ENVIRONMENTAL REPORT
NON-TECHNICAL SUMMARY
NATIONAL RADIOACTIVE WASTE MANAGEMENT PROGRAMME
IN ACCORDANCE WITH ART. 36b RADIATION PROTECTION ACT

BUNDESMINISTERIUM
FÜR NACHHALTIGKEIT
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LEGAL INFORMATION

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INTRODUCTION

THE RADIATION PROTECTION ACT and European specifications stipulate that the radioactive waste generated in Austria must be managed responsibly and safely. A "National Radioactive Waste Management Programme" to be created by the Federal government provides the basis for these regulations and describes all the waste management steps. The Federal Ministry for Sustainability and Tourism (BMNT) has a coordinating role in creating this programme.

In accordance with Art. 36b of the Radiation Protection Act, a Strategic Environmental Assessment with public participation according to the specifications of the European SEA Directive is to be performed for this National Radioactive Waste Management Programme.

The aim of the Strategic Environmental Assessment (SEA) is to incorporate environmental considerations when developing the National Radioactive Waste Management Programme and to identify significant impact on the environment at an early stage in order to prevent them.

1 NON-TECHNICAL SUMMARY

THIS SECTION includes the information that must be presented in accordance with ANNEX 1, lit. j) of the SEA Directive (Directive 2001/42/EC). The summary is focused on the core content of the environmental report.

Radioactive waste generated in Austria is limited to the low- and intermediate-level categories. The existing and future radioactive waste in Austria arises from two waste streams: waste from medicine, industry and research, and waste from decontamination and dismantling facilities (decommissioning). The amount of waste generated is low compared to that produced by countries which use nuclear power plants for energy production. As no nuclear power plants are operated in Austria, there is no generation of high level radioactive waste, or spent nuclear fuel for management or disposal within the country.

The collected and conditioned radioactive waste in Austria to date is located in interim storage at NES (Nuclear Engineering Seibersdorf), which currently contains about 11,200 waste containers (200-litre drums). At NES, radioactive waste is converted into a stable and safe form utilising state-of-the-art processing methods, which are also focussed on ensuring optimised volume reduction. Interim storage at NES is contractually secured until 2045.

The entire radioactive waste inventory, which is currently stored at NES, will, finally, need to be disposed of. A decision on the location and type of the required repositories has not yet been made in Austria – as in many other countries around the world. As experience in other countries shows, decisions about the final disposal of radioactive waste are not reached quickly.

In view of the comparatively low amount of waste (around 3,600 m³ of short-lived waste and a maximum of 60 m³ of long-lived waste) and the low risk potential (exclusively low and intermediate level radioactive waste), the current storage of radioactive waste in the interim storage facility at NES is a good starting point to find an optimal and accepted solution for the final disposal for Austria.

To promote the process of decision making for the safe waste management, the Austrian Federal Government is going to set up a “Disposal” task force, which regularly reports to the federal government on its activities and presents results and suggestions for further decision-making.

According to the present state of the art, various types of facility can be used as repositories which are suitable for different types of waste. The applicability of possible types of facilities for the waste management of future and current radioactive waste generated in Austria in a repository was analysed in the National Radioactive Waste Management Programme[1], taking into account the special characteristics of Austria. The possible environmental impacts of these types of facilities are addressed in the Strategic Environmental Assessment.

Collaboration at a European or international level should be sought to prepare for future waste management. The possibility of cooperation is explicitly provided for in Art. 36b of the Radiation Protection Act. In the case of countries such as Austria, which do not use nuclear power for energy production and therefore have less infrastructure in this field and lack the financial resources of nuclear power plant operators, such cooperation can be of huge benefit. Collaboration therefore not only offers foreseeable financial advantages, it can also help to find the best possible safe solution more quickly.

[1] See: BMNT (Federal Ministry for Sustainability and Toursim) (2018): Draft National Radioactive Waste Management Programme according to Art. 36b of the Radiation Protection Act, Annex II

1.1 ENVIRONMENTAL OBJECTIVES

The National Radioactive Waste Management Programme (NRWMP) outlines the implementation of a national strategy for a responsible and safe management of radioactive waste and, in particular, sets the following environmental objectives:

- The responsible and safe management of the radioactive waste generated in Austria
- To limit radioactive waste to the reasonably achievable minimum extent in terms of activity and volume
- To protect the life and health of humans including that of their offspring from harm caused by ionising radiation

Additionally, environmental objectives that are based on the protected goods and protected interests according to the SEA Directive were defined as part of a scoping process. The environmental objectives take into account national and international legislation. The protected goods considered in the SEA are soil and landscape, water, air, animals, plants, habitats, biodiversity and humans. The possible types of disposal facilities for radioactive waste will be assessed with regard to the above-specified protected goods.

