



Republic of Latvia

National Report on the implementation of the obligations under the Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

5th Review Meeting of the Contracting Parties



Radiation Safety Centre of the State Environmental Service
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SECTION A

INTRODUCTION

Latvia submits the present report for the fifth Review Meeting of the Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (hereinafter - the Convention) which will be planned at International Atomic Energy Agency in May 2015. This report demonstrates how Latvia meets the main objective of the Convention — to achieve and maintain a high level of safety in spent fuel and radioactive waste management, through the enhancement of national measures and international cooperation, including safety-related technical co-operation.

Based on legal requirements and outcomes from the previous Review meetings Latvia noted that there are two basic commitments for each Contracting Party:

- to prepare and make available a National Report for review,
- to submit National Report to a peer review by the other Contracting Parties.

Therefore, as it was done also in the past, Latvia:

- prepared the fifth report,
- made it accessible for other Contracting Parties by posting the National Report on the Convention web site,
- is ready to review National Reports of other Contracting Parties,
- after receiving the questions and comments about our report will prepare and post answers on Convention web site,
- will actively participate in Review Meeting.

This report has been prepared by the Radiation Safety Centre of the State Environmental Service to meet the requirement of Article 32 of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. It considers each of the Convention's obligations and explains how Latvia addresses them.

Latvia recognizes that preparation of the National Report includes a self-assessment and implementation of the safety enhancement measures to meet national and international obligations. We are sure, that international review provides plenty of opportunities for learning from others and the review of the National Report by our peers ensures clarification of issues of special interest, which will serve to justify improvements for action program to enhance safety of radioactive waste management.

The scope of this report is limited to those articles from Convention, which are relevant to the particular situation in Latvia, as Latvia does not possess any spent fuel management facility and all spent fuel from research reactor is already sent back to the country of its origin.

The present report is structured according to the Guidelines for national reports under the Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management established by the Contracting Parties to the Convention (INFCIRC/604/Rev.2). Report is a comprehensive compilation and has been updated on the basis of past reports. It contains changes and new developments since the last report.

Framework of supervision and implementation

There are three main bodies, which have competences relevant to the Joint Convention:

1. Ministry of Environmental Protection and Regional Development – policy maker,
2. Radiation Safety Centre of State Environmental Service - the national regulator,
3. Main operator State limited liability Company “Latvian Environment, Geology and Meteorology Centre” (hereinafter - Centre) - the radioactive waste management operator with their direct subunit radioactive waste repository “RADONS” at Baldone site (hereinafter - RADONS).

Radiation Safety Centre of State Environmental Service (hereinafter - RSC) is central structural unit of State Environmental Service, which according to Law on Radiation Safety and Nuclear Safety has licensing, supervising and controlling functions, it also maintains relevant databases in

radiation safety and nuclear safety field.

According to changes in order of Cabinet of Ministers No. 339 dated on May 28, 2009 “On Reorganization of Radiation Safety Centre”, State Environmental Service took over all functions prescribed in Law on Radiation Safety and Nuclear Safety with exception of those related to measurements of individual dosimetry.

The Centre is main operator of the radioactive waste repository at Baldone site in Latvia. Latvian University is main operator of the Salaspils research reactor who dealing with issues related to decommissioned Salaspils research reactor. Regarding radiation field Centre main responsibilities is monitoring of environmental radioactive pollution, measurements of individual dosimetry and radioactive waste.

The supervision system is defined in the Law on State Administration, which prescribes that:

- State administration shall be organised in a single hierarchical system. No institution or administrative official may remain outside this system;
- Subordination shall be implemented in the form of control or supervision:
 - Control means the rights of higher institutions or officials to issue orders to lower institutions or officials, as well as to revoke decisions of lower institutions or officials;
 - Supervision means the rights of higher institutions or officials to examine the lawfulness of decisions taken by lower institutions or officials and to revoke unlawful decisions, as well as to issue an order to take a decision in case of unlawful failure to act.

Thus any supervised state institutions have full independence in decision making process from government authority perspective with respect to their decisions in the scope of their competence, which shall be defined by the special act (in RSC case - by Law on Radiation Safety and Nuclear Safety). The minister has rights to examine decisions and request necessary changes if the decisions are in violation of the laws and regulations, in all other cases appeals about decisions of RSC can be done only in the court.

Latvia’s accession to the Joint Convention

Decision about accession of the Convention was made by the Government on 2 February 2000¹. The Cabinet of Ministers authorized the Ministry of Foreign Affairs to deposit instrument of accession and entitled the Ministry of Environmental Protection and Regional Development to coordinate implementation of obligations under Convention. The Ministry of Environmental Protection and Regional Development as policy maker elaborate, organize and coordinate issues related to radiation and nuclear safety (including activities relevant to the Convention), but supervising, licensing, controlling and inspecting are under responsibility of RSC.

Latvia acceded to the Convention after deposition of the accession document on 27 March 2000 consequently Latvia became the Contracting Party to the Convention on 18 June 2001. Latvia has participated in all Review Meetings.

¹ The Order of the Cabinet of Ministers No.50 of 2 February 2000, (Latvijas Vēstnesis) 36/37, 04.02.2000.

SECTION B

POLICIES AND PRACTICES

There are no legal changes in national policy regarding nuclear activities in energy sector. Latvia has no any nuclear power plants and there is no intention to build such plant in Latvia. As it was indicated in previous report, there are some discussions on considering possibilities for nuclear energy in Latvia however no significant developments took place since last report.

Latvia recognizes:

- that the operation of nuclear research reactors has generated spent fuel and radioactive waste along with the fact that other applications of nuclear technologies also generate radioactive waste. Moreover, the decommissioning of research reactor will generate much larger amount of radioactive waste than during its operational period;
- that main objectives for any society are to ensure safe management for spent fuel and radioactive waste; therefore all activities shall be done by present generations and within a comprehensive framework of radioactive waste management;
- the importance to the international community of ensuring that sound practices are planned and implemented for the safety of spent fuel and radioactive waste management, because only joint activities could solve technical issues and safety concerns;
- that the safety non-compliance in one single country could imply stronger requirements in other countries and reduce public acceptance for such practices;
- the importance of informing the public on issues regarding the safety of spent fuel and radioactive waste management due to a vital need for public acceptance as waste management activities lead to long term impacts and significant investments, therefore without such acceptance it is impossible to reach safety objectives;
- that requirements for public information are defined as obligations under other environmental protection agreements, which also have direct relation to the constitutional rights of citizens;
- that the ultimate responsibility for ensuring the safety of spent fuel and radioactive waste management rests with the State.

