REPUBLIC OF ESTONIA
MINISTRY OF THE ENVIRONMENT

REPORT

ON THE IMPLEMENTATION OF THE DIRECTIVE 2014/87/EURATOM OF 8 JULY 2014 AMENDING DIRECTIVE 2009/71/EURATOM ESTABLISHING A COMMUNITY FRAMEWORK FOR THE NUCLEAR SAFETY OF NUCLEAR INSTALLATIONS

Tallinn, Estonia

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1. Introduction

Estonia is a state in the Baltic region of Northern Europe with a population of 1,32 million. The territory of Estonia covers 45,227 km2. Estonia is a Member State of the IAEA since 1992 and of the European Union from 1st of May 2004.

Thus, EU directives in the field have been transposed to national legal and administrative framework in Estonia. When necessary, Estonian legislation is amended and modified to take into account the new EU directives and their amendments. In 2011, the requirements of the European Council Directive 2009/71/Euratom were transposed into Estonian legislation and in 2017 were amendments made for transposition of Council Directive 2014/87/Euratom. As required under Article 9.1 of Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations, as amended by the Council Directive 2014/87/Euratom of 8 July 2014 (hereinafter, the Directive), Member States have to submit report to the European Commission on the implementation of this Directive by 22 July 2020.

There are no nuclear power plants or facilities operating with nuclear fuel cycle in Estonia, neither are any activities related to nuclear fuel cycle performed. According to the Radiation Act Article 79, a radiation practice licence for the operation of a new nuclear facility can be applied for after the Riigikogu (Parliament) has adopted a decision on commissioning of a nuclear facility. Estonia has no nuclear installations according to the definitions of the Directive's Article 3.1 a) and b).

There is a former Soviet military facility with two shut-down nuclear submarine reactor compartments in safe long term storage in Paldiski. Spent nuclear fuel was sent back to Russia in 1994. There is also a centralized facility for interim storage for the low and intermediate radioactive waste in the same location as reactor compartments in Paldiski and facilities for treatment and conditioning of radioactive waste (*hereinafter Paldiski site*). Based on discussion with the European Commission, the Paldiski site does not directly fall within the scope of the Directive, except for the decommissioning aspects.

The preliminary studies[1] of the decommissioning of the reactor sections of the former nuclear site in Paldiski and final disposal facility, were completed in 2015. In the Preliminary Study, it's recommended to start with decommissioning not later than in 2040 to avoid unnecessary risks, so the only way to safely store radioactive waste is to establish a final disposal facility in Estonia. The Government of the Republic made the decision to establish a final disposal facility in Estonia at the cabinet meeting of 28 April 2016. According to the decision, Ministry of Environment in cooperation with Ministry of Economic Affairs and Communications will coordinate the preparation of local government designated spatial plan, impact assessment and also to financial resources for these activities.

04.04.2019 approved the Minister of the Environment by the Decree that financing, on the basis of pre-activities necessary for the construction of a final disposal facility, are secured for period 2019-2023. The necessary activities are carrying out environmental and radiological research, management of radioactively contaminated metal waste, preparation of local government designated spatial plan and impact assessment.

In the moment there no decommissioning activities started yet (the project is currently in the state of organizing an international public procurement) and to proceed planned activities, is necessary to improve national framework and supplement regulations with provisions required to safe decommissioning.

[1] https://alara.ee/wp-content/uploads/2018/08/kodulehtPaldiskieeluuringudlopparuanneIngl.pdf

Therefore, as mentioned above, Paldiski site does not directly fall within the scope of the Directive and Estonia has implemented the requirements of the Directive at general level.

The present report gives an outline of the implementation process of the Directive and sets out measures adopted by Estonia to fulfil the relevant obligations. The report has been prepared in accordance with the ENSREG Reporting Guidelines [2].