For humans, the protection of their life and health including that of their offspring from harm caused by ionising radiation in conjunction with the NRWMP is an absolute focus and therefore the most important environmental objective. A meaningful indicator is exposure to radiation (incl. food chain).

A key environmental objective for the protected goods of soil and landscape is the qualitative and quantitative protection and conservation of a location-typical soil condition and conservation of landscape features. The proportion of areas that have lost their natural soil functions/soil consumption/land consumption was selected as meaningful indicator to illustrate the environmental status of the protected good soil.

A major environmental objective for the protected good water is the protection, conservation and improvement, where appropriate, of water quantity and quality to sustainably safeguard the water supply and water-dependent ecosystems. The quality of groundwater and surface water was selected as meaningful indicator to illustrate the environmental status of the protected good water.

A major environmental objective for the protected good air is the preservation of the statutory limits and targets to protect ecosystems, human health and vegetation. Air quality was selected as meaningful indicator to illustrate the environmental status of the protected good air.

A key environmental objective is the protection, preservation and re-establishment of native flora and fauna and their habitats. The meaningful indicator animal species as indicators of habitat quality was selected to illustrate the state of the environment of the protected good animals, plants, habitats and biodiversity.

1.2 SCOPE OF THE ASSESSMENT

Within the scope and taking into account statements from environmental bodies[2], the spatial, temporal and factual assessment framework was defined[3].

[2] Authorities that may be affected in their environmental remit by the environmental impact caused by implementing the plan or programme
[3] BMLFUW (2017): Scope as part of the Strategic Environmental Assessment in accordance with Directive 2001/42/EC of the National Radioactive Waste Management Programme in accordance with Art. 36b of the Radiation Protection Act

The assessment framework of the Strategic Environmental Assessment (SEA) for this NRWMP is fundamentally defined by the national even if the development of future disposal should seek cooperation at European or international level. The defined period of the assessments for the environmental report is assumed to be until 2045 – based on the contractually secured interim storage of radioactive waste at NES. The factual system definition is determined by the likely significant environmental impact on relevant protected goods of the possible types of facility for the disposal of radioactive waste.

1.3 CURRENT ENVIRONMENTAL STATUS AND RELEVANT ENVIRONMENTAL PROBLEMS

For each of the relevant protected goods and based on available data, the current environmental status is shown by means of indicators[4]. It cannot be part of the remit of this environmental report to give an independent and complete overview of the environmental status of the whole country. We therefore refer to the findings of the Eleventh State of the Environment Report (Environment Agency Austria, 2016). These are summarised in the following for the respective protected goods.

1.3.1 SOIL AND LANDSCAPE

Soil as a production factor is the basis for producing food and feed as well as biomass. Furthermore, it is an important carbon and water store. Due to biogeographic and topographic factors, arable soil in Austria is a scarce resource. By increasing the amount of land used for housing and transportation, arable land in particular used for agriculture will be continually reduced. Land consumption in Austria at an average of 14.7 ha/day between 2014 and 2016 is lower than in previous years.

1.3.2 WATER

There has been a decrease in nitrate levels in groundwater since 1997. Throughout Austria the chemical status of the ground water can be described as good, the exception being a few regional problems from nitrate and pesticide entry (Environment Agency Austria, 2016).

1.3.3 AIR

In recent decades, the air quality has improved as a result of measures taken in Austria and Europe. The primary concerns in terms of health are fine particulates (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2) and ozone (O_3). PM_{10} pollution in Austria shows a decreasing trend in general, however this varies greatly from year to year. The development of PM_{10} pollution over time is not only determined by Austrian PM_{10} emissions (Environment Agency Austria, 2017b) and the (likewise decreasing) emissions of the precursors of secondary particles (esp. SO_2, NO_x, NH_3), it is also determined by meteorological conditions and the emissions of neighbouring countries.

1.3.4 ANIMALS, PLANTS, HABITATS, BIODIVERSITY

As a result of its climatic and biogeographic conditions, Austria is home to a rich biodiversity and compared with other central European countries, it is one of the most species-rich countries. The assessment of the level of danger to animal and plant species in the Red Lists reveals that about a third of the assessed animal species is considered to be endangered. Assessment in accordance with the EU nature conservation directive deems 16 % of species and 14 % of habitats to be in a favourable conservation status. The conservation status is better in alpine regions than in continental regions (Environment Agency Austria, 2016).

[4] See table 4 in Section 6

1.3.5 HUMANS

In addition to the natural radiation exposure of humans/public, radiation is also caused by man-made radioactive substances reaching the environment, for example by the atmospheric atomic bomb tests in the 1950s/60s and the Chernobyl reactor accident in 1986. The Chernobyl reactor accident in 1986 caused a significant increase in the local gamma dose rate, which could be identified along with the subsequent decline in levels. From 1990, the local gamma dose rate had returned to the same range as before the reactor accident (BMLFUW, 2016). The core meltdowns in the Fukushima nuclear reactors in 2011 have contributed virtually nothing to the exposure to radiation in Austria as a result of the great distance between Austria and the country of accident.

1.4 ASSESSMENT OF ALTERNATIVES: TYPES OF FACILITIES AND THEORETICAL ZERO ALTERNATIVES

The NRWMP presents the possible types of facilites for the final disposal of Austrian radioactive waste according to the current state of the art. The application of possible disposal facility types was analysed taking into account the special features of Austrian radioactive waste and referencing the IAEA publication NW-G-1.1 *"Policies and Strategies for Radioactive Waste Management"*[5] . This NRWMP does not contain any information on future individual or multiple sites for the final disposal of Austrian radioactive waste.

Therefore, a comparison of different site alternatives is not included in this environmental report. A specific site search should be supported by a Strategic Environmental Assessment and transparent public participation. The environmentally relevant advantages and disadvantages should be clearly taken into account comprehensibly when making the decision for one or more sites.

It is possible that further treatment or waste management options (types of facility) may be available in the future. For this reason, the decision-making process also will include a scientific analysis of the treatment and waste management methods, including the results of international research and development activities.

1.4.1 TYPES OF FACILITIES

Since Austria does not have to dispose of highly radioactive waste or spent fuel, the technical disposal requirements for Austrian radioactive waste are significantly lower than in countries with nuclear power plants.

Estimation of the amount and type of future radioactive waste is, of course, subject to uncertainties, since future developments, new applications of radioactive substances or the replacement of existing applications cannot be conclusively foreseen.

From today's view, the amount of waste to be managed in 2045 is estimated to be approx. 3,600 m^3 short-lived (LILW-SL) and a maximum of 60 m^3 long-lived waste (LILW-LL).

[5] BMNT (Federal Ministry for Sustainability and Tourism) (2018): Draft National Radioactive Waste Management Programme according to Art. 36b of the Radiation Protection Act, Annex II

The characterisation and classification of radioactive waste at NES is based on the recommendation of the EU Commission.[6]

- **LILW-SL**: Low and Intermediate Level Waste - Short Lived; low- and intermediate-level waste with radionuclides with half lives of approx. 30 years maximum;

- **LILW-LL**: Low and Intermediate Level Waste - Long Lived; low- and intermediate-level waste that contains long-lived radionuclides

In the interim storage facility at NES (transfer storage), the following inventory of conditioned radioactive waste is stored as of December 31, 2016:

- LILW-SL: approx. 2,240 m³ with an activity of approx. $9.95 \cdot 10^{15}$ Bq

- LILW-LL: approx. 60 m³ with an activity of approx. $4.57 \cdot 10^{12}$ Bq

According to the present state of the art, various types of repositories are used, which are suitable for different types of waste.

Disposal in a **trench-type repository** is comparable in principle to the disposal of conventional waste in a conventional landfill site. The waste is disposed of in a trench and covered with soil. No additional safety surveillance or radiation monitoring is required due to the low level of radioactivity.

An **engineered near-surface facility** is a system of technically designed trenches or concrete vaults, into which the waste is placed. An engineered cap that minimizes the penetration of surface water is placed over the waste containers. The facility is built on the ground surface or up to several metres below the surface. It is subject to surveillance and radiation monitoring until the waste has lost its hazardous potential.

A **borehole disposal facility** consists of one or more boreholes with a depth of several tens to a few hundred metres. Borehole facilities are suitable for disposing of low volumes of long-lived waste.

An **intermediate depth disposal facility** consists of caves, vaults or silos, which are usually a few tens of metres to a few hundred metres below the surface. Such a facility can also be established by digging an adit into a mountain, where the smallest distance from the surface must be more than 100 m.

Deep geological repositories are set up several hundreds of metres below the surface, generally in the form of tunnels, vaults or silos.

According to the current state of the art, the following disposal facilities are under discussion for the final disposal of Austrian radioactive waste in the NRWMP[7].

Table 1 summarises an analysis of the applicability of possible types of facility for the waste categories of radioactive waste generated in Austria based on the IAEA publication NW-G-1.1 *"Policies and Strategies for Radioactive Waste Management"*.

[6] Commission Recommendation of 15 September 1999 on a classification system for solid radioactive waste 1999/669/EC, Euratom
[7] See: BMNT (Federal Ministry for Sustainability and Tourism) (2018): Draft National Radioactive Waste Management Programme according to Art. 36b of the Radiation Protection Act, Annex II

TABLE 1: SUMMARY OF THE POSSIBLE TYPES OF FACILITIES FOR AUSTRIAN RADIOACTIVE WASTE

Type of waste	Characteristic of waste	End point				
		Trench type	Engineered near-surface facility	Borehole facility	Intermediate depth facility	Deep geological repository
LILW-SL with very low activity/LILW-LL with very low activity		++	NR	NT	NR	NR
LILW-SL		+	++	NT	NR	NR
LILW-LL		N	N	+	++	++
Used sealed radioactive sources	Short-lived nuclides	+	++	NR	NR	NR
	Long-lived nuclides	N	NR	++	++	++
	High activity radiation sources	N	N	++	++	++

Key:

		N	not possible for safety reasons
+	acceptable solution	NT	not possible for technical reasons
++	preferred solution	NR	possible but not recommended for technical or economic reasons

1.4.2 THEORETICAL ZERO ALTERNATIVES

As a result of the specifications of the Radiation Protection Act it is legally impossible to not implement the NRWMP. A zero alternative can therefore only present a theoretical frame of reference to evaluate the environmental impact of the considered alternatives. A theoretical zero alternative is assumed to be an indefinite storage of radioactive waste (beyond 2045) at Nuclear Engineering Seibersdorf, without further modernisation to the facilities or further treatment of the stored waste.

The current interim storage at NES conforms to the latest safety requirements and has a quality management system that also integrates environmental and health protection aspects. However, from an environmental perspective, this (theoretical) zero alternative would be the worst option. Both the buildings and facilities of NES and the waste drums used at present are not designed for indefinite storage and for this reason could cause a local negative impact at a later date on the protected goods of water and air. There is also a continuous comparatively higher risk of an incident or additional radiation exposure to humans as a result of the ageing of parts of the facility or waste drums than for a repository. However, no impact on the soil or landscape (land consumption) or on animals, plants, habitats or biodiversity is expected.

1.5 DESCRIPTION AND EVALUATION OF THE LIKELY SIGNIFICANT ENVIRONMENTAL IMPACT OF THE TYPES OF FACILITIES

A detailed assessment of the impact on the SEA-protected goods primarily depends on the site selection and the size of the facility. The various possible environmental impacts naturally depend on the type of facility and also the location of the final repository/repositories. As the NRWMP does not include any sites, only the

likely significant environmental impact of the possible types of facility can be assessed in the construction and operating phase until closure, and impacts that are associated with transporting the radioactive waste from the interim storage site to the repository.

The period following closure is no part of the assessment in this environmental report. In principle, an environmental monitoring programme is provided after closing a facility. Depending on the type of facility, relevant safety and radiation monitoring and monitoring of the environmental impact shall be provided. The monitoring programme must comply with international standards (IAEA 2014b). In any case specific parameters must be monitored that demonstrate the status of the protected goods (e.g. groundwater, hydrology, geology, seismology, air, soil). The specifications of the IAEA Safety Standards provide guidance (see Table I-1, p. 51ff)[8].

In the event of a key future amendment to the waste management programme (for example for a site search), a supporting Strategic Environmental Assessment shall always be conducted. If the site/sites and type of facility are certain, it shall in any event be ensured as part of an environmental impact assessment (EIA) that there is no significant environmental impact for setting up and operating this type of facility.

