Republic of Latvia
National Report

On the implementation of the obligations under the Convention on Nuclear Safety

5th Review meeting of the Contracting Parties

2010

EXECUTIVE SUMMARY

Latvia submits the present report for peer review at the fifth Review Meeting of the Nuclear Safety Convention (hereinafter: the Convention or CNS) at the International Atomic Energy Agency in April 2011. This report demonstrates how the Latvia meets the main objective of the Convention — to achieve and maintain a high level of nuclear safety worldwide by enhancing national measures and international cooperation. It also shows how the Latvia meets the obligations of the applicable articles established by the CNS.

Based on legal requirements and outcomes from the previous three 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 past (already four times), Latvia:

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

Latvia recognizes that preparation of the National Report includes a self-assessment and preparation of the safety enhancement measures to meet national and international obligations. We are sure, that international review provides plenty of opportunities for continuous learning from others and the review of the National Report by our peers ensure illumination of issues of special interest, which will improve Latvia's action program to enhance safety.

The scope of this report is limited to those articles from NSC, which are relevant to the particular situation in Latvia, as the Convention applies mainly to nuclear power reactors, but Latvia does not possess any nuclear power plant and the only research reactor is in early stage of decommissioning.

The present report is structured according to the Guidelines regarding national reports under the Convention on Nuclear Safety established by the Contracting Parties to the Convention (INFCIRC/572/Rev.3).

Section 1 – Introduction – informs on national policy towards nuclear activities, provides statement on the commitment to the Convention and informs on main safety issues addressed in National Report as well as explains preparation, structure and main features of National Report.

Section 2 – Summary – addresses safety issues, which have been identified in previous National Report and responds to recommendations adopted at the plenary sessions of previous Review Meeting of the Contracting Parties

Section 3 – Reporting article by Article

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SECTION I
INTRODUCTION

1. National Policy towards Nuclear Activities

The Radiation Safety Centre of State Environmental Service (hereinafter also RDC) is the national regulatory authority in the field of radiation and nuclear safety. Radiation Safety Centre is central structural unit of State Environmental Service, which according to Law on Radiation Safety and Nuclear Safety has licensing, supervisory and control functions, it also maintains relevant databases. RDC together with representatives from other institutions and professional associations deals with certification of radiation and nuclear safety officers and recognition of radiation and nuclear safety experts.

RDC 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 from being supervised institution by Ministry of Environment to central structural unit of State Environmental Service.

According to changes in order of Cabinet of Ministers No. 339 dated on May 28, 2009 "On Reorganization of Radiation Safety Center", State Environmental Service took over all functions prescribed in Law on Radiation Safety and Nuclear Safety with exception of those related to monitoring of environmental radioactive pollution and measurements of individual dosimtery. Monitoring of environmental radioactive pollution and measurements of individual dosimtery were taken over by state limited liability company "Latvian Environment, Geology and Meteorology Centre".

The main operator in Latvia (operator of the Salaspils research reactor and radioactive waste repository at Baldone site) is the state limited liability company "Latvian Environment, Geology and Meteorology Centre". In the past it was the State agency "Hazardous Waste Management Agency" with the main tasks to safely maintain Salaspils research reactor in the shutdown stage and to manage radioactive waste repository. Later on, based on the decision of the Government, state agency was reorganized and now Hazardous Waste Department of Latvian Environment, Geology and Meteorology Centre is responsible for dealing with issues related to Salaspils research reactor and radioactive waste.

There are no changes in national policy regarding nuclear activities in energy sector. Thus Latvia has no any nuclear power plan and there is no intention to build such plan in Latvia. Latvia always is in favour regarding the safety upgrades for existing nuclear facilities and, if such upgrades are not manageable in reasonable time, the relevant facilities shall be closed down and decommissioned.

2. National Nuclear Programme

In Latvia there are no nuclear installations as it is defined in Article 2(1) of the Convention and there are no plans to build any nuclear installation.

3. Commitment to the Convention

Latvia does not possess nuclear installations as defined in Article 2(1) of the Convention. Despite the fact that research reactors are not formally covered by the Convention (see Art.2), Latvia (as also some other Contracting Parties of CNS) agreed to include them during the previous CNS peer review conferences. Latvia owns only one research reactor, which is permanently closed down and currently is in early stage of decommissioning. The spent nuclear fuel has been returned to the country of origin in May 2008. However due to lack of financial resources further steps towards decommissioning has not been taken.

Taking into account current nuclear framework in Latvia, the National Report is mostly oriented to the issues related to radiation safety and emergency preparedness. However other aspects from CNS are covered, but in limited degree, because many of the requirements relevant to the nuclear power are not explicitly introduced by the legal framework, thus main principles and requirements for any practice with the sources of ionising radiation are applied. Latvia's legal system will be further developed in the case if any new nuclear facility would be envisaged.