2 http://www.ensreg.eu/sites/default/files/attachments/ensreg_reporting_guidelines_on_the_eu_nuclear_safety_directive_0.pdf

2. Article–by–article review

2.1 Article 4 Legislative, regulatory and organisational framework

1. Member States shall establish and maintain a national legislative, regulatory and organisational framework ("national framework") for the nuclear safety of nuclear installations.
The national framework shall provide in particular for:
(a) the allocation of responsibilities and coordination between relevant state bodies;
(b) national nuclear safety requirements, covering all stages of the lifecycle of nuclear installations;
(c) a system of licensing and prohibition of operation of nuclear installations without a licence;
(d) a system of regulatory control of nuclear safety performed by the competent regulatory authority; (e) effective and proportionate enforcement actions, including, where appropriate, corrective action or suspension of operation and modification or revocation of a licence.

The determination on how national nuclear safety requirements referred to in point (b) are adopted and through which instrument they are applied remains within the competences of the Member States.

2. Member States shall ensure that the national framework is maintained and improved when appropriate, taking into account operating experience, insights gained from safety analyses for operating nuclear installations, development of technology and results of safety research, when available and relevant.

In Estonia, radiation safety activities are organized by the Ministry of the Environment within its area of competence through the Environmental Inspectorate and the Environmental Board by engaging other appropriate agencies for this purpose and by taking into account field-specific operational experience, results of decision making procedures, development of relevant technology and scientific researches.

Radiation safety requirements are developed mainly in cooperation between the Ministry of the Environment (including subdivisions Environmental Board, Environmental Inspectorate), Ministry of Social Affairs (Health Board, hospitals), Ministry of Interior (Police and Border Guard Board, Rescue Board, Estonian Internal Security Service), Ministry of Finance (Tax and Customs Board), Ministry of Economic Affairs and Communications (radioactive waste management agency A.L.A.R.A. Ltd). Authorities have signed bilateral agreements for cooperation. In practice, many cooperation and coordination tools are being used, e. g memorandums, meetings, joint inspections, ad hoc working groups for policy planning and legislative drafting.

All relevant authorities have their own statutes, where are described all responsibilities and tasks. Statutes of Ministry of the Environment and its sub-authorities, Environmental Board and Environmental Inspectorate, are as follow:

1. Regulation of the Government No 186 of 10.12.2009 "Statute of the Ministry of Environment" (amended on 1 June 2019)[3];
2. Regulation of the Minister of the Environment No 13 of 20.05.2014 "Statute of the Environmental Board" (amended on 7 October 2019)[4];
3. Regulation of the Minister of the Environment No 12 of 31.03.2008 "Statute of the Environmental Inspectorate" (amended on 1 February 2020)[5].

Main legal acts to govern radiation protection and safety are the General Part of the Environmental Code Act[6] and Radiation Act. First Radiation Act entered into force in 1997. Current version of Radiation Act was adopted in 2016 and the latest amendments entered into force in June 2020. On the basis of

[3] https://www.riigiteataja.ee/akt/121052019002
[4] https://www.riigiteataja.ee/akt/104102019005
[5] https://www.riigiteataja.ee/akt/116012020010
[6] https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/509012020005/consolide

and for the compliance with the Radiation Act 15 regulations are issued. Radiation Act consists of 11 chapters. The General Part of the Environmental Code Act entered into force in 2014.

Amendment of the Radiation Act and its regulations in period 2017 - 2020 are made due to the transposition of Council Directive 2014/87/EURATOM of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations, Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionizing radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom as well as to implement the IAEA 2016 IRRS and 2019 IRRS follow-up missions findings. In addition, processes related to the proceeding of applications of radiation practice license were clarified to minimize administrative burden to applicants and administrative authorities. The latest amendments to the Radiation Act[7] entered into force in June 2020.

Radiation Act and its regulations provide basic safety requirements for the protection of people and the environment against the adverse impact of ionizing radiation; the rights and obligations of persons in using ionizing radiation; the requirements for radiation practices; the organization of state supervision over compliance with the requirements provided for in current Act and also the liability for failure to comply with the requirements provided in this Act. The Radiation Act stipulates requirements for radiation practices, prescribes authorization system of radiation practice, and establishes the inspection body, who exercises state supervision over radiation safety, supervision measures and defines the misdemeanors related with radiation practices and radioactive sources.