An assessment of the possible positive or negative impact of the implementation of the NRWMP on the affected protected goods is conducted gradually based on

- an illustration and assessment of the current environmental status,
- its likely development if the programme is theoretically not implemented (indefinite interim storage at NES) and based on this,
- the assessment of the environmental consequences of SEA-relevant types of disposal facilities

1.5.1 CONSTRUCTION PHASE

Setting up waste management facilities involves a primarily local and temporary impact caused by construction work on site and the construction site traffic on access roads in the vicinity of the facility. Local noise and dust pollution needs to be considered as well as vibrations caused by construction work and conventional waste and residue (incl. excavation material). Depending on the site and type of facility (especially for borehole facilities, intermediate depth facilities and deep geological facilities), a possible impact on deep rock strata, tectonics and groundwater aquifers cannot be excluded. Depending on the design of the facility (construction directly at the surface or several hundred metres below the surface) and duration of the construction phase, it is not possible to exclude any impact as a result of land consumption during construction and operation on animals, plants and their habitats, on biodiversity and change in the landscape. Neither is it possible to exclude any impact as a result of accidents involving construction machinery and vehicles on the groundwater or entry into receiving water. Depending on the depth of the facility, groundwater could be adversely affected by excavation work. These impacts are comparable to other construction sites of the same scale and have only very local impacts.

1.5.2 OPERATING PHASE AND CLOSING

During the operating phase the facility is filled with radioactive waste. The facilities must conform to the highest safety requirements to prevent radioactive substances escaping into the biosphere. The duration of the operating phase depends on the quantity of radioactive waste introduced. It is not possible to exclude any

[8] IAEA: Safety Standards – Monitoring an Surveillance of Radioactive Waste Disposal Facilities Link

local impact on deep rock strata, tectonics and groundwater aquifers during the operating phase of deep facilities.

Despite the most rigorous safety precautions it is not possible to entirely exclude accidents when dealing with radioactive waste during the operating phase. Based on the assumption made in the Austrian National Radiation Emergency Plan[9] for NES, the worst-case accident scenario for all the types of facilities would be a major passenger aircraft crash with subsequent kerosene fire. If you compare the worst-case scenarios for the various facilities with that for NES, you can assume a lower radiological impact and exposure on a smaller scale for all cases, as each scenario relates to a lower quantity of radioactive waste than in the NES storage.

Once the facility is completely filled it is closed and the surface is sealed. For intermediate depth facilities, borehole facilities or deep geological facilities, no subsequent effects on the surface can be identified and therefore there should not be any or very little permanent land consumption (receiving warehouse or office building). For facilities at or near the surface it is assumed that the surface will be recultivated. The operation of near-surface facilities necessitates long-term local land consumption, sealing and changes to the terrain. It is not possible to exclude any local impact on animals, plants, habitats, biodiversity and groundwater and changes to the landscape.

1.5.3 TRANSPORT

The local noise and dust pollution caused by transporting the radioactive waste from the Seibersdorf site needs to be considered. In the event of a transport incident, only minor radiological impact and small-scale pollution in the vicinity of the accident site can be assumed as this only relates to a small quantity of radioactive waste.

1.6 MEASURES AND MONITORING

The prevention and minimisation of radioactive waste is considered a basic principle when dealing with radioactive substances and the management of radioactive waste. Radioactive waste must be isolated from humans and the environment also in the long-term (safe disposal). In this respect, aspects of passive safety must also be taken into account for the long-term. The safety measures for a facility or an activity related to radioactive waste management are determined in a graded approach according to the risk.

Monitoring- measures

A possible impact of the programme on the environment should be monitored to detect unforeseeable negative effects at an early stage and to be able to take suitable corrective measures. Existing monitoring mechanisms are used if appropriate.

Environmental monitoring programme

Monitoring must comply with international standards (IAEA, 2014b) and fundamentally depends on the hazard potential of the radioactive waste in conjunction with the type of repository over time. Besides this, in any case specific parameters must be monitored that demonstrate the condition of the protected goods (e.g. groundwater, hydrology, geology, seismology, air, soil).

[9] Austrian National Radiation Emergency Plan -Link

Soil and Landscape

Land consumption or soil sealing in Austria will be recorded by the Federal Office of Metrology and Surveying from the regional information of the land-register database and will be processed and published by the Environment Agency Austria.

Water

Programmes to monitor the condition of water bodies are specified by the Federal Water Act (WRG) 1969 as amended and implemented nationally according to common standards based on the Water Condition Monitoring Regulation (GZÜV) Federal Law Gazette 479/2006. A concept for long-term water monitoring (especially groundwater) should be created for the repository site(s).

Air

The protected good air is monitored on an on-going basis as part of the implementation of the Immission Control Act - Air (IG-L)[10] and the Ozone Act[11] or the regulation on measurement concepts[12] for the IG-L and the Ozone Act[13] and the air pollutants specified in the Ozone Act.

Animals, plants, habitats and biodiversity

In accordance with the Habitats Directive[14], every six years a report is submitted to the European Commission with information on the conservation measures and conservation status of the habitats of Annex I and of the species of Annex II as well as the key monitoring results. In accordance with the Birds Directive[15], a report is submitted to the European Commission every six years on the defined conservation measures and the assessment of the current status and the calculated trend of the protected goods.

Humans

In Austria, there is a nationwide automatic radiation early warning system of currently more than 300 local dose rate measuring points and 10 air monitors to record the activity concentration in ground-level air. The measurements of the radiation early warning system are available online in the alarm centres of the BMNT, of the Federal Ministry of the Interior (BMI) and of the federal states. Approximately 100 local dose rate measuring points are available online to the public as a representative cross-section.[16]

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[10] Immission Control Act - Air (IG-L; Federal Law Gazette I 115/1997 as amended): Austrian Federal Law for the protection against immissions caused by air pollutants, which amends the 1994 Trade Act, the Clean Air Act for Boilers, the 1975 Mining Act, the Waste Management Act and the Ozone Act.

[11] Ozone Act (Federal Law Gazette No. 210/92 as amended): Austrian Federal Law on measures to safeguard against ozone pollution and public information about high ozone pollution, which amends the Smog Alert Act, Federal Law Gazette No. 38/1989, (Federal Law Gazette I No. 34/2003).

[12] Air quality measurement concept for the Immission Control Act 2012 (IG-L-MKV 2012; Federal Law Gazette II 127/2012): Regulation of the Federal Ministry for Agriculture, Forestry, Environment and Water Management on air quality measurement concept for the Immission Control Act – Air (IGL-L-MKV 2012)

[13] Ozone measurement concept regulation (Ozon-Messkonzept-VO; Federal Law Gazette II No. 99/2004): Ozone measurement concept regulation of the Federal Ministry for Agriculture, Forestry, Environment and Water Management

[14] Habitats Directive: Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

[15] Birds Directive (2009/147/EC): Directive of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds

[16] http://sfws.lfrz.at/

2 INTERPRETATIVE DOCUMENTS AND LITERATURE

BMNT (Federal Ministry for Sustainability and Tourism) (2018): Draft National Radioactive Waste Management Programme according to Art. 36b of the Radiation Protection Act

BMLFUW (Federal Ministry for Agriculture, Forestry, Environment and Water Management) (2017): Scope as part of the Strategic Environmental Assessment in accordance with Directive 2001/42/EC of the National Radioactive Waste Management Programme in accordance with Art. 36b of the Radiation Protection Act

BMLFUW (Federal Ministry for Agriculture, Forestry, Environment and Water Management) (2015b): Indicator Report MONE 2015 On the Way to a Sustainable Austria. Vienna.

BMLFUW (Federal Ministry for Agriculture, Forestry, Environment and Water Management) (2014): Austrian National Radiation Emergency Plan, Accidents in Austrian Facilities. Vienna.

IAEA (2014): IAEA SAFETY STANDARDS SERIES No. GSR Part 7: Prepardness and response for a nuclear or radiological emergency. Vienna Link

IAEA (2014b): IAEA SAFETY STANDARDS SERIES No. SSG-31: Monitoring and Surveillance of Radioactive Waste Disposal Facilities. Vienna. Link

ENVIRONMENT AGENCY AUSTRIA (2016): State of the Environment in Austria. Eleventh State of the Environment Report of the Federal Minister of the Environment to the Austrian National Assembly. Reports, vol. REP-0600. Federal Environment Agency, Vienna.

LEGAL STANDARDS AND GUIDELINES

General Radiation Protection Ordinance – AllgStrSchV (Federal Law Gazette II No. 191/2006): Ordinance of the Federal Ministry for Agriculture, Forestry, Environment and Water Management, Federal Ministry for Economy and Labour, the Federal Ministry for Transport, Innovation and Technology, the Federal Ministry of Education, Science and Culture and the Federal Ministry of Health and Women's Affairs on general measures for the protection of persons against ionising radiation

Habitats Directive: Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management - https://www.bmlfuw.gv.at/umwelt/strahlen-atom/strahlenschutz/radioakt-abfall/jointvonvention.html

Water Status Monitoring Regulation – GZÜV: Ordinance of the Federal Ministry for Agriculture, Forestry, Environment and Water Management on the Monitoring of the Quality of Water Bodies, Federal Law Gazette II No. 465/2010

Groundwater Directive (GWD): Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration, OJ L 372, 27 December 2006

Air quality measurement concept for the Immission Control Act 2012 (IG-L-MKV 2012; Federal Law Gazette II 127/2012): Regulation of the Federal Ministry for Agriculture, Forestry, Environment and Water Management on air quality measurement concept for the Immission Control Act – Air (IGL-L-MKV 2012)

Immission Control Act - Air (IG-L; Federal Law Gazette I No. 115/1997 as amended). Austrian Federal Law for the protection against immissions caused by air pollutants, which amends the 1994 Trade Act, the Clean Air Act for Boilers, the 1975 Mining Act, the Waste Management Act and the Ozone Act.

Ordinance on Interventions; Ordinance on Interventions in Case of Radiological Emergencies and in Case of Lasting Exposure (IntV) of 2007, Federal Law Gazette II No. 145/2007 as amended

Air Quality Directive (2008/50/EC): Directive of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe. OJ No. L 152.

Ozone measurement concept regulation (Ozon-Messkonzept-VO; Federal Law Gazette II No. 99/2004): Ozone measurement concept regulation of the Federal Ministry for Agriculture, Forestry, Environment and Water Management.

Ozone Act (Federal Law Gazette No. 210/92 as amended): Austrian Federal Law on measures to safeguard against ozone pollution and public information about high ozone pollution, which amends the Smog Alert Act, Federal Law Gazette No. 38/1989, (Federal Law Gazette I No. 34/2003).

Ordinance on the Shipment of Radioactive Waste 2009 (Rabf-VV 2009), Federal Law Gazette II No. 47/2009 as amended

Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation and repealing directives 89/618/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom, (Official Journal. 13/1 ff of 17.01.2014) – (Basic Safety Standards Directive)

Council Directive 2013/51/Euratom laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption

Council Directive 2011/70/Euratom establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste (Official Journal No. L 199/48 of 2 August 2011).

Council Directive 2006/117/Euratom on the supervision and control of shipments of radioactive waste and spent fuel (Official Journal L 337/21 of 5 December 2006)

Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption (Official Journal No. L 300 of 5 December 1998)

SEA Directive: Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment

SEA Protocol: Protocol on Strategic Environmental Assessment to the COnvention on Environmental Impact Assessment in a Transboundary Context – Link

Radiation Protection Act – StrSchG (Federal Law Gazette I No. 133/2015 as amended): Federal law on measures to protect the life and health of humans including that of their offspring from harm caused by ionising radiation

Convention on Environmental Impact Assessment in a Transboundary Context
(Espoo Convention)

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

Birds Directive: Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds, OJ L 103, 25.4.1979 as amended

Water Framework Directive (WFD): Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ. L 327, 22.12.2000

Federal Water Act 1959 (WRG), Federal Law Gazette No. 215/1959 as amended

LINKS

BMNT – Radiation protection: www.bmnt.gv.at/umwelt/strahlen-atom.html

Radiation Early Warning System:
www.bmnt.gv.at/umwelt/strahlen-atom/strahlen-warn-system/sfws.html

Environment Agency Austria – Radiation protection:
www.umweltbundesamt.at/umweltsituation/kernenergie/strahlenschutz/

Radiation measurement data, Environment Agency Austria:
www.umweltbundesamt.at/umweltsituation/kernenergie/strahlenschutz/sws_daten/

Monitoring radioactivity in food in Austria:
www.bmgf.gv.at/home/Schwerpunkte/VerbraucherInnengesundheit/Lebensmittel/Routinemaessige_Lebensmittelueberwachung_auf_Radioaktivitaet_in_Oesterreich

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www.bmnt.gv.at