in Austria (National Competent Authority: Federal Ministry of Agriculture, Forestry, Environment, Water Management and the Ministry of Interior responsible for international disaster relief),

- the alerting and information pathways in Austria when IAEA submits assistance request (distribution list and data base of all Austrian emergency organizations to be taken into account at the Federal Ministry of the Interior).

E.9 DECIDING ON THE TERMINATION OF AN EMERGENCY PHASE

A clear definition of criteria and responsibilities for the transition from an emergency to an existing exposure situation is required by the EC Basic Safety Standards and will be part of the changes of Austrian regulations to fully implement EC BSS.
F. THE EARLY NOTIFICATION AND ASSISTANCE CONVENTION

F.1 IMPLEMENTATION OF THE EARLY NOTIFICATION CONVENTION

In September 1986 Austria ratified the Convention on Early Notification of a Nuclear Accident and implemented it into Austrian regulations entering into force in 1988.

The exchange of information in case of a radiological or nuclear emergency with the competent authorities in the neighbouring countries is guaranteed by three information systems: Austria fulfils the obligations of the Convention on Early Notification of Nuclear Accidents (IAEA), is part of the ECURIE information system organised by the EC and has in addition bilateral agreements with the neighbouring countries.

The contact points for these information channels are the following:

- **Austrian Warning Point**: Federal Alarm Centre at the Austrian Federal Ministry of the Interior
- **Competent Authority (domestic and abroad) and INES office**: Division on Rad. Protection in the Austrian Ministry of Agriculture, Forestry, Environment and Water Management
- **Permanent Mission of Austria to the IAEA**: Austrian Ministry of Foreign Affairs

In addition, Austria plays an active role in the EPR activities of IAEA member states and regularly participates in international exercises, specifically in all ConvEx exercises.

F.2 IMPLEMENTATION OF THE ASSISTANCE CONVENTION

In September 1986 Austria ratified the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency and has implemented it into Austrian regulations entering into force in 1989.

Austria actively participates in the field of the Assistance Convention and also in disaster assistance organizations at EC level and UN level.

In 2010 Austria has registered national assistance capabilities to the IAEA Response Assistance Network system (RANET) for practical implementation of the Assistance Convention. The following areas are covered:

- Aerial survey
- Radiation monitoring
- Source search/recovery
The main responsibilities in Austria concerning RANET are:

- **Competent Authority for RANET**: Division on Rad. Protection at the Austrian Federal Ministry of Agriculture, Forestry, Environment, Water Management

- **Austrian Authority responsible for International Civil Protection and Disaster Relief**: Civil Defence, Crisis and Disaster Protection Management, Austrian Federal Ministry of the Interior

Austria also participates regularly in RANET exercises
G. GENERIC CRITERIA AND GUIDANCE VALUES FOR RESTRICTING EMERGENCY EXPOSURE

G.1 CRITERIA FOR PROTECTIVE ACTIONS AND OTHER RESPONSE ACTIONS

The following criteria ("intervention levels") for implementing protective actions to reasonably reduce the risk of stochastic effects are determined by the Ordinance on Interventions:

<table>
<thead>
<tr>
<th>Protective measures</th>
<th>Population group</th>
<th>Intervention level</th>
<th>Dose type</th>
<th>Pathways</th>
<th>Integration period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheltering</td>
<td>persons &lt; 18 years, pregnant</td>
<td>1 mSv</td>
<td>projected effective dose</td>
<td>cloud shine</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ground shine</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>inhalation</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td></td>
<td>adults</td>
<td>10 mSv</td>
<td>projected effective dose</td>
<td>cloud shine</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ground shine</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>inhalation</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td>Th却oid Blocking by KI-tablets</td>
<td>persons &lt; 18 years</td>
<td>10 mGy</td>
<td>projected Thyroid dose</td>
<td>inhalation</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td></td>
<td>adults &lt; 40 years, pregnant, breast-feeding</td>
<td>100 mGy</td>
<td>projected Thyroid dose</td>
<td>inhalation</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td></td>
<td>adults &gt; 40 years</td>
<td>500 mGy</td>
<td>projected Thyroid dose</td>
<td>inhalation</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td>Evacuation</td>
<td>all</td>
<td>50 mSv</td>
<td>avoidable effective dose</td>
<td>cloud shine</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ground shine</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>inhalation</td>
<td>cloud passage, max. 7 days</td>
</tr>
<tr>
<td>Temporary Relocation</td>
<td>all</td>
<td>30 mSv</td>
<td>projected effective dose</td>
<td>ground shine</td>
<td>1 month</td>
</tr>
<tr>
<td>Permanent Relocation</td>
<td>all</td>
<td>100 mSv</td>
<td>projected effective dose</td>
<td>ground shine</td>
<td>1 year</td>
</tr>
</tbody>
</table>
In addition justification and optimization for implementing protective actions in emergency exposure situations are required by the Ordinance on Interventions.

Protection strategies for events with potential large-scale contamination are part of the Austrian catalogue of protective measures. Reference levels for these protection strategies are required by the Council Directive No. 2013/59/EURATOM of 5 Dec. 2013 laying down the basic safety standards (EC BSS) and will be part of the changes of Austrian regulations to fully implement EC BSS.

G.2 CRITERIA FOR RESTRICTIONS ON TRADE

Concerning food- and feedstuff the maximum concentration levels of the EURATOM Regulations (Council Regulation EURATOM No. 3954/87, Council Regulation EURATOM No. 2218/89, Commission Regulation EURATOM No. 770/90, which are currently integrated and updated) will become applicable to Austria in case of an emergency. Import and export of food- and feedstuff will be based on these EURATOM Regulations of the European Community.

After the NPP accident in Fukushima Daiichi the need for criteria for restricting import of contaminated goods other than food- and feedstuff has been identified by many countries. As other countries Austria will implement future international guidance values for contaminated goods.

G.3 TRANSITION FROM EMERGENCY TO EXISTING EXPOSURE SITUATION

Clear definition of criteria and responsibilities for the transition from an emergency to an existing exposure situation is required by the EC Basic Safety Standards and will be part of the changes of Austrian regulations to fully implement EC BSS.

G.4 OPERATIONAL CRITERIA

Definition of Operational Intervention Levels and other operational criteria is required by the EC BSS and will be part of the changes of Austrian regulations to fully implement EC BSS.

G.5 GUIDANCE VALUES FOR RESTRICITNG EXPOSURE OF EMERGENCY WORKERS AND HELPERS

According to the Ordinance on Interventions the responsible authority has to decide which persons are chosen to implement protective actions or other response actions if in this specific emergency exposure situation 1 mSv effective dose could be exceeded. Which persons are selected during different emergency exposure situations is determined in the emergency plans at federal and provincial level. The following guidance values have to be taken into account:
Guidance values for restricting exposure of emergency workers ("intervention personal") during an emergency exposure situation

<table>
<thead>
<tr>
<th>Actions</th>
<th>Guidance value for the effective dose (all pathways)</th>
</tr>
</thead>
<tbody>
<tr>
<td>to protect material assets</td>
<td>20 mSv</td>
</tr>
<tr>
<td>to prevent severe radiation-induced health effects, or prevent the development of catastrophic conditions</td>
<td>100 mSv</td>
</tr>
<tr>
<td>to save life</td>
<td>250 mSv</td>
</tr>
</tbody>
</table>

In addition a guidance value for limiting the exposure in emergency exposure situations during the whole life is 250 mSv.

For other persons ("Voluntary Helpers") who are not emergency workers but are implementing protective actions or other response actions the guidance value for the maximum effective dose is 20 mSv.
H. CHALLENGES IN EPR

The following challenges in the field of EPR were identified by the Austrian National Competent Authority:

- A further harmonization in EPR is needed. Different protective actions and information of the public in neighbouring countries have to be avoided. Therefore Austrian representatives actively participate in international working groups such as HERCA WGE to improve the situation. International standards in specific areas e.g. contamination levels for import of goods other than food- and feedstuff also identified during Fukushima would be highly appreciated.

- The implementation of the new European Basic Safety Standards and the new international standards in the field of EPR, such as the updated GS-R-2 of IAEA, within the next years will need additional efforts.

- During the Fukushima emergency it became clear that information of/communication with the public is one of the most important arrangements in EPR in Austria, even if Austria is not directly affected. In addition to the already implemented information arrangements it is planned to elaborate a more comprehensive communication plan with the media and the public.

- Also based on the Fukushima experience are the last two challenges:
  - Improving personal resources of EPR organisations for long lasting nuclear/radiological emergencies. The support of TSOs is currently extended.
  - Extension of international cooperation in radiological assessment and evaluation of impacts in case of remote field accidents outside of Europe. Austrian emergency tools and systems are mainly focused on Europe.
I. REFERENCES

The following documents are available in German language:

REGULATIONS:
- Austrian Radiation Protection Act (“Strahlenschutzgesetz”), last amendment 2013
- Ordinance on Interventions in Case of Radiological Emergencies and in Case of Lasting Exposure (“Interventionsverordnung”), June 2007
- General Ordinance on Radiation Protection (“Allgemeine Strahlenschutzverordnung”), 2014
  [link]

PLANS AND PROCEDURES:
- Austrian National Radiation Emergency Plan (NREP) for Accidents in NPP (Gesamtstaatlicher Interventionsplan: Zwischenfälle in kerntechnischen Anlagen)
- NREP for Satellite Re-entry with Radioactive Inventory (Gesamtstaatlicher Interventionsplan: Absturz von Satelliten mit radioaktivem Inventar)
- NREP for Radiological Terror (Gesamtstaatlicher Interventionsplan: Radiologischer Terror)
- NREP for Accidents with Dangerous Radiation Sources (Gesamtstaatlicher Interventionsplan: Zwischenfälle mit gefährlichen Strahlenquellen)
- NREP for Accidents in Austrian Facilities (Gesamtstaatlicher Interventionsplan: Zwischenfälle in österreichischen Anlagen)
- NREP for Medical Diagnostic and Treatment in Case of Radiation Accidents (Gesamtstaatlicher Interventionsplan: Notfallplan Medizinische Diagnostik und Therapie)
- Plan for monitoring, sampling and laboratory measurements in case of a large-scale contamination (as expected after an NPP accident in Europe)
- Plan for monitoring and sampling in case of a radiological small scale emergency
  [link]
- Guideline for conducting emergency exercises, elaborated by a working group under the Austrian Federal Crisis and Disaster Protection Management
  [link]

INFORMATION OF THE PUBLIC:
- Homepage of the Federal Ministry of Agriculture, Forestry, Environment, Water Management and a public leaflet on emergency management in Austria [link]
- Leaflet on radiation protection [link]
- Information on Thyroid Blocking by KI tablets at the homepage of the Austrian Federal Ministry of Health: [link]
J. ANNEXES

ANNEX 1: BILATERAL AGREEMENTS IN THE FIELD OF NUCLEAR SAFETY AND RADIATION PROTECTION

BELARUS
Agreement on an exchange of information in the field of nuclear safety and radiation protection

CZECH REPUBLIC
Agreement on mutual assistance in the event of disasters or serious accidents

GERMANY
Agreement on an exchange of information and experience in the field of radiation protection
Agreement on mutual assistance in the event of disasters or serious accidents

HUNGARY
Agreement on the settlement of questions of mutual interest in connection with nuclear installations
Agreement on mutual assistance in the event of disasters or serious accidents
LIECHTENSTEIN
Agreement on mutual assistance in the event of disasters or serious accidents

POLAND
Agreement on an exchange of information and cooperation in the field of nuclear safety and radiation protection

RUSSIA
Agreement between Austria and the former USSR concerning early notification and information in the case of nuclear accidents and the exchange of information related to nuclear installations

SLOVAKIA
Agreement between Austria and Slovakia concerning questions of mutual interest in connection with nuclear safety and radiation protection

Agreement on cooperation and mutual assistance in the event of disasters

SLOVENIA
Agreement on an early exchange of information in the case of radiological dangers and on questions of mutual interest in the field of nuclear safety and radiation protection

Agreement on cooperation in the field of prevention and mutual assistance in the event of disasters or serious accidents

SWITZERLAND
Agreement on an exchange of information in the field of nuclear safety and radiation protection
Agreement on mutual assistance in the event of disasters or serious accidents

TAJIKISTAN
Agreement between Austria and the former USSR concerning early notification and information in the case of nuclear accidents and exchange of information related to nuclear installations (used with Tajikistan)

UKRAINA
Agreement on an exchange of information and cooperation in the field of nuclear safety and radiation protection
**ANNEX 2: MULTILATERAL AGREEMENTS IN THE FIELDS OF NUCLEAR SAFETY AND RADIATION PROTECTION**

**UN / IAEA**

**Convention on Early Notification of a Nuclear Accident**


**Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency**


**Convention on Nuclear Safety**


**Convention on the Physical Protection of Nuclear Material**


**UN / ECE**

**Convention on Environmental Impact Assessment in a Transboundary Context**


**Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context**


**Convention on the Protection and Use of Transboundary Watercourses and International Lakes**


**Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention)**


**DANUBE RIVER PROTECTION CONVENTION**

**Convention on Cooperation for the Protection and Sustainable Use of the Danube River**

(Übereinkommen über die Zusammenarbeit zum Schutz und zur verträglichen Nutzung der Donau)

**C.E.I. CONVENTION**

Cooperation Agreement on the Forecast, Prevention and Mitigation of Natural and Technological Disasters among the Government of the Republic of Austria, the Government of the Republic of Croatia, the Government
of the Republic of Hungary, the Government of the Republic of Italy, the Government of the Republic of Poland, and the Government of the Republic of Slovenia