The use of radiation source requires a radiation practice license which is granted by the Environmental Board upon application. Radiation source is defined as an apparatus, radioactive substance or installation capable of emitting ionizing radiation or radioactive substances. According to the definition given in Article 4 of the Radiation Act, radiation practices are any activities which increase or may increase the exposure of people to radiation emanating from artificial or natural sources of radiation. Such activities are, inter alia:
1) production, processing (processing means chemical or physical operations on radioactive material including the mining, conversion, enrichment of fissile or fertile nuclear material and the reprocessing of spent fuel), use, possession, holding, storage, transportation, including import and export, and intermediate storage or final disposal of radioactive substances;
2) use of any electrical equipment emitting ionizing radiation and operating at a potential difference of more than 5 kilovolts;
3) operation of nuclear facilities.

The Article 68 of the Radiation Act sets forth the activities for which a radiation practice licence is obligatory:
1) exploitation, closure and decommissioning of any facility of nuclear fuel cycle;
2) production, use, storage and transportation of radioactive substances and products containing it, including for importation and exportation;
3) use and storage of electrical radiation apparatuses;
4) management and transportation of radioactive waste;
5) activities related to the presence of increased natural exposures in the case of which the exposure caused by natural radionuclides is important from the radiation safety point of view.

According to the Article 34 (1) of the Radiation Act, radiation practices are divided into the following risk categories depending on the risk presented by the radiation practice or the radiation source:

[7] https://www.riigiteataja.ee/en/eli/529052020001/consolide

1) low risk radiation practices during which an exposed worker incurs or may incur an effective dose of up to one millisievert per year;
2) moderate risk radiation practices during which an exposed worker incurs or may incur an effective dose of up to six millisieverts per year;
3) high risk radiation practices during which an exposed worker incurs or may incur an effective dose exceeding six millisieverts per year.

In addition to the provisions of Article 34 (1), a radiation practice is of high risk if the radiation practice licence is applied for:
1) radiation practices related to high-activity sources;
2) operation of nuclear facilities;
3) exploitation, closure and decommissioning of any facility of nuclear fuel cycle;
4) intermediate storage or final disposal of radioactive waste.

In determining the terms of the licence, and in amending or revoking of the licence, the Environmental Board proceeds from the specific radiation practice, taking into account the main principles of radiation safety. When granting of a radiation practice licence, it can be subject to additional terms to ensure safety. The terms of the licence shall be weighted and justified based on the Radiation Act and the Administrative Procedure Act[8]. According to the Article 76 of the Radiation Act a radiation practice licence is issued, in the case of moderate and high risk radiation practices, for a term of up to five years. For low risk radiation practices the licence is issued for an unspecified term. Since the Radiation Act does not provide for the extension of the radiation practice license, a new licence needs to be applied for to continue radiation practice.

The Article 70 of the Radiation Act describes the scope of the application. In order to obtain a radiation practice licence, an applicant shall submit an application to the Environmental Board with the following information and documents:
1) data which characterize the radiation source and technology used and the equipment;
2) data on radioactive waste or emissions generated during radiation practices, the management thereof and waste packaging compliance criteria and radioactive waste storage premises;
3) recovery plan of radiation source after the termination of use of the radiation source;
4) upon application for a license for management, intermediate storage and final disposal of radioactive waste, data on the management or methods of final closure of repositories for radioactive waste;
5) radiation safety assessment, which gives an overview of the aspects of radiation practices which are related to the protections of people and safety of radiation sources, including of the protective and safety measures used, and of the potentially assessed doses of exposed workers and members of the public both under normal working conditions and in the cases of accidental and existing exposure situations, to which data on measures adopted to ensure radiation safety are appended;
6) in the case of moderate and high risk radiation practices, dose constraints on annual equivalent or effective doses of exposed workers and effective doses of members of the public upon proposed radiation practices under normal working conditions;
7) emergency response plan to emergency exposure in the case of radiation practices involving high risk which is based on the assessment of potential exposures;
8) financial collaterals required for recovery of radioactive sources, equipment containing thereof and radioactive waste;
9) description of the radiation safety quality management system;
10) data on exposed workers and their professional training;

[8] https://www.riigiteataja.ee/en/eli/527032019002/consolide

11) radiation work rules, which must contain activities for the use of a radiation source, discontinuation of the use thereof and activities related thereto depending on the specific character of the radiation work;
12) plan for radiation monitoring and data on the equipment used for radiation monitoring;
13) the plan of the location of the activity and the site map of the installation, plans of rooms where the radiation sources are located including adjacent rooms thereto, and specification of the application of these rooms.

An application for a radiation practice licence together with the annexes thereto shall be submitted to the Environmental Board through the Information System for Environmental Decisions and the application shall be certified by digital signature.

The data and content of the documents to be submitted when applying for the radiation practice license are specified in Regulation No 60 of the Minister of the Environment, "Detailed requirements for applications for radiation practice licenses, lists of data of applications and radiation practice licenses, and lists of data characterizing radiation sources used to keep lists of nuclear materials" . The Regulation No 60 of the Minister of the Environment describes formal requirements:
1) for proceedings for the application of the license (applying, amendment and open proceedings);
2) for the content for the application of the license;
3) for the content for the license.

Upon receiving an application to amend the radiation practice license, the Environmental Board reviews the data and documents submitted by the applicant and, if needed, checks their conformance to the actual situation pursuant to the Regulation No 60 of Minister of the Environment. If the issuer of the licence imposes a deadline for the applicant to remedy deficiencies or submit specifying data on the materials of the application, the deadline for the processing the application will be extended by the time of remedying the deficiencies or submitting specifying data. If the applicant fails to do so by the term given, the issuer of the license will return the application without review within 5 days after the deadline. Where a change is critical from the perspective of radiation safety, the Environmental Board may require that the holder of the license submits an application for a new radiation practice license. The specialists of the Environmental Board have access the location of radiation practice and its surrounding area during the licensing process.

The provisions of open proceedings are applied to the procedure of granting and amending radiation practice licenses (pursuant to Section 71 of the Radiation Act) if a radiation practice license is applied for the following activities:

1) exploitation, closure and decommissioning of any facility of nuclear fuel cycle;
2) activities related to the presence of increased natural exposures in the case of which the exposure caused by natural radionuclides is important from the radiation safety point of view;
3) management and transportation of radioactive waste.

The open proceedings are conducted in accordance with the requirements of General Part of the Environmental Code Act. According to the Section 47 and 48 of the General Part of the Environmental Code Act, the time and place of the public display of the application of the radiation practice license and draft of the radiation practice license shall be made known at least two weeks before the beginning of the public display in the official publication *Ametlikud Teadaanded* (Official Announcements[9]) and

[9] https://www.ametlikudteadaanded.ee/
The Official Announcements is an electronic journal that publishes all notices, invitations and announcements prescribed by the legislation. The website of the Official Announcements is freely accessible to everyone and new announcements are

the website of the Environmental Board. Within the time limit set by the issuer of a license, everyone has the right to submit to the issuer of the radiation practice license positions and questions on the publicly displayed application for the radiation practice license or draft administrative decision to be made thereon. The time limit must not be shorter than two weeks as of informing of the display.
The Environmental Impact Assessment and Environmental Management System Act[10] states, that environmental impact shall be assessed upon applying for development consent or for amending development consent whereby the proposed activity which is the reason for applying for or amending the development consent potentially results in significant environmental impact. Activities with significant environmental impact include also:

1) construction, dismantling or decommissioning of a nuclear power station or other nuclear reactors, except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load;
2) production or enrichment of nuclear fuel, processing or handling or final disposal of used nuclear fuel or disposal of used nuclear fuel for over ten years on a site other than the place of generation thereof;
3) handling high-activity radioactive waste, final disposal of merely radioactive waste or disposal thereof for over ten years on a site other than the place of generation.