4. Information on preparation, structure and main features of National Report

National Report has been drafted taking into account recommendations defined in INFCIRC/572/Rev.3, structure of report reflects suggestions identified in abovementioned INFCIRC. Main attention has been paid to reflection of changes, which took place since last Review Conference, however, many paragraphs have been included without changes to ensure that stand-alone report rather than a report restricted to changes and updates is available. The Radiation Safety Centre of State Environmental Service prepared this report in consultation with and incorporating contributions from:

- State limited liability company "Latvian Environment, Geology and Meteorology Centre";
- Ministry of the Environment;
- Radiation Safety Board.

SECTION II
SUMMARY

Since last report Latvia has submitted TC project designs, which in case of implementation will promote improving of radiation safety situation. One of project designs is devoted to the installation of the reliable radiation monitoring system will increase the operational safety of repository “Radons" and public acceptance for further development of the repository site according to the Government plans. The radiation safety of repository "Radons" at Baldone site is one of the key factors for safe radioactive waste management in Latvia. The security of repository, transportation and disposal of radioactive waste and radiation control of the transport is significantly upgraded during last 8 years. The EIA studies were performed and outline design for two new radioactive waste vaults was prepared in 2004-2006. It was found, that the basic problems for safe operation of repository are connected with the demands of population to upgrade of the radiation monitoring of repository site including the groundwater, dry wells and airborne contamination control systems. Since such experience is not available in Latvia, the accumulated experience of IAEA and its MS for operations at different repositories will be very suitable for the verification and assessment of existing radiation monitoring system and installation upgrades for repository “Radons" in Latvia.

Under framework of TC programme Latvia wants also to improve radiation monitoring data collection system and enhance its capabilities. Currently there is a system of on-line data monitoring, upgraded in 2003 - 2005. System consists of 16 stations placed in different regions across country. Latvia needs to ensure fast and reliable data collection in the case of emergency and to enhance and increase stability of data collection in normal situations as well as expand data exchange within international network (EUCURE), by making available data from aerosol monitoring station. These activities should be considered as continuation of PHARE project 2003/5812.03.01 "Modernization of early warning monitoring system", which allowed to upgrade monitoring system considerably. Mobile vehicle based emergency radiation monitoring system was also acquired using TC programme.

RDC continues upgrades and updates for RAIS to ensure better data management about all operators, all sources and all practices.
Since 2006 RDC participates as observer at WENRA meetings, which provides opportunities to use recommendations and experiences from countries with large and better-developed infrastructure for radiation and nuclear safety.

Activities related to the emergency preparedness could be divided into several groups:

- Development and updating of working procedures (information and data exchange, activities for emergency group, cooperation with other state institutions);
- Knowledge management and education of relevant staff;
- Enhancement of technical capabilities for response teams (mobile laboratory, measurement equipment, protective equipment).

To enhance emergency preparedness Latvia has implemented TC project LAT/8/002 “Development of Biological Dosimetry Services”. The Biological Dosimetry Service is used for radiological emergencies and to evaluate individuals suspected of having been overexposed to ionizing radiation. The Service helps to identify false alarms and will confirm genuine overexposure and provide an alternative dose estimate independently of the physical measurement methods.

SECTION III
IMPLEMENTATION OF THE CONVENTION

Chapter 2 (a) of the Convention – General Provisions

Article 6: Existing nuclear installations

There is no any nuclear installation according the definition[1] of the Nuclear Safety Convention in Latvia.

There is a Soviet designed pool type research reactor, which had maximum thermal power 5000 kW utilising U-235 with 90% enrichment. Reactor was operated from 1961 to 1998. It is permanently shutdown and is in early stage of decommissioning. The spent HEU has been shipped back to the country of origin. Initially it was planned that decommissioning will be finished in 2010 however now this date has been postponed.

As the research reactor was built long time before introduction of probabilistic safety assessment (PSA) for such facilities and decision to shutdown was already envisaged at the time when Latvia introduced current legal framework, no specific legal requirements for PSA have been elaborated. There are also deviations from IAEA recommendations about time and content of periodic safety review (PSR) – as both operator (BAPA) and regulator (RDC) have limited capabilities to use full scope PSR and research reactor is in the phase when many changes are introduced frequently (activities related D&D), then it is not justifiable to use 10 years period for PSR as in case of operating NPP or research reactor.

Recommendations from IAEA Nuclear safety standards (NS.R.2) regarding periodic safety reviews are incorporated in national legal system by means of re-licensing – regulations on licensing[2] provides requirements for reviews of all safety aspects of radiation facility, including on-site and off-site emergency planning, accident management and radiation safety. Regulations stipulate that re-licensing (application for new license and review by regulatory authority) shall be done on 3 years base (license in normal situation, if there are no objections or special conditions is valid 3 years).

Concept for decommissioning was approved by the Government in 1998 and amendments made in 2007, currently all steps of decommissioning prescribed in document remain the same however dates will change. At current stage it is not possible to set new deadline for decommissioning of research reactor due to lack of financial resources.

There was small radioactive waste storage on the site of research reactor (in operations from 1980-2005) where some parts dismantled from reactor core and internals were stored after reconstruction activities of research reactor in 1980. All the waste after characterisation and re-packing were transferred to the radioactive waste repository at Baldone.

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[1] "*any land-based civil nuclear power plant under its jurisdiction including such storage, handling and treatment facilities for radioactive material as are on the same site and are directly related to the operation of the nuclear power plant. Such a plant ceases to be a nuclear installation when all nuclear fuel elements have been removed permanently from the reactor core and have been stored safely in accordance with approved procedure, and a decommissioning programme has been agreed to by the regulatory body"*

[2] 7. The Cabinet Regulations on the Procedure of Issuing of a Special Permit (Licence) or Permit for Activities Involving Ionising Radiation Sources and Procedure for Public Dispute on the Establishment of Ionising Radiation Facilities of State Significance or on Essential Modifications thereto, No.301 (03.07.2001)

Radioactive waste repository is in the process to be expanded (to accommodate all radioactive waste from decommissioning and dismantling of research reactor). More detailed information on these issues are and will be provided under Joint Convention as storage facilities are not the subject of NSC.

Since late 90-ies BAPA (initially RAPA, see above) operates radioactive waste treatment and temporary storage facilities on the Salaspils site – to treat waste from dismantling of not necessary systems for safe enclosure stage of D&D activities of research reactor and to provide services for small waste producers in Latvia. Radioactive waste repository at Baldone site is mainly dealing with conditioned and packed radioactive waste. During the period of 2001-03, under the project financed by the Government of Latvia and also under the IAEA TC project LAT/4/005 two facilities were introduced on the Salaspils site – one for conditioning of tritium containing liquid waste together with solid waste and for short term storage of conditioned waste packs (before they are transportable).

Environmental Impact Assessments for decommissioning and for expansion of radioactive waste repository were accomplished in 2004 and 2005. Additional studies for updates of decommissioning project including definition for further activities of the site were made and proposal for next decisions was submitted to the Government. The latest decisions on these subjects were done in July 2007by the Cabinet of Ministers.

Chapter 2 (b) of the Convention – Legislation and Regulation

Article 7: Legislative and regulatory framework

1. Three sources for legal acts

There are three types of legal acts in Latvia, which are applicable for review under NSC: primary national legislation, secondary legislation (regulations) and EU legal acts.

The main act is the Law on Radiation Safety and Nuclear Safety. In parallel with this framework act, there is also a set of international agreements ratified or acceded by Latvia and several general legal acts, which have some provisions relevant to the NSC (e.g. legislation relevant to the state institutions in general, environmental protection legislation, building codes, administrative and criminal acts.

The secondary sources for Latvia's legal system are regulations and decisions issued by the Government (Cabinet of Ministers). Majority of applicable regulations are issued on the basis of the Law on Radiation Safety and Nuclear Safety, but some – based on other primary legal acts (e.g. the Cabinet Regulations on Procedures for Building of Facilities Related to Radiation Safety, No.600 (13.07.2004) were issued based on Construction Law, but the Cabinet Regulations on Radiation Safety Centre Statute, No.123 (15.02.2005) were issued based on State Administration Structure Law).

The third source of law for Latvia, as for any other EU member state, is Euratom law. This system in general is based on the Euratom Treaty and secondary legal acts, which are regulations, directives, decisions, recommendations and opinions on the basis of the Treaty issued by the EU Institutions (Commission or the Council), including also the case law – interpretation of treaties and institutional acts carried out by the European Court of Justice and the Court of First Instance. The whole body of EU law together is called the "*acquis communautaire*" and Latvia made all efforts to harmonize its national legislation with the legal provisions set in force within EU.

2. EU legislation

It should be mentioned, that to date no specific legislation on nuclear installation safety has been developed at EU level, and thus mainly legislation related to the radiation safety and emergency preparedness has to be harmonized within EU legal system. The relationships between the legislation adopted by Euratom and the national legislation of the Member States, are as follows:

- *the **regulations** have general application. Regulations are binding in its entirety and directly applicable in all EU Member States;*
- *the **directives** are binding to the Member States, as to the result to be achieved, but directives leave the choice of form and methods;*
- *the **decisions** are binding in its entirety upon those to whom it is addressed;*
- ***recommendations and opinions** are no binding.*

Consequently, relevant to the NSC, and enforced for Latvia and harmonised by Latvia are[3]:

1. **set of regulations** under the Euratom treaty, which are relevant to emergency preparedness, mainly concerning maximum permissible levels for contamination in food and feeding products – two groups of them:

[3] It is not the comprehensive list of all legal provisions under the Euratom Treaty, because such will be presented by the Commission of the European Communities and also some legal documents are only partly relevant to the NSC, thus they are not mentioned in the Latvia's National Report

- post-Chernobyl,
- future accidents,

2. **some directives:**
   - Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation, OJ L-159 of 29.06.1996;
   - Council Directive 90/641/Euratom of 4 December 1990 on the operational protection of outside workers exposed to the risk of ionizing radiation during their activities in controlled areas, OJ L-349 of 13.12.1990;
   - Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency, OJ L-357 of 7.12.1989;
3. **some recommendations and communications**:
   - Communication 2006/C/155/02 from the Commission on Verification of environmental radioactivity monitoring facilities under the terms of Article 35 of the Euratom Treaty — Practical arrangements for the conduct of verification visits in Member States, OJ C-155 of 4 July 2006;
   - Commission Recommendation 2000/473/Euratom of 8 June 2000 on the application of Article 36 of the Euratom Treaty concerning the monitoring of the levels of radioactivity in the environment for the purpose of assessing the exposure of the population as a whole, OJ L-191 of 27.7.2000;
   - Council Decision 87/600/Euratom of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency, OJ L-371 of 30.12.1987;

National draft legislation is submitted to the Commission under the terms of the procedure laid down in Article 33 of the Euratom Treaty. The Commission gives an opinion on the national draft legislation in order to make sure that it is in conformity with the terms of the directive.

3. National legal acts

The main approach used in Latvia is clear separation of responsibilities between operators and regulatory authority maintaining at the same time high level of professionalism and availability of technical tools in order to ensure and to verify safety. The main implementation requirements are defined in regulations, there are used as pre-requisites for applications and incorporated into licensing conditions. The operator has to have comprehensive set of safety and QA/QC related requirements in internal documents for facility. The RDC controls how these provisions and requirements are fulfilled.

Latvia applies *the top to bottom* approach in developing our nuclear legislation – preparation a set of legal documents. In the initial phase (early 90-ies) international agreements ratified by the parliament were used as the legal background (including decisions by the parliament about responsibilities). In 1994 the first framework law was adopted and several regulations approved by the Cabinet were introduced, but there was still situation with two regulatory systems (under the former Ministry of Environment Protection and Regional Development and under the former Ministry of Welfare). In late 2000 the Parliament approved the next law, which introduced a single regulatory authority and this act also was used to elaborate and to amend several regulations to cover gaps and to manage the comprehensive legal and institutional system.

In summary regarding legislative and regulatory framework it could be recognised, that recommendations by IAEA (GS-R-1) are implemented in Latvia. External assessment of the situation was done in 2007, when Latvia had IAEA RASSIA mission, which made an assessment of entire regulatory system. The main outcomes are as follows:

1) there is a comprehensive legal infrastructure;
2) there are needs for minor amendments in legal documents and in working practices to be fully in line with IAEA BSS.

Article 8: Regulatory body

Radiation Safety Centre of State Environmental Service executes the radiation and nuclear safety supervision and authorisation for all facilities. RDC has legal rights and duties for enforcement of applicable regulations – there had been few cases for suspension and modifications of licenses due to violations of relevant provisions and conditions of licenses by their holders.

The Parliament delegated the regulatory functions to the Radiation Safety Centre, which is a single regulatory authority in field of radiation and nuclear safety. 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.

RDC is central structural unit of State Environmental Service, which is supervised by the Ministry of Environment. 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.

As mentioned above, regulatory framework in Latvia regarding IAEA recommendations (GS-R-1), has been assessed by RASSIA mission in 2007. The main outcomes are as follows:

1) there is a comprehensive legal infrastructure;
2) the regulatory body is established and functionally independent;
3) regulatory body has an organisational structure and size commensurate with the extent and nature of facilities and activities it must regulate.

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 RDC also has been reduced. Negative trends identified in previous report remain the same – outflow of qualified personnel due to non-adequate salary level, lack of interest for students to apply for jobs in state institutions. As far as there is high probability that budget expense will be reduced also in 2011, there is some degree of uncertainty regarding future activities and status of RDC.

Article 9: Responsibility of the licence holder

For any facility with radiation sources in Latvia is applicable civil liability regime, which was developed, based on legal provisions from Vienna Convention on Civil Liability. There is clear statement in the Law – only operator is liable. Thus it is assumed, that recommendation from IAEA safety standard GS-R-1 2.3 – "*The prime responsibility for safety shall be assigned to the operator [licensee]. The operator shall have the responsibility for ensuring safety in the siting, design, construction, commissioning, [and] operation.*" is fully implemented.

According to the Law on Radiation Safety and Nuclear Safety, the main person in any facility is the Job Supervisor, who bears major License Holder functions, prescribed by the Law. License holder shall nominate the Job Supervisor, who has to be certified. RDC leads the work of Certification Commission, which includes also experts from professional associations and educational centres. Certificates are issued by RDC, based on positive opinion from the Commission. There are several functions prescribed directly by the Law and in more details by relevant regulations.

The operator shall demonstrate to the RDC that this responsibility for safety has been met and will continue to be in compliance of all relevant requirements. RDC's inspectors verify safety situation at all facilities and RDC has power to request (usually these issues are included in inspector's findings) any relevant safety upgrades. Moreover, during the re-licensing activities, the operator has to demonstrate by reports, programs for activities etc., that facility is safe to continue operations.

To enable that the RDC performs its functions, the operator shall provide necessary assistance and, definitely, shall grant access to the plant and all relevant documentation. When so required by the RDC (it had been some cases where occupational exposures seem higher than dose constrains, also few cases with non-compliances), the operator shall undertake special analyses, tests and investigations to demonstrate that exposures are controlled (only TLD badges received higher doses) or non-compliances are recognised and will be eliminated.

Chapter 2 (c) of the Convention – General Safety Considerations

Article 10: Priority to safety

National BSS lay down the principle for Radiation safety and nuclear safety – priority of protection measures in comparison with other measures.

In order to fulfil the requirements (set out in the quality assurance programme, currently, where it is possible RDC are trying to introduce comprehensive management systems for operators, but many small operators are not capable to do so in full form according the IAEA relevant recommendations) the operator shall budget the financial resources required for the performance of protection measures and regularly take inventory and examine material resources.

For all large facilities there is a requirement to establish radiation safety unit, which shall be independent from routine operations of the facility. Composition and number of staff for such radiation protection units are prescribed by regulations.

Plans for any activities that may directly affect the safety have been submitted by the operator to the RDC for approval, if so required, or in majority of cases had been discussed with inspectors. In some cases, when activities are proposed, but are not included in the normal procedures, special procedures had been written in accordance with established administrative procedures by operator and then agreed with RDC.

Verifications of these actions are performed by RDC during inspections and licensing.

Implementation of recommendations from NS.R.2: "*Consideration shall be given to … review of the overall safety performance of the organization in order to assess the effectiveness of safety management and to identify opportunities for improvement*", unfortunately, is in early stage – based on recommendations made by WENRA RDC strives to make self assessment of its effectiveness, after that more systematic assessment will be done.

Article 11: Financial and human resources

Research Reactor and Radioactive Waste Disposal are mainly financed from the State Budget (there are some incomes from services and from tax on utilisation of natural resources for waste disposal). The Ministry of Environment explains and gives proof to the Government concerning adequate funding for each fiscal year and long-term programmes

For the specific project – decommissioning of the research reactor, the Parliament or Government approves special funds or investment projects.

Since late 2003 the system for certification of radiation safety officers (job supervisors) are emplaced. This system ensures that all leading persons have to have adequate education and training and have to undergo regular re-training. Before this certification system the similar requirements had been used during the licensing process (in examination of applications).

For other personnel of facilities, the operator has prime responsibility to ensure qualification, training and re-training. Three universities have special programs for re-training of different groups of radiation workers.

Article 12: Human factors

The prevention of human errors is set up in National BSS (for example, requirements for defence in depth, quality assurance programmes etc.).

Another type of activities to reduce possibilities for human failures is introduction of the system for marking (regulations). RDC continues to request that all safety relevant information should be available for operators in the national language.

Licensing Regulations and National BSS require adequate staff training; set up educational requirements for experts. The licensing procedure requires the applicants to submit also information about available staff and their level of education.

Verification of activities is performed by RDC during inspections (annual plan for RDC is around 400 inspections). Findings from inspections are used to impose additional requirements for the licensees and also in licensing conditions during the re-licensing.

Article 13: Quality assurance

The Quality assurance programmes are requested by the national BSS. Any facility (especially "facilities of state significance") is requested to have QA and QC programmes. QA 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 regulations related to the criteria for applicants[4] the potential operator shall:

- "ensure that the qualifications of employees and the supervisor conform to the duties to be performed",
- "ensure the development of a quality assurance programme and quality control programme".

During the assessment of applications the Commission for licensing is examining the documents submitted by the applicant. According to the regulations on licensing procedures[5] one of the main documents is – "a quality-assurance programme and quality-control programme for operations with sources of ionising radiation".

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

Article 14: Assessment and verification of safety

The national regulations (Regulations on Protection against Ionising Radiation, No.149 (09.04.2002) and Regulations on the Procedure of issuing of a Special Permit (Licence) or Permit for Activities involving Ionising Radiation Sources and Procedure for Public Dispute on the Establishment of Ionising Radiation Facilities of State Significance or on Essential Modifications thereto, No.301 (03.07.2001)) require, that in order to be authorized, the following tasks shall be ensured:

- Examination and approval of plans for installations and of the proposed siting,
- Acceptance into service of the installations,
- Examination and approval of plans for the discharge of radioactive effluents.

[4] The Cabinet Regulations on the Criteria in order to require a Special Permit (Licence) or Permit for Activities involving Ionising Radiation Sources, No.290 (03.07.2001)

[5] The Cabinet Regulations on the Procedure of Issuing of a Special Permit (Licence) or Permit for Activities Involving Ionising Radiation Sources and Procedure for Public Dispute on the Establishment of Ionising Radiation Facilities of State Significance or on Essential Modifications thereto, No.301 (03.07.2001)

There are similar provisions also in the Council Directive 96/29/Euratom, which requires that Member States shall require prior authorization in particular for the operation and decommissioning of any facility of the nuclear fuel cycle and exploitation and closure of uranium mining.

The general public and any municipal or other institution in respective regions should have 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 or radiation 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 BSS prescribe the duties for RDC in the field of inspections. Practical activities are reglamented by internal document of RDC "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 RDC) shall be developed to ensure knowledge for operators about working procedures of regulatory authority.

RDC inspectors carry out verification of safety on regular basis and also perform non-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 renewal of licenses for the practices with sources of ionising radiation each 3 years (there are some exemptions for small risk facilities – 5 years, if previous safety records are acceptable). This system was introduced mainly due to the fact, that both – regulator (RDC) and operators (for nuclear facility – BAPA) have very limited capabilities to make full safety assessment, thus re-licensing together with frequent inspections and environmental impact assessments for major modifications provides additional assessments (mainly provided by external experts from countries with developed nuclear power systems).

Article 15: Radiation protection

1. Legal provisions

The Law "On Radiation Safety and Nuclear Safety" introduced these basic principles of limitation and optimisation. Verification of compliance is a duty for RDC, which also provides as services the occupational exposure control for all radiation workers in country and maintains relevant database. These requirements are further elaborated in National BSS.

As regards practices involving a risk from ionising radiation for the population, the Law requires to apply the fundamental principles governing operational protection of the population. In particular:

1. the public and the environment may not be exposed to a dose of ionising radiation which exceeds the established dose limits;
2. the positive results achieved shall exceed the negative impact or loss caused by practices involving ionising radiation sources;
3. optimum radiation safety measures are chosen, taking into account economical and social circumstances, as well as technical capabilities, so that the exposure level is reasonably low and does not exceed the established dose limits;
4. workers, who carry out practices involving ionising radiation sources, are insured against occupational accidents and illnesses, as well as the operator's civil liability for damage that may be caused to a third party and its property or the environment;
5. practices involving ionising radiation sources may only be conducted upon receipt of a special permit (licence) or permit, except for circumstances prescribed by the Cabinet of Ministers regulations.

2. Implementation measures

2.1. Radiation dose limits

Regarding dose limitation the National BSS, which were elaborated based on IAEA BSS and EU Basic Safety Standards Directive, set out dose limits for exposed workers, for apprentices and students and for members of the public. The limits are the same as in IAEA BSS and in EU Basic Safety Directive.

There are ongoing investigations around the major radiation facilities and in different regions of country to assess and monitor public exposures. Addition to these activities, based on requests from individual persons, in few cases from other authorities, the RDC made task oriented investigations at certain regions where was practices with radiation sources in the past or was suspicious about naturally enhanced radiation.

2.2. Fulfilment of conditions for the release of radioactive materials

RDC has responsibility to examine and approve the plans for installations involving an exposure risk, and of the proposed siting of such installations from the point of view of radiation protection. The data about assessment of the risks, including planned releases, shall be submitted by the applicant prior to receiving of authorization. Facilities, which may release radionuclides into the environment, have to prepare plans for control of such releases and they have to provide regular reports to the RDC.

There is very limited utilization for the controlled releases – only one hospital (Latvian Oncology Centre) is authorized to release short-lived isotopes (mainly I-131 after decay storage) together with the sewage water.

Another option for controlled releases is the clearance – regulations[6] provide possibilities for operators to discharge (mainly together with solid waste or as re-usable materials) some amount of radioactivity.

Verification of the radiation conditions around facilities, which discharge radioactivity, is under the national environmental monitoring program. The requirements for radiation monitoring under environmental monitoring program were introduced also to fulfil Article 35 of the Euratom Treaty.

Environmental monitoring includes:

- routine measurement of radioactivity in air, water, soil and biota;

[6] The Cabinet Regulations on practices involving radioactive waste and related materials, No.129 (19.03.2002)

- provisions in case of radiological emergencies (alarms and data collection).

Article 16: Emergency preparedness

1. General provisions

For any new nuclear and radiation 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 by the licensing commission before RDC grants the license.

National BSS prescribes main duties for job supervisors regarding emergency preparedness.

For management of accidents the national Emergency Preparedness Plan is established and relevant regulations[7] were adopted. The Plan has requirements for regular testing (including theoretical exercises, table top exercises and practical exercises) and updating of the Plan. Last national exercise aimed to test in real time communication systems and decision-making process was done in 2003.

Representatives from the State authorities participate also in similar events in neighbouring countries and RDC participates in different international exercises.

The National Emergency Plan provides basic principles for emergency preparedness according to radiation and nuclear safety legislation.

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).

Description on Emergency preparedness at facility level is a pre-requisite for licensing and verification of the compliance with these provisions are made during the inspections.

2. Implementation measures

2.1. Bilateral agreements and arrangements

Latvia has some bilateral agreements for early warning and assistance in case of radiological or nuclear accidents (with Lithuania and Ukraine on governmental level, with Estonia and Lithuania on level of regulatory authorities) and also agreements for cooperation in case of natural and man-made accidents (including radiological) with several countries (Belarus, Estonia, Hungary, Lithuania and Sweden).

2.2. National emergency preparedness plan

The State Fire-Fighting and Rescue Service shall notify and warn residents in the event of a radiological emergency by using the mass media and the notification and alarm system. Upon the recommendation of the State Environmental Service Radiation Safety Centre, the State Fire-Fighting and Rescue Service shall immediately provide information to the residents who have suffered in the radiological emergency.

Taking into account the character and scale of the possible radiological emergency, each year the State Fire-Fighting and Rescue Service in co-operation with the State Environmental

[7] The Cabinet Regulations on preparedness and response in cases of radiation accidents, No.152 (08.11.2003)

Service Radiation Safety Centre shall provide information regarding the possible impact of ionizing radiation on residents and the environment and radiation protection measures to managers and employees of such institutions and commercial companies that may be involved in the organization and performance of protection measures in the event of a radiological emergency.

An operator in cooperation with the local government, in the territory of which the relevant object is located, and the State Fire-Fighting and Rescue Service are responsible for planning the protection measures in the event of a radiological emergency.

As stated in introduction of the Report, Latvia's major concern is the Ignalina NPP in the vicinity. According to the Law on Civil Protection System, the main institution responsible for planning and implementation these functions is Fire Rescue Service.

2.3. Information activities

Latvia also introduced requirements according the Council Directive 89/618/Euratom, which deals with informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency. The Directive specifies two types of information that has to be given to the members of the public:

- preventive information to be given to the population groups for which Member States have drawn up intervention plans in the event of a radiological emergency;
- information in the event of a radiological emergency to be given to the population groups actually affected in the event of a radiological emergency and for which specific protection measures are taken.

In 2008 special leaflet was drafted and published in cooperation with Lithuanian regulator for residents of region close to Ignalina NPP in order to inform on activities related to shut-down of NPP and how these activities will affect residents.

2.4. Early Warning

Since 2001 RDC participates in *EURDEP (European Radiological Data Exchange Platform),* which is both a standard data format and a network for the exchange of environmental radiation monitoring data between European countries in real-time. Participation of the Latvia is based on the Recommendation 2000/473/Euratom. RDC made available the national radiological monitoring data for JRC Ispra and has access to the data of all other participating countries. The system is continuously operating with a daily data exchange routine and there is a general consensus that participating in the system automatically means that the data transmissions will continue during an emergency in an elevated frequency.

Moreover, under the system established by the Baltic See Council (Agreement on the Exchange of Radiation Monitoring Data), RDC provides data also in two other formats (as called NORDIC and PMS), which provides expansion of data exchange in users-friendly formats among countries, which operate similar type of monitoring stations. The existing communication arrangements are based on FTP protocol.

In parallel with EURDEP RDC participates in ECURIE program, which (similarly as system under Early Warning Convention – ENAC) is a 24h emergency notification and information exchange system. ECURIE system notifies the competent authorities of the participating States and the Commission in case of a major nuclear accident or a radiological emergency. During an emergency the system provides an information exchange platform for the participating States in order to inform about the current and foreseeable status of the accident,

meteorological conditions, national countermeasures taken, etc. The legal basis for participation in ECURIE by the EU Member States is the EU Council Decision 87/600/Euratom. The Commission is responsible for ECURIE management and development. The Commission maintains a 24h preparedness service in order to activate the system in the event of a nuclear or radiological emergency.

Chapter 2 (d) of the Convention – Safety of Installations

Article 17: Siting

Currently, there is no specific legislation applicable for the siting of nuclear installations in place. In general, this part is not directly applicable to Latvia, but with respect to research reactor and radioactive waste disposal, some brief information is provided below:

- Law on Environmental Impact Assessment covers these activities.
- Other safety assessment requirements are partly elaborated in Licensing regulations and new Regulations on building of radiation facilities.

The Law on Environmental Impact Assessment and Regulations on building of radiation facilities governs these activities. The Government decided on composition of dedicated Commission, which is led by the Ministry of Environment. The Commission has to make opinion about proposal for special building activities and RDC on the safety considerations.

The Law on Environmental Impact Assessment prescribes requirements for assessment of impact of proposed nuclear facilities on the environment.

The Radiation Safety Board (advisory body for the Government and for regulatory authority) has to make preliminary assessment of the proposal and additional evaluation after the EIA is finished.

The mechanism of public hearing is established by licensing regulations. Based on opinions from the EIA, and Radiation Safety Board, the RDC can decide on subject and issues the license.

According to Licensing Regulations the operational license could be granted for three years period. During the application process for renewal of operational license the operator (or job supervisor) shall submit all safety relevant information.

According to National BSS the supervision of radiation and nuclear facilities is a continuous process; therefore inspectors together with operators shall re-evaluate safety related information during the inspections of facilities.

Unfortunately, the Ignalina NPP has been built up and operated without prior negotiations with Latvia. With respect to modifications at INPP, the Lithuania used method of prior consultations (e.g. in year 2005-2007 about modifications in waste management technologies, environmental assessment program about the plans for the NPP by Lithuania – 2007).

All national plans on emergency preparedness in both countries (Latvia and Lithuania) had been jointly tested and further developed. Both countries collaborate also in other activities related to safety assessments.

Based on Law on Environmental Impact Assessment, any facility with potential impact to other countries shall be jointly assessed and relevant information shall be provided. But as stated in Introduction, there are no plans for building of NPP in Latvia, therefore these provisions had not been realised in practice for such facilities. Some more details on the processes for EIA are also described in the Agreement between Latvia and Lithuania on cooperation in field of Environmental protection.

Article 18: Design and construction

The Law on Radiation Safety and Nuclear Safety set up the responsibility for safety (strict liability of operator) and requirements regarding emergency preparedness. These requirements are more detailed elaborated by National BSS and some provisions in regulations concerning physical protection.

The main requirements for such installations are:

- The design and construction of a nuclear installation (and also any radiation facility) shall provide several reliable levels and methods of protection (defence in depth) against the release of radioactive materials.
- Any proposal for new facility shall to prevent the occurrence of accidents and to mitigating their consequences should they occur.

Prevention of errors is set up by National BSS (example requirements for defence in depth, quality assurance programmes etc.).

Provisions for construction are only partly incorporated in national nuclear legislation because new nuclear facility is not planned. Up to now the basic requirements regarding certification and testing of any equipment relevant to the radiation safety are used. These requirements are introduced for any facility and system is based on initial assessments (in licensing process), regular tests (by license holder, part of QA/QC) information is provided to RDC annually and by inspections with random measurements of some technical parameters.

The prevention of human errors on legal level is set up in National BSS (requirements for defence in depth, calibration of equipment, quality assurance programmes etc.). In general legislation these implementation procedures are described in Law and Cabinet Regulations on Conformity Assessment. Implementation measures are assessed during the licensing and verified by inspections.

Article 19: Operation

These provisions are only partly incorporated in national nuclear legislation because new nuclear facility is not planned. The operational limits and conditions in general is the part of licensing conditions, which are under considerations during the licensing. New conditions and working limits can be introduced on ad-hock base if operator request so or based on findings from inspections. The regular updates of these conditions are introduced during the re-licensing process.

The Law on Radiation safety and Nuclear Safety sets up the requirements for licensing of facilities of State Significance and more detailed elaborated by Licensing Regulations. In 2004 the new supplementary regulations in this field had been elaborated under the law on Building activities.

The Licensing Regulations requests the job supervisor to provide all safety related information together with application for a license. Based on this information and other decisions with respect to building activities and outcomes from environmental impact assessments, the RDC has to decide about licensing and conditions of licence.

Main part of provisions for operation safety is covered by National BSS, more detailed (internal) requirements are elaborated into Regulatory provisions of RDC.

The National BSS sets up the basic requirements for the operator. These procedures shall be elaborated in working manuals and procedural documents developed by facilities. Assessments of them are done during the licensing process and inspectors verify implementation and registration of them.

Owners and operators (job supervisor) are responsible to ensure engineering and technical support according to the National BSS. Applicants for license shall describe how auxiliary services will be ensured (usually applicant provides information about relevant service contracts). As mentioned early, the license usually is granted for 3 years and thus re-assessment is done periodically and additional requirements can be added. Verification of the situation is done by inspections.

Testing of installations shall be managed according the requirements for calibration and testing activities based on legal acts for them and in more details elaborated in QA manuals for any entity dealing with tests and measurements.

Law on Radiation Safety and Nuclear Safety, National BSS, Regulations on preparedness and response in case of radiation accident, Regulations on physical protection and Regulations on State Accounting and Control of Nuclear Materials set up requirements on immediate reporting about accidents and incidents.

Only part of provisions with respect to information exchange among users of similar equipment and methodologies, practices exist in national BSS. To facilitate such processes (in realisation of task prescribed by the Law on Radiation Safety and Nuclear Safety) RDC organises discussions with representatives from professional associations and main operators dedicated to separate issues few times per year (working group meetings, seminars etc.).

RDC maintains relevant databases, which include inspection findings and also files for each operator, which contains all relevant information and also results from tests and calibrations.

With respect to international exchange of information, the RDC coordinates participation of experts from Latvia in relevant international forums and strives to publish technical documents and recommendations (in form of books and some quotes also on Internet home page).

Any operator, which could generate radioactive waste, provides annual reports and plans, which are analysed by RDC. During the licensing process requirements for radioactive waste management are prepared and, if needed, included in the license conditions. Verification of compliance with these waste management requirements are made during the inspections.