Review of Low Level Waste management policy

Latvia recognizes the importance to develop national strategy and long term plans for radioactive waste management. Currently Latvia has concept regarding low level waste bury in “RADONS” and working on establishing for new national program for the safe management of radioactive waste.

SECTION C

SCOPE OF APPLICATION

Latvia has no nuclear fuel, spent nuclear fuel and therefore has no intention to use reprocessing services, the spent nuclear fuel defined as the radioactive waste. This issue is incorporated also in the framework law that spent nuclear fuel may be processed as an eligible resource or intended for complete disposal without the further use thereof and treated as radioactive waste. The use of spent nuclear fuel shall not be permissible in the Republic of Latvia. Importation of spent nuclear fuel into the Republic of Latvia from other countries shall not be permissible.

There is no any large scale facility or processes in which natural occurring radioactive materials are processed and are treated as radioactive waste, but there were several incidents with enhanced radioactivity of metal scrap imported from other countries for the metal smelting plant, thus minor amounts of such materials had been treated as radioactive waste.

Latvia has no any military facility which generates spent nuclear fuel, currently minor amounts of radioactive waste from defence related activities (e.g. markers on the guns with radium containing luminescent paint) are treated in the same manner as civilian radioactive waste.

In the past (during the time period under former Soviet Union) national radioactive waste management facility RADONS has received relatively large amount of defence related radioactive waste, which still constitute significant part of total radioactivity of the disposed radioactive waste. More detailed information could be found in the first national report [Section I, Annex (g)] and also in publication under NATO research program [Section I, Annex (i)].

SECTION D

INVENTORIES AND LISTS

There are 1050 licensed operators under supervision and control of the RSC, among them there only 50 operators generate radioactive waste.

Latvia has Soviet design pool type research reactor, which was shutdown in June 1998 and RADONS. Radioactive waste in Latvia originates exclusively from civilian programmes. The main potential producers of radioactive waste are:

a) Traditional areas:

○ **industry:** irradiation, nuclide gauges, calibration: Cs¹³⁷ and well logging: Am-Be;

b) Specific areas:

○ decommissioning of Salaspils Research Reactor - the foreseen total volume of radioactive waste ~1200 m³;

○ management of contaminated scrap metal, which was imported either for reprocessing or transit purposes.

SECTION E

LEGISLATIVE AND REGULATORY SYSTEM

Article 18

Implementing measures

Based on the decision of the Government, state agency “Hazardous Waste Management Agency” was reorganized and now RADONS as Centre subordinate is responsible for dealing with issues related radioactive waste.

Centre is subordinated to the Ministry of Environmental Protection and Regional Development, which through State budget and other extra-budgetary sources, provides funds for safety upgrades and management of radioactive waste.

Obligations under the Joint Convention have been implemented in national laws, Cabinet of Ministers regulations; besides, the Concept of the Management of Radioactive Waste defines some additional tasks and measures related to International Conventions. The list of relevant legal documents is provided in the Section I, Annex (f).

Article 19

Legislative and regulatory framework

The Law on Radiation Safety and Nuclear Safety came into force on 26 October 2000. The law governs all activities involving radioactive or nuclear materials and all sources of ionizing radiation. It establishes the basic principles of radiation and nuclear safety (justification, optimisation and limitation) and also contains provisions on nuclear third party liability.

Operators must provide all necessary information to the RSC showing that safety measures are being applied. The RSC may at any time withdraw or revoke licenses if radiation protection and nuclear safety requirements are not met.

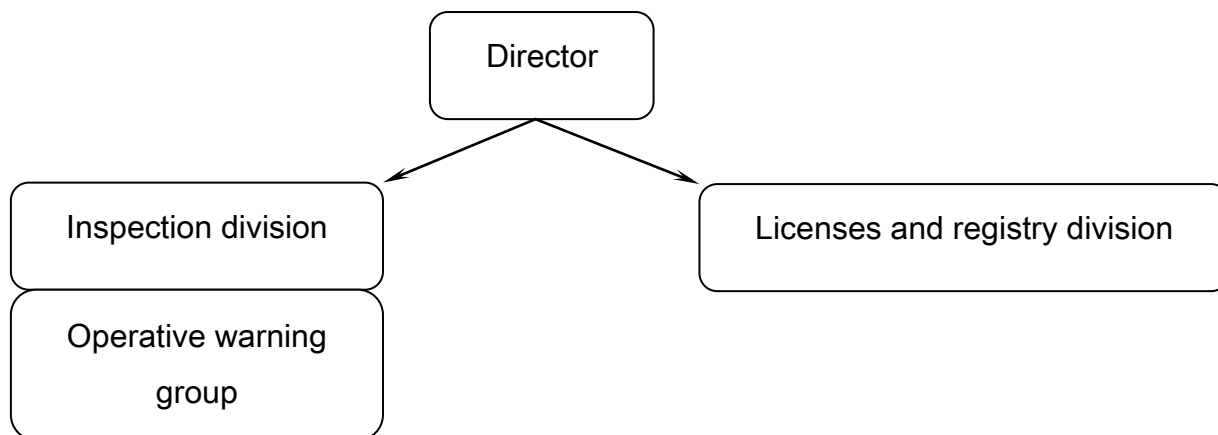
There are basic changes on Law of Radiation Safety and Nuclear Security and the Cabinet Regulations on Practices Involving Radioactive Waste and Related Materials from implementation of Council Directive 2011/70/EURATOM of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste since the last Review Meeting.

Article 20

Regulatory body

RSC was established in July 2001 based on framework law “On Radiation Safety and Nuclear Safety”, which entitled the Government (the Cabinet of Ministers) to issue regulations “Statutes of Radiation Safety Centre” and also empowered the Cabinet of Ministers to issue (in majority of cases re-issue updated regulations, because the system for radiation and nuclear safety was established already in 1994 based on the previous act with the same title) regulations, which were needed to implement legal requirements prescribed by this act. According to amendments in framework law, adopted in June 12, 2009, changed its status to central structural unit of State Environmental Service which is under supervision of the Ministry of Environmental Protection and Regional Development. The RSC is the national regulatory authority in the field of radiation and nuclear safety. RSC has licensing, supervisory and control functions, maintains relevant databases. RSC together with representatives from other state institutions and professional associations deals with certification and recognition of radiation and nuclear safety experts.

Organizational structure of the RSC:



Functions and duties are prescribed by the Law on Radiation Safety and Nuclear Safety. More detailed duties, rights and working procedures are defined in regulations approved by the Cabinet of Ministers. Main functions of the RSC related to implementation of the Convention are defined by legislation, and include to:

- draft policy proposals for supervision and control of radiation and nuclear safety;
- supervise and control radiation safety;
- license practices with radiation sources;
- coordinate combat of illicit trafficking of radioactive and nuclear materials;
- encourage introduction of new technologies to minimize the possible harmful effects;
- co-ordinate technical cooperation in the field of radiation safety;
- prepare national reports;
- assess implementation of international recommendations;
- maintain data bases on practices, sources and exposures.

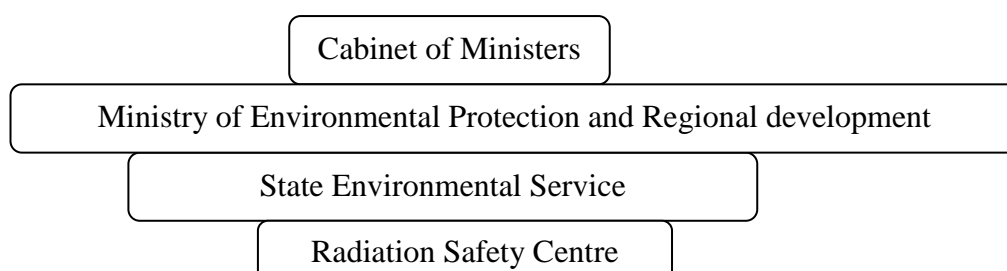
The law on state institutions in details prescribes system of supervision - in short, there is no rights for the supervisor directly affect decisions on the subject matters, only financial control and compliance with requirements from the Law on State civil servants. Thus recommendations about independency are implemented.

The main problem issue still remains staffing and availability of resources for activities of the regulator. Taking into account recent changes in state administrative system, where massive redundancy took place, number of employees of RSC also has been reduced. Since last review Conference RSC implemented also several upgrades of its technical capabilities.

The finances for RSC are granted annually by Saeima (the Parliament) as separate budget line under budget of State Environmental Service. The RSC has no its own income since changes in its status. As far as there is high probability that budget expense will stayed in previous years level, there is some degree of uncertainty and limitations regarding future activities and status of RSC.

The system of state authority under supervision of relevant ministry, which has no functions in the uses and promotion of nuclear energy, assures that RSC is an independent national authority and can implement its decisions also independently from its supervisor.

Place of the regulatory body in the governmental structure:



SECTION F

OTHER GENERAL SAFETY PROVISIONS

Article 21

Responsibility of the license holder

To obtain a license, the applicant must complete an application, which along with other documents, will be reviewed by the RSC. Once delivered, a license is usually valid for ten years. However, any license may be subject to revocation should a violation of safety standards be detected during inspection. Upon expiration, the license is not automatically renewed, and a new application must be made.

Centre is the only organisation in Latvia which dealing with management of radioactive waste. The University of Latvia is the license holder (reactor) for the relevant activities subject to the Convention, in particularly for ensuring nuclear safety without power and safe maintenance of relevant equipment of the research reactor as well as for a complete cycle of radioactive waste management. According the Law on Radiation Safety and Nuclear Safety the license holder has prime responsibility on radioactive waste. Before the issuance of a special licence or the commencement of such activities, which may result in creation of radioactive waste, the RSC shall request information from the operator regarding the foreseeable amount of radioactive waste and measures that will be performed with this radioactive waste.

Article 22

Human and financial resources

Centre is mainly financed from the State Budget. The Ministry of Environmental Protection and Regional Development explains and gives proof to the Government concerning adequate funding for each fiscal year and long term programmes. The Ministry of Environmental Protection and Regional Development provides also extra funds from its resources (including extra-budgetary resources from Latvian Environmental Protection Fund) and assists in finding donors by maintaining cooperation with international organisations. For decommissioning of research reactor the Cabinet and for implementation of the Concept of Radioactive Waste Management the Government shall allocate additional financial resources. Unfortunately, due to the economic crises since 2009 all institutions (RSC, Research Reactor and Radioactive Waste Repository) has very limited budget.

Article 23

Quality assurance

The Quality assurance programmes are requested by the Cabinet Regulation No.723 adopted 20 September 2011 on the Procedures for Licensing Activities with Sources of Ionising Radiation and by the Cabinet Regulation No.149 adopted 9 April 2002 on Protection against Ionising Radiation.

Any facility (especially “facilities of state significance”) is requested to have a Quality assurance programme. The Quality assurance systems are developed by the operators and service companies. More stringent requirements are introduced for accreditation of laboratories and certification of dangerous goods.

According the licensing regulation related to the criteria for applicants the potential operator shall:

- ensure the compliance of employee qualifications with the duties to be performed;
- ensure the development of a radiation and nuclear safety quality assurance programme.

According to the regulations on licensing procedures one of the main documents is a quality assurance programme for operations with sources of ionising radiation.

One of the main tasks for inspectors of RSC is to control the implementation of QA programs.

Detailed requirements to QA programmes are also in Regulations on Radiation Protection during the Transport of Radioactive Materials (including radioactive waste) as well.

Centre has implemented a quality assurance system, which comply with all aforementioned requirements, appreciated by RSC by issuing in appropriate licences. Centre has also accreditation for certain laboratory activities under ISO 17025 standard.

Article 24

Operational radiation protection

Proper level of operational radiation protection as well as of control on discharges and unplanned/uncontrolled releases is provided by the Quality Assurance System of RADONS.

Discharges are specified and quantitatively limited by Regulations on Practices Involving Radioactive Waste and Related Materials. Environmental situation is controlled in accordance with the control programs for national monitoring and also by operator.

The System of Accounting and Transfer of Radioactive Waste of RADONS provides that all physical objects being in the control zone of the Research Reactor and not being necessary for its further maintenance, initially are considered as radioactive waste or related materials. RSC receive also regular reports from the operator and approves the free release of exempted materials.

Additional dose limits related to radioactive waste management are specified in regulation Requirements for the practices with radioactive waste and related materials:

If, based on the results of environmental monitoring and on the long-term safety assessment, it is identified that the potential exposure dose to the members of the public living in the direct vicinity of a radioactive waste disposal facility, is:

- 1) Above or equal to 5 mSv/year, obligatory measures must be taken to bring the situation to normal and to reduce radiation dose less than 300 μ Sv/year,
- 2) Between 1 and 5 mSv/year, respective measures must be taken during over the next five years to bring the situation to normal and to reduce radiation dose less than 300 μ Sv/year,
- 3) Less or equal to 1 mSv/year, the implementation of measures is considered on the basis of the financial and technical capabilities.

The maximal exposure dose to the critical group of population shall not exceed 100 μ Sv/year, but maximal average dose - 10 μ Sv/year.

The Centre has a qualified emergency response group for mitigating the effects of unplanned release of radioactive materials into the environment, should such occur. There is no any case were radiation workers of Centre received external exposures above 6 mSv/year (1/3 from the dose limit), in majority cases the doses are on the level 1-2 mSv/year, which demonstrate that operational safety measures corresponds to good practices.

Article 25

Emergency preparedness

For any new nuclear facility, such plans shall be prepared and tested before it commences operation agreed by the regulatory body. The plans shall be agreed also with local municipalities and Fire and Rescue Services. These are preconditions for applicants and the relevant documents are assessed before RSC grants the license.

National legislation prescribes main duties for job supervisors regarding emergency preparedness. Based on Civil Defence Law the Cabinet of Ministers issued two regulations, which prescribe requirements for emergency plans for any facility and introduced specific requirements for preparedness for radiation emergencies, based on groups of radiation facilities (grouping is done based on potential risks associated with the level of total radioactivity and form (sealed/non sealed sources) of radioactive materials).

For management of accidents the State Civil Defence Plan is established and relevant

regulation² were adopted. The State Civil Defence Plan provides basic principles for emergency preparedness according to radiation and nuclear safety legislation and has requirements for regular testing (including theoretical exercises, table top exercises and practical exercises) and updating of the Plan. Last international exercises aimed to test in real time communication systems and decision-making process was done in 2013.

There are no changes in allocation of responsibilities for governmental bodies' co-ordinating the actions in the case of an emergency. They are the State Fire and Rescue Service and the RSC:

- is responsible for supervision of operative actions at the accident site;
- a larger scale accident activates are supervised and co-ordinated by the State Fire and Rescue Service.

Some other requirements for the emergency planning and response are set out also in some several regulations e.g. on Protection against Ionising Radiation, on safe transport, on licensing etc.

Centre has implemented 2 local plans, in agreement with relevant local municipalities:

- Preparation for and Action in the Case of Accident in Salaspils research reactor;
- Preparation for and Action in the Case of Accident in the RADONS.

There are no changes on regional level - according to the Agreement signed by all states in Baltic Sea region the states concerned have to provide data from their monitoring stations to all parties of the Agreement. Latvia (RSC) participates also in EU EURDEP (EUropean Radiological Data Exchange Platform) network.

There are no new bilateral agreements since last report. Regulations on Preparedness for and Actions in the Case of Radiation Accidents foresee that appropriate training for the testing is necessary for the testing of the emergency plans. Such training is carried out on regular basis, providing the opportunity to test the different levels of organization and improve the key aspects of the emergency planning.

Article 26 Decommissioning

Decommissioning and dismantling of the Salaspils research reactor is an ongoing process according to the Cabinet resolution from October 1999, which was slightly modified in 2004. Currently experts is working on, setting new dates for activities on decommissioning as well as recalculating budget needed for this purpose.

Environmental Impact Assessments for decommissioning and expansion of radioactive waste repository were accomplished in 2005. Additional studies for updates of decommissioning project including definition for further activities of the site were made and the latest decisions on these subjects were done in July 2007 by the Cabinet of Ministers (the finishing of the review of the EIA final report).

² The Cabinet Regulations on Requirements for Preparedness for Radiological Emergency and Actions in the Event of Such Emergency, No.152 (08.11.2003).

SECTION G

SAFETY OF SPENT FUEL MANAGEMENT

Article 4

General safety requirements

The system is based on three main pillars:

- 1) International legal instruments to which Latvia is the Party;
- 2) EU legal instruments;
- 3) National regulations.

Since May 2004 several legal documents had been adopted (e.g. EU regulations implemented into national regulations) and modified (some additional provisions from EU directives and recommendations had been incorporated in national regulations), but as already in late 90^{ies} of last century Latvia worked on preparations of legal framework in harmony with system used in EU, there are no major changes.

Article 5

Existing facilities

There are no major changes regarding the existing facilities and there is no nuclear and spent fuel. Latvia used to have a Nuclear Research Centre with a pool type 5 MW IRT research reactor. The Cabinet of Ministers in 1995 made the decision to start preparations for the decommissioning and in 1998 the second decision was made about permanent shutdown of the reactor. Presently Centre manages the decommissioning project of this research reactor.

There was small radioactive waste storage on the site of research reactor (in operation since 1975-2005) where some parts dismantled from reactor core were stored after reconstruction activities in 1975. All the waste after characterisation and re-packing was transferred to the RADONS.

Article 6

Siting of proposed facilities

Latvia has no plans to establish spent fuel management facility; therefore these provisions are only partly incorporated in national nuclear legislation.

Should such legal acts be needed, the system and steps for the licensing of nuclear facilities and major modifications to such facilities are prescribed in the Cabinet Regulation Procedures for Licensing Activities with Sources of Ionising Radiation, The Law on Environmental Impact Assessment and other relevant Cabinet Regulations governs potential evaluating of relevant site-related factors likely to affect the safety of facility. The Law on Environmental Impact Assessment prescribes requirements for assessment of impact of proposed nuclear facilities on the environment. The mechanism of public hearing is established by licensing regulations. Proper communication with nearby contracting parties of Convention and Nuclear Safety Convention is governed by Convention on environmental impact assessment in a transboundary context (so called Espoo Convention).

Article 7

Design and construction of facilities

As there is no government plan to build any nuclear facility therefore there is no safety issues related to the spent fuel. Nevertheless, these provisions are only partially incorporated in national nuclear legislation. In general legislation, the potential necessary provisions are introduced by the Law on Radiation Safety and Nuclear Safety, Basic safety regulations and Licensing Regulations.

Article 8

Assessment of safety of facilities

As there is no government plan to build any nuclear facility therefore there is no safety issues related to the spent fuel. Nevertheless, provisions related to the safety assessment for nuclear facility are only partly incorporated in legislation because currently no new facility is planned. Should such necessity be raised, the legal basis for the safety impact assessment is given in the Law on Environmental Impact Assessment.

Article 9

Operation of facilities

As there is no government plan to build any nuclear facility therefore there is no safety issues related to the spent fuel. Nevertheless, RSC regularly provides inspections to verify compliance with legal requirements - according the Law on Radiation Safety and Nuclear Safety any nuclear facility is “*ionising radiation facilities of state significance*”, thus according the roles of procedure for RSC the regular planned comprehensive inspections are carried out not less than 4 times per year, in addition to regular topical inspections are organised (e.g. on safeguards issues together with IAEA and EU inspectors) and for any safety significant activity, which is planned by the operator.

Article 10

Disposal of spent fuel

The spent nuclear fuel has been moved out of Latvia in 2008 in accordance with internationally agreed practice - return to the supplier and there is no spent fuel in territory of Latvia.

SECTION H

SAFETY OF RADIOACTIVE WASTE MANAGEMENT

Article 11 General safety requirements

The following legal acts directly governing radioactive waste management are:

1. The law On Radiation Safety and Nuclear Safety;
2. The regulations of the Cabinet of Ministers Requirements for Operations with Radioactive Waste and Materials Related Thereto; The Principles of Determination of the Equivalence of Various Radioactive Waste; Procedures for Licensing Activities with Sources of Ionising Radiation.

As practices with radioactive waste are in the same time also practices with radiation sources all other regulations are applicable (e.g. basic safety requirements, requirements for physical protection, safe transport, etc.).

A Concept of the management of radioactive waste was approved by the Cabinet of Ministers in 2003 which was elaborated, based on:

- a. IAEA *generic* principles for radioactive waste management,
- b. *Site-specific* conclusions recommendations of CASSIOPEE study on Safety Assessment of RADONS.

According to the law on Radiation safety and Nuclear Safety and Cabinet Regulations on Practices Involving Radioactive Waste and Related Materials the radioactive waste is classified in several groups, *inter alia*, also according the amount of generated heat power for high activity waste.

Criticality issues are specified in Regulations on Protection against Ionising Radiation in Transportation of Radioactive Materials, which set up also limitations on radioactivity content in packages/containers.

According to the law On Natural Resources Tax and the law On Radiation Safety and Nuclear Safety - in the case of import into the Latvia of radioactive substances that, after use thereof, generate radioactive waste which needs to be disposed of in Latvia, a natural resource tax is payable on the import of such substances but such situations is very few.

According to the Regulations of the Cabinet of Ministers on Practices Involving Radioactive Waste and Related Materials the operator, who plans to import sealed ionizing radiation sources, containing radioactive materials whose radioactivity when using given sources for a period of 10 years will exceed 100 MBq, prior to acquisition of said sealed ionizing radiation sources into possession or tenure, must take all possible measures so that possibility to send back mentioned sealed sources to the producer be specified in the purchase and sales contract or in the grant agreement.

In case when the purchase and sales contract or the grant agreement does not contain provisions on send-back of disused sealed sources to producers thereof:

- i. other possible suppliers must be sought or;
- ii. requirement to pay a fee for import of radioactive substances into Latvia.

Currently Latvia is starting to develop new radioactive waste program which according EU directive have to be finalized in 2015.

Article 12 Existing facilities and past practices

Centre is the sole organization in Latvia dealing with all stages of radioactive waste management, including processing, conditioning, transportation long-term storage, and disposal of radioactive waste. Centre maintain main site near surface radioactive waste repository RADONS in Baldone. University of Latvia maintain research reactor site in Salaspils and dealing with safe enclosure of research reactor and decommissioning activities thereof.

Article 13 **Siting of proposed facilities**

The required measures are provided by the set of legislation acts, in particular:

1. The law On Radiation Safety and Nuclear safety stating that “in accordance with the Law On Environmental Impact Assessment, an environmental impact assessment has been performed for the creation of an ionising radiation object of national significance or the performance of essential changes therein, a decision to accept activities shall be taken by the Cabinet by issuing an order for each time”.
2. The Licensing Regulations Procedures for Licensing Activities with Sources of Ionising Radiation requiring fulfil major steps to be made prior to of the facility, and establishing the mechanism of public hearing;
3. The Law on Environmental Impact Assessment governing potential evaluating of relevant site-related factors likely to affect the safety of facility, and prescribing requirements for assessment of impact of proposed facilities on the environment.
4. Convention on environmental impact assessment in a transboundary context (so called Espoo Convention) requires cross border activities regarding siting issues.

Article 14 **Design and construction of facilities**

These provisions have been incorporated in general legislation: by the Law on Radiation Safety and Nuclear Safety. The Law on Conformity Assessment, the Law on Environmental Impact Assessment, National basic safety standards and Licensing Regulations must also be observed and complied with.

Article 15 **Assessment of safety of facilities**

The Cabinet Regulations On Protection against Ionising Radiation, and On the Procedures for Licensing Activities with Sources of Ionising Radiation, require, that in order to be authorized, the following tasks shall:

- reduce the risks to the health and safety of an employee or other person, related to the structure and use of a source of ionising radiation, taking into account the effect of the ionising radiation, electric shock and mechanical hazard;
- ensure the preparedness for radiological emergencies and the prevention of the consequences thereof;
- ensure the development of a radiation safety programme;
- access to information concerning the evaluation of potential threat from nuclear facilities, as prescribed by the Licensing Regulations.

Information about planned activities and major changes at nuclear facilities should also be provided to the public. All this information is used for decisions regarding licensing, licensing conditions and implementation is verified by inspections.

The Licensing Regulations and National basic safety standards prescribe the duties for RSC in the field of inspections. Practical activities are stipulated by internal document of RSC “Inspection Manual”, which was developed during the 2004-2005, based on Law on State authorities. This law prescribes, that such internal/external documents (in this case - regulatory provisions of RSC) shall be developed to ensure knowledge for operators about working procedures of regulatory authority.

RSC inspectors carry out verification of safety on regular basis and also perform no announced inspections.

More over there is additional legal base for safety impact assessment, which is given in the

law On Environmental Impact Assessment. That system was extensively used during the planning phase of decommissioning and activities for expansion of radioactive waste repository.

Periodic safety assessments of nuclear installations using deterministic and probabilistic analysis methods is used in very limited scope - mainly during the re-licensing (Latvia has legal provisions for first time license is valid 5 years, re-licensing is valid for 10 years).

Article 16

Operation of facilities

Licensing procedures

The licensing procedures for radioactive waste management facility are regulated mainly by set of licensing regulations, which cover the conceptual stage, design, construction, commissioning and operation of the facility. The operation license is valid for a period of 10 years.

The last license issued to the operator of radioactive waste management facility is based on conclusions obtained from Long-term safety analysis of the Baldone repository and EIA study as well as the EU Twinning Light Project Radioactive Waste Management and Reactor Decommissioning. RSC is assessing compliance to requirements with national legislation, existing standards. All safety related instructions; guidance and Quality Assurance programmes prepared by Operator had been analysed and accepted by RSC.

Assurance of engineering and technical support

Radioactive waste management is mainly funded from the State budget, thus assurance of support in safety related fields are considered annually and the Ministry of Environmental Protection and Regional Development, which can provides extra resources if needed.

External engineering and technical support is provided in the frame of the relevant IAEA Technical Co-operation Projects and by co-operation with USA (Department of Energy) etc.

Incident Reporting system

The provisions required reporting of incidents have been implemented in the law on Radiation Safety and Nuclear Safety – operator and job manager is responsible for immediate incident reporting to the RSC and other institutions who are dealing with radiation safety and nuclear safety issues. Fortunately, there was no such event up to now. The minor deviations from safety requirements are registered by operator and discussed with RSC inspectors during the planned inspections. The corrective actions are always prepared and implemented.

Provisions regarding decommissioning of radioactive waste management facilities, closure of a disposal facility

Regulations dealing with licensing and with preconditions for applicants request to elaborate future decommissioning plan for any facility where radioactive materials are envisaged to be used. During application for first license an outline for decommissioning plan is requested, which is updated during entire operational period receiving each next license.

Cabinet Regulations „Requirements for the Practices with Radioactive Waste and Related Materials” foresee before closure of the disposal facility a detailed consecutive implementation of a set of measures with an aim to upgrade safety. The possibilities for implementation of these requirements are subject to licensing conditions.

Article 17

Institutional measures after closure

Provisions related to activities after closure of facility are implemented and in detail specified in Cabinet Regulations Requirements for the Practices with Radioactive Waste and Related Materials. There are no major changes for these requirements.

SECTION I
TRANSBOUNDARY MOVEMENT
Article 27
Transboundary movement

Basic provisions of this Article have been implemented in Cabinet of Ministers Regulations on the Procedure governing Activities involving Nuclear Materials, Related Materials and Equipment, regulations Requirements for the Practices with Radioactive Waste and Related Materials as well as Regulations on General Principles of Exchange Procedure of Different Radioactive Waste. In Regulation Requirements for the Practices with Radioactive Waste and Related Materials stipulated that:

- RSC forwards an application for the permit to export radioactive waste and the corresponding Permission Form to the Authority of that state where it is planned to carry out waste reprocessing and to Authorities of all those states whose territories will compose the transportation route of this waste, followed by an relevant request to give a corresponding conclusion;
- RSC is authorized to issue a permit to export radioactive waste for its re-processing only after receipt of official permit from the Authorities of all those states to whom RSC had forwarded the permit to export radioactive waste for the purpose of its reprocessing.

SECTION J
DISUSED SEALED SOURCES
Article 28
Disused sealed sources

Proper possession and accounting of disused sealed sources is provided by the requirements of the Law on Radiation Safety and Nuclear Safety, setting up to the RSC following obligations:

- to ensure identification, investigation and assessment of unknown ionising radiation sources discovered on national territory, or of undeclared ionising radiation sources discovered at the state's border, and to organise disposal thereof should it fail to be possible to identify the user or the owner of a radiation source;
- to ensure accounting of ionising radiation sources; to establish and update data bases on radioactive substances, nuclear materials, radioactive waste and other ionising radiation sources.

Management of disused sealed sources is prescribed also by the requirements by set of regulations on licensing and on regulations on "Requirements for the Practices with Radioactive Waste and Related Materials".

Based on these legal provisions and some experiences for practical implementation Latvia sent notification to the IAEA about implementation of Code of Conduct and recommendations for transboundary movements.

Practices towards safe disposal of disused sealed sources

The Cabinet of Ministers regulations "Requirements for the Practices with Radioactive Waste and Related Materials", which together with the Law on Natural Resource Tax encourage return of disused sources to their producers.

SECTION K
PLANNED ACTIVITIES TO IMPROVE SAFETY

Another type of activities are related to safety improvements, which are connected with the building of two new vaults at RADONS in Baldone site, interim storage for long lived waste and final capping of old vaults which is connected with decommissioning Salaspils research reactor.

SECTION L ANNEXES

(a) **List of spent fuel management facilities:** None.

(b) **List of radioactive waste management facilities:** There are two main facilities:

1. Radioactive waste disposal site RADONS;
2. pre-treatment and conditioning facility at Salaspils site, which has also store for conditioned cemented radioactive waste to be collected and ensure proper before transportation to the disposal site RADONS.

Basic information about facility

RADONS was commissioned in October 1962. The site is located at a hill that rises up to a level of 35 m higher than the territory surrounding it. In the vicinity of the site, the level of groundwater is 18 m below the earth surface. Hence, penetration of groundwater into the near-surface vaults for radioactive waste disposal is minimised. There is a zone with radius of 1 km around the centre of the site where no residential houses are found.

Centre shall ensure also storage of all long- lived radioactive waste until the establishment of a geological repository or finding of other solution. The institutional control after the closure of the repository is foreseen for the period of 300 years.

The site of "RADONS" covers an area of 7 hectares. A general lay-out of the site is given in Fig. The operator-controlled area (i.e. the site) is divided in a controlled area (the B-zone) and a supervised area (the A-zone). The physical boundaries of the premises and buildings are used as a boundary of these areas (zones).

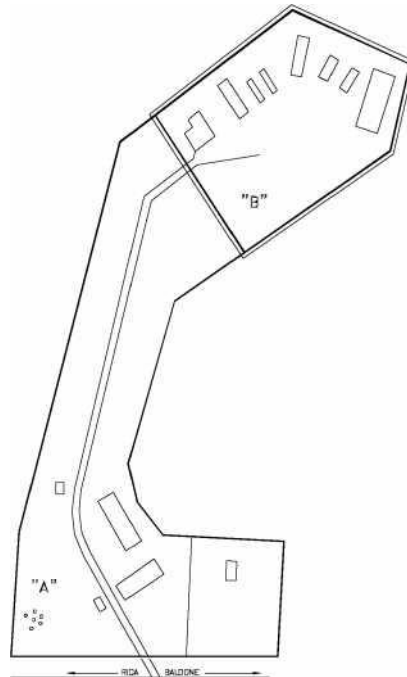


Figure 1 Arrangement of the radioactive waste disposal facility

(c) **List of nuclear facilities in the process of being decommissioned:** Salaspils research reactor.

(d) **Inventory of spent fuel:** Nothing remains at the site.

(e) **Inventory of radioactive waste:** The total radioactivity of waste accepted for disposal or long term storage over 40 years of operation of the site, taking into account the radioactive decay, at the end of 2014 is around $3.8 \cdot 10^{14}$ Bq and total volume about 870 m^3 . The amount of radioactive waste accepted per year varies from one year to another, in the period 2011-2013 fluctuating between 10^8 Bq and 10^{13} Bq. The volume of radioactive waste varies also significantly.

(f) The annual accepted radioactive waste volumes and their activities are illustrated in Table 1

Table 1

Annual amount of radioactive waste received by RADONS

Year	Volume, m3	Activity, Bq
2000	16	3,50E+12
2001	16	4,80E+12
2002	16	8,50E+13
2003	7	9,50E+12
2004	14	7,00E+13
2005	17	1,20E+12
2006	17	1,40E+13
2007	5	3,20E+13
2008	6,6	1,27E+14
2009	8,5	1,38E+12
2010	7,2	8,04E+06
2011	11,9	4,22E+12
2012	15,3	1,27E+08
2013	0,822	3,87E+10

Table 2

Radioactive waste inventory at Baldone site

Nuclide	Interim storage	Vault 1	Vault 2	Vault 3	Vault 4	Vault 5	Vault 6	Vault 7	Total
Ag-110m								2380	2,38E+03
Al-26				1,05E+12				7,22E+05	1,05E+12
Am-241	3,12E+05			1,05E+11	2,90E+10		5,34E+11	3,39E+12	4,06E+12
Ba-133	7,88E+05	4,49E+08	1,99E+06	1,84E+11	1,98E+07		4,81E+08	6,44E+07	1,85E+11
Bi-207				5,85E+07			1,46E+08	7,87E+04	2,05E+08
Bi-210m				2,64E+08					2,64E+08
C-14		4,43E+11	1,87E+09	1,00E+12	2,80E+11	1,23E+08	1,02E+11	2,72E+10	1,85E+12
Cd-109	8700	2,14	1,25E+02	1,07E+05	3230		4,97E+05	4,18E+07	4,24E+07
Cd-113m				5,34E+07					5,34E+07
Ce-144									0,00E+00
Cl-36		1,01E+12		4,29E+12	1,22E+08	4,11E+07	2,45E+10		5,32E+12
Cm-244							4,43E+05	7,48E+08	7,48E+08
Co-57	654						34,4	7,52E+04	7,59E+04
Co-60	3660	8,12E+10	3,99E+05	4,13E+11	4,08E+10	2,64E+07	3,30E+11	1,71E+14	1,72E+14
Cs-134		4,72E+04		4,38E+07	9,37E+04	2,72E+04	1,42E+06	25	4,54E+07
Cs-137	9,00E+09	2,25E+12	1,71E+08	4,72E+13	1,74E+12	2,40E+07	1,53E+13	2,93E+13	9,58E+13
Cu-63		4,93E+09							4,93E+09
Eu-152		1,65E+08		3,74E+09			1,41E+10	1,48E+11	1,66E+11
Eu-154		2,70E+07		1,83E+09				2,68E+09	4,54E+09
Eu-155		3,26E+03							3,26E+03
Fe-55	2,90E+04	3,59E+06		2,77E+09	6,27E+07	1,36E+05	3,37E+08	4,31E+10	4,63E+10
H-3	580	2,54E+10	1,76E+08	1,03E+13	7,35E+09	1,27E+07	2,93E+12	3,31E+13	4,64E+13
K-40		3,70E+10		8,81E+10					1,25E+11
Kr-85		1,26E+09		3,31E+10	8,50E+09		2,14E+10	2,61E+12	2,67E+12
Mn-54				56,9			29,1	83,8	1,70E+02

Mo-93				1,84E+07			1,84E+07		3,68E+07
Na-22		3,87E+05		1,08E+09	1,12E+05	3,47	1,84E+06	1,12E+04	1,08E+09
Nd-144		9,96E+07					1,00E+08		2,00E+08
Ni-59				1,80E+09		4,11E+07			1,84E+09
Ni-63	4,95E+08	1,62E+11		8,69E+12			3,50E+10	6,66E+09	8,89E+12
Pb-210		4,06E+10		6,21E+11	1,46E+07	3,41E+07	6,48E+08	1,07E+07	6,62E+11
Pd-107				5,55E+09			1,82E+09		7,37E+09
Pm-147		6,43E+06		8,67E+09	2,52E+08		2,99E+09	4,31E+10	5,50E+10
Pu-238	4,73E+05			5,70E+09	3,02E+10		2,24E+11	5,75E+12	6,01E+12
Pu-239	1,17E+11	1,85E+11		1,59E+12	8,87E+10	1,85E+09	1,02E+12	2,65E+12	5,65E+12
Ra-226	5,12E+06	8,55E+11	6,06E+09	7,71E+10	3,45E+04	3,66E+07	2,69E+11	3,83E+09	1,21E+12
Ru-106				1870			90,8	2,04E+07	2,04E+07
Sb-125		3,67E+06		1,90E+08			7,73E+05		1,94E+08
Sm-151				1,91E+08					1,91E+08
Sn-119m								5820	5,82E+03
Sn-121m				2,62E+07					2,62E+07
Sr-90	1,69E+05	1,22E+12		2,16E+12	4,38E+11		1,15E+12	2,35E+13	2,85E+13
Tc-99				1,10E+09	8,98E+07		3,20E+08	1,60E+08	1,67E+09
Th-228							1360	1,50E+04	1,64E+04
Th-230				1,67E+04					1,67E+04
Th-232	1,50E+05	4,24E+06	1,18E+08	9,39E+05			1,72E+08	7,60E+08	1,06E+09
Ti-44				2,09E+09			1,10E+08	1,72E+05	2,20E+09
Tl-204		1,97E+08		8,03E+08	3,91E+08		1,22E+10	6,76E+10	8,12E+10
U-232		5,04E+10							5,04E+10
U-233	2,35E+04			3,50E+04	3,84E+04		8,72E+05	1,48E+05	1,12E+06
U-234				2,21E+03			2,15E+04	73	2,38E+04
U-235	0,463	6,07E+05		3,57E+04			4,27E+03	1,13E+05	7,60E+05
U-238	100	8,22E+07	1,29E+08	2,17E+07	8,00E+06		2,70E+07	6,11E+10	6,14E+10
Zn-65								1,29E+07	1,29E+07
Zr-93		1,78E+07		1,41E+09			2,22E+07		1,45E+09
Total	1,26502E+11	6,37E+12	8,53E+09	7,78E+13	2,66E+12	2,19E+09	2,20E+13	2,72E+14	3,81E+14

Radioactivity for all radionuclides is given in Table 2 (data re-calculated on 1 January 2014).

(g) References to national laws, regulations, requirements, guides, etc.:

1. Law On Radiation Safety and Nuclear Safety, adopted 07.11.2000;
2. The Cabinet Regulation Procedures for Licensing Activities with Sources of Ionising Radiation, No.723, adopted 20.12.2011;
3. The Cabinet Regulations on Protection against Ionising Radiation Transporting Radioactive Materials, No.307, adopted 03.07.2001;
4. The Cabinet Regulations on the Procedure for Packaging and Marking of Ionising Radiation Sources, No.406 (18.09.2001);
5. The Cabinet Regulations on the Procedure for Control and Accounting of Exposure of Workers, No.1284, adopted 12.11.2013;
6. The Cabinet Regulations on Practices Involving Radioactive Waste and Related Materials, No.129 (19.03.2002);
7. The Cabinet Regulations on Protection against Ionising Radiation, No.149 (09.04.2002);
8. The Cabinet Regulation on Generic Principles for Exchange of Radioactive Waste, No.157 (16.04.2002);
9. The Cabinet Regulations on Radiometric Control of Goods and Transport Vehicles on the

State Border, No.233 (05.04.2005);

10. The Cabinet Regulations on the Procedure governing Activities involving Nuclear Materials, Related Materials and Equipment, No.398 (22.04.2004).
11. The Cabinet Regulations on Physical Protection of Ionising Radiation Sources, No.508 (04.11.2002);
12. The Cabinet Regulations on Preparedness and Response in Cases of Radiation Accidents, No.152 (08.11.2003).

(h) References to official national and international reports related to safety Convention:

1. First report submitted by Latvia under the Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 2003;
2. Second report submitted by Latvia under the Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 2005.
3. Third report submitted by Latvia under the Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 2009.
4. Fourth report submitted by Latvia under the Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 2011.

NSC:

1. Report on implementation of Convention on Nuclear Safety in the Republic of Latvia, 1998;
2. Second report submitted by Latvia under the Convention on Nuclear Safety, 2001;
3. Third report submitted by Latvia under the Nuclear Safety Convention, 2004;
4. Republic of Latvia National Report On the implementation of the obligations under the Convention on Nuclear Safety, 2007.
5. Republic of Latvia National Report On the implementation of the obligations under the Convention on Nuclear Safety, 2011
6. Republic of Latvia National Report On the implementation of the obligations under the Convention on Nuclear Safety, 2013.

EC:

1. Main Findings of the Commission's Article 35 Verification in Latvia, 21 to 24 March 2006, (LV-06/01);
2. Technical Report Verifications under the Terms of Article 35 of the EURATOM Treaty, (Latvian National Monitoring Network for Environmental Radioactivity), 2006, (LV-06/01).

IAEA:

1. Radioactive waste disposal and the environment in Latvia, Proceedings of Conference Radiation and Society: Comprehending Radiation Risk, Paris (France) 24-28 October 1994;
2. Multi-step Optimization for Salaspils Research Reactor Dismantling and Decommissioning, Proceedings of International Conference on Lessons Learned from Decommissioning of Nuclear Facilities and the Safe Termination of Nuclear Activities, Athens (Greece) 11-15 December 2006.

(i) References to reports on international review missions:

1. IAEA End-of-Mission Report on "Waste Management Advisory Mission" by B. Martens, M. Ulbok, C. Bergman, 24-28 April, 1993;
2. Infrastructure Appraisal for Latvia on Radiation Safety, 04-08 December 2008 (RaSIA 18/2006/LAT).

(j) Other relevant materials: none.