The environmental impact assessment proceedings are laid down in the Environmental Impact Assessment and Environmental Management System Act and its regulations. The environmental impact assessment proceedings consist of the following stages:
1) the making of a decision to initiate or not to initiate environmental impact assessment, and notifying of the decision;
2) the drawing up of an environmental impact assessment programme, including determining the scope of the environmental impact assessment;
3) the assessment of the potentially significant environmental impact arising from the proposed activity and drawing up a report;
4) asking the authorities concerned for an opinion on the environmental impact assessment programme and report, and publishing the programme and the report, taking into account the characteristics of environmental impact assessment in a transboundary context;
5) verifying the compliance of the environmental impact assessment programme and report with requirements, making decisions to declare these compliant with requirements, and notification of the decisions;
6) taking the results of the environmental impact assessment into account upon making a decision to grant or not to grant development consent, and notifying of the decision.
The open proceedings of the environmental impact assessment are conducted in accordance with the requirements of General Part of the Environmental Code Act and the Environmental Impact Assessment and Environmental Management System Act.

Commencement of radiation practices or performance of radiation works which require a radiation practice licence without a radiation practice licence is prohibited.

published there on every business day, as they are issued. Since 1 July 2003, the Official Announcements is published only electronically. Announcements can be issued: 1) Electronically via the website; 2) From other information systems via the X-road system. Both private persons and agencies can issue official announcements. The person issuing the announcement is liable for its contents. Announcements can be read and issued only in Estonian.
[10] https://www.riigiteataja.ee/en/eli/509012020006/consolide

The main legal acts regulating supervision over radiation safety are the Environmental Supervision Act[11], Law Enforcement Act[12], Code of Misdemeanour Procedure[13] and Radiation Act. Pursuant to the Environmental Supervision Act, the Environmental Inspectorate executes environmental supervision in Estonia at the state level. Environmental Inspectorate coordinates and executes supervision of all areas of environmental protection and the use of natural resources, as well as conducts proceedings in environmental violations. The Environmental Inspectorate has direct access to all premises, buildings, etc., for inspection purposes and has granted a right to suspend operations in unsafe situations. The Environmental Inspectorate has the right to suspend unlawful activities damaging or dangerous to the environment, if such activities endanger the life, health or property of people. Under Chapter 9 of the Radiation Act, the Environmental Inspectorate exercises state supervision over radiation safety. Regarding radiation safety, the responsibility of Environmental Inspectorate is to implement measures provided by law for the prevention of illegal activities and implementation of mandatory environmental protection measures. Upon identification of practice not compliant with the Radiation Act, the Environmental Inspectorate initiates administrative or misdemeanour proceedings according to the procedure set forth in the Administrative Procedure Act and the Code of Misdemeanour Procedure. Inspectors have the right to apply enforcement measures (conduct proceedings in environmental violations, precepts, suspension or termination of illegal activities, penalty payment, substitutive enforcement etc.) if violation is found. Fines in case of radiation practice are imposed on the basis of the rates set forth in Chapter 10 of the Radiation Act and the Code of Misdemeanour Procedure. The Radiation Act establishes the Environmental Inspectorate shall conduct extra-judicial proceedings concerning the misdemeanour provided for in Chapter 10 and pre-trial proceeding of crimes. The radiation safety inspections of the Environmental Inspectorate are carried out either based on the work plan (an annual inspection plan is prepared collaboratively with the Environmental Board), in the course of control raids, or as a response to complaints. High-risk radiation practices are checked annually. The inspection of moderate and low-risk radiation practices is risk-based (taking into account the previous monitoring results, potential risks and Environmental Boards input). However, according to the work plan, inspections are performed with a frequency of at least once every three years for a moderate risk radiation practice and once every five 5 years for a low risk radiation practice. The following in-house documents have been composed to aid the inspection process: guidelines for drafting the work plan; guidelines for conducting inspections, including radiation practice inspection; check-lists for the inspection of various types of radiation practices. Basic features of an inspection of the holder of the radiation practice licence include verification of the data and conditions specified in the radiation practice licence. Where relevant, the data submitted in the application for radiation practice licence is checked stated in the Chapter 4 of the Radiation Act.

The Environmental Inspectorate maintains the object inspection database, which contains detailed results of the inspections. The object inspection database is established with the Regulation No 46 of the Minister of the Environment "Establishment of the object inspection database system and its statutes" pursuant to the Environmental Supervision Act. The Environmental Board have access to the object inspection database. In addition, the Environmental Inspectorate provides to the Environmental Board annual overview of inspections and its results.

The national legal framework for emergency preparedness, including nuclear and radiological emergency, is based on the Emergency Act[14]. A number of regulations specifying important requirements of the Act have been passed by the Government and by the Minister of the Interior. The Estonian emergency preparedness system is coordinated by and under the responsibility of the Minister of the Interior.

[11] https://www.riigiteataja.ee/en/eli/521032019008/consolide
[12] https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/508052020005/consolide
[13] https://www.riigiteataja.ee/en/eli/515052020001/consolide
[14] https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/516052020003/consolide

The Emergency Act provides the legal basis for crisis management, including preparing for emergencies and responding to emergencies as well as ensuring the continuity of vital services. The Emergency Act also governs the declaration, resolution and termination of an emergency situation, the involvement of the Defense Forces and the Defense League in resolving an emergency that has led to the declaration of an emergency situation, and state supervision and liability.

The Radiation Act provides more specific provisions of intervention needed in the case of a radiological emergency or an existing exposure situation. Safety principles are provided in the Chapter 8 of the Radiation Act: the implementation of intervention shall be justified so that the reduction in detriment caused by radiation outweighs the harm and costs of the intervention and also shall be optimized in form, scale and duration. Intervention levels and action levels, and reference levels for emergency occupational exposure situation, which constitute the basis for preparation of the national crisis management plan for responding to a radiological emergency and implementation of measures for protecting the public are provided by the Regulation No 95 of the Government "Intervention and action levels and reference levels of emergency exposure", which has been issued pursuant to the Radiation Act. It describes safety criteria to the public and emergency workers. For emergency workers, it clearly describes reference levels and requirements notifying emergency workers about possible risks and dangers to worker health during an intervention. Based on the Radiation Act participants in the intervention are the Rescue Board on the basis of and pursuant to the procedure provided for in the Rescue Act[15], the Police and Border Guard Board on the basis of and pursuant to the procedure provided for in the Police and Border Guard Act[16], the Environmental Board, the manager of radioactive waste participating in the intervention and, as appropriate, any other persons.

The Radiation Act is supported by a "National Radiation Safety Development Plan" (NRSDP)[17] which is a ten-year programme for development and enhancement of radiation and nuclear safety in Estonia. The NRSDP analyses the situation of radiation safety in the country, determines the measures for improvement of radiation safety and gives an assessment on how the development plan promotes pursuing of the objectives and principles of radiation safety and protection. The areas discussed in the NRSDP include in particular ensuring radiation protection and nuclear safety, radioactive waste management, responding to accidental and existing exposure situations, increasing radiation awareness and issues concerning natural and medical exposures. The first NRSDP was adopted in 2008 and covered the period until the end of 2017. The NRSDP for the period of 2018-2027 and its annexes (National Programme for Radioactive Waste Management (NPRW)[18], National Radon Action Plan[19] and the Action Plan for Implementing the NRSDP) (*hereinafter NRSDP 2018-2027*) are approved by Decree of Minister of the Environment. The objectives of the NRSDP 2018-2027 are improve the radiation safety infrastructure is; to minimize radioactive waste; improve emergency preparedness; optimize the use of radiation in medicine; reduce risks from natural radiation sources and to raise awareness amongst the Estonian public of radiation-related issues. The NPRW describes the institutions, technical and financial resources, and research and development activities for safe radioactive waste management, and provides sub-objectives, measures, and expected results of the field until 2050. The Action Plan for Implementing the NRSDP 2018-2027 is established for 4 year period for 2018-2021. The second Action Plan for Implementing the NRSDP 2018-2027 shall be establish for another 4 year for 2022-2025 and the third on for the 2-years period of 2026-2027. The NRSDP is regularly reviewed and updated (as often as needed), taking into account technical and scientific achievements and expert recommendations, best experiences, and best practices. Changes are officially initiated with the

[15] https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/513072020003/consolide
[16] https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/507072020002/consolide
[17] https://www.envir.ee/sites/default/files/VOKO/national_radiation_safety_development_plan_2018-2027.pdf
[18] https://www.envir.ee/sites/default/files/VOKO/annex_1._national_action_plan_for_radioactive_waste_management.pdf
[19] https://www.envir.ee/sites/default/files/VOKO/annex_2._national_radon_action_plan.pdf

Decree of the Minister of the Environment, which announces the intention to edit the NRSDP. Ministry of the Environment sends the Decree to all of the relevant authorities, who have a possibility to participate in this process and give their input. Depending on the contents and volume of the changes, strategic environmental assessment might be launched, when the final version of the updated NRSDP draft is composed. During this process, the NRSDP is also put on public display.

The review of the legal framework is an ongoing process and is targeted to the radiation safety. The renewal of the legal framework is based on international requirements, audits recommendations and/or national needs. The drafting (also amendments and renewal) of regulatory framework related to radiation protection, is the responsibility of Ministry of the Environment, although the parliament of the Republic of Estonia is responsible for establishing regulatory requirements. The coordinator of legislative drafting is the Ministry of Justice, who stands for the systematic development of law and supports the formation of quality legislative drafting.

Summary on implementing Article 4

Ensuring radiation protection in Estonia is organized by Ministry of the Environment through the Environmental Board and Environmental Inspectorate. Ministry of the Environment develops radiation safety policies and prepares legislative drafting in cooperation with other relevant Ministries and organizations in Estonia. The Environmental Board issues radiation practice licenses, conducts radiation monitoring and manages the emergency notification or early warning system.
The Environmental Inspectorate supervises fulfillment of conditions of radiation practice licenses and obligations of radiation practice license owner and also has enforcement power. The Ministry of the Environment and the Environmental Board cooperate European Commission, IAEA, WHO, and participate in EC working groups and advisory committees.

The long term strategies and goals in radiation protection field are set in National Radiation Safety Development Plan. The main act regulating radiation safety in Estonia is the Radiation Act and its 15 sub-acts. There are also several other supporting acts. The General Part of the Environmental Code Act and its implementing regulation state requirements for the Information System for Environmental Decisions. The Emergency Act and its implementing regulations deal with emergency preparedness. The Environmental Inspectorate may apply the special measures for state supervision provided for in the Law Enforcement Act, which also contains measures for intervention in emergency exposure situations. Environmental Impact Assessment and Environmental Management System Act and its implementing regulations state conditions of environmental impact assessment. Penal Code applies to the imposition of punishments for offences related to radioactive material.

2.2 Article 5 Competent regulatory authority

1. Member States shall establish and maintain a competent regulatory authority in the field of nuclear safety of nuclear installations.

2. Member States shall ensure the effective independence from undue influence of the competent regulatory authority in its regulatory decision-making. For this purpose, Member States shall ensure that the national framework requires that the competent regulatory authority:
(a) is functionally separate from any other body or organisation concerned with the promotion or utilisation of nuclear energy, and does not seek or take instructions from any such body or organisation when carrying out its regulatory tasks;
(b) takes regulatory decisions founded on robust and transparent nuclear safety-related requirements;
(c) is given dedicated and appropriate budget allocations to allow for the delivery of its regulatory tasks as defined in the national framework and is responsible for the implementation of the allocated budget;
(d) employs an appropriate number of staff with qualifications, experience and expertise necessary to fulfil its obligations. It may use external scientific and technical resources and expertise in support of its regulatory functions;
(e) establishes procedures for the prevention and resolution of any conflicts of interest;
(f) provides nuclear safety-related information without clearance from any other body or organisation, provided that this does not jeopardise other overriding interests, such as security, recognised in relevant legislation or international instruments.

3. Member States shall ensure that the competent regulatory authority is given the legal powers necessary to fulfil its obligations in connection with the national framework described in Article 4(1). For this purpose, Member States shall ensure that the national framework entrusts the competent regulatory authorities with the following main regulatory tasks, to:
(a) propose, define or participate in the definition of national nuclear safety requirements;
(b) require that the licence holder complies and demonstrates compliance with national nuclear safety requirements ;
(c) verify such compliance through regulatory assessments and inspections;
(d) propose or carry out effective and proportionate enforcement actions.

In Estonia the competent regulatory authorities are Ministry of the Environment with its sub-authorities - Environmental Board and Environmental Inspectorate. The division of tasks and responsibilities between the authorities and their role is in more detail described also in the previous chapter, under the implementation of article 4.

According to the Radiation Act Article 25 the activities related to radiation safety shall be organised by the Ministry of the Environment within the limits of its competence through the Environmental Inspectorate and the Environmental Board. The Environmental Board is authorized to fulfill the obligation of the regulatory authority in the country and the Environmental Inspectorate is provided an authorization to carry out regular inspections of the radiation practices. Both regulatory bodies as governmental institutions have separate budgets to fulfill their obligations which cannot be influenced by political circumstances.

Ministry of Environment coordinates and executes supervisory control of the activities of both organizations. The status, areas of activity and tasks as well as the management of the organizations are set forth in the Statutes of the Environmental Board and the Statutes of the Environmental Inspectorate. The State Audit Office in their sectoral audits in turn, inspects the activities of the Ministry of the Environment, Environmental Board and the Environmental Inspectorate.

Independence is also furthered by the fact that radiation safety issues are within the mandate of the Environmental Board, not subordinated to the Ministry of Social Affairs or the Ministry of Economic Affairs and Communications, which are administrating also some of the radiation practice license holders (e.g hospitals, energy sector, storage and final disposal of radioactive waste) and would implicate a more robust economic pressure on decision-making in the field of radiation safety.

Radiation Act Article 61 (4) states also clearly that the interim storage and final disposal of radioactive waste shall be organised by the Ministry of Economic Affairs and Communications. The Radiation Act and its administration belong to the responsibility of the Ministry of Environment, which as such, is independent from the Ministry of Economic Affairs and Communications. The latter elaborates, manages and implements the state`s economic policy and economic development plans, in a number of fields.

The Constitution of the Republic of Estonia[20] Article 115 states that for each year the *Riigikogu* passes a law which contains a budget that sets out all items of government revenue and expenditure. In the commented edition of the Constitution of the Republic of Estonia[21], it is explained that if the state budget does not provide for an object of expenditure, it does not release the state from fulfilling any of its obligations that arises from law, administrative act or contract.

In order to fulfill responsibilities mentioned above (obligations arising from law, administrative act or contract), the responsible authority must plan the resources and this is done annually. State Budget

[20] https://www.riigiteataja.ee/en/eli/521052015001/consolide
[21] https://www.pohiseadus.ee/index.php?sid=1&ptid=126&p=115

Act[22] Article 1 (1) provides the bases for drafting the state budget, pursuant to which the fiscal policy opportunities arising from the state financial forecasts and strategic development documents are followed when drafting the state budget. Article 19 (1) states that the strategic development documents include the general principles of policy, sectoral development plan, and programme. Article 19 (5) clarifies that the programme is a development document which determines the measures, indicators, activities and financing scheme targeted at the achievement of a sub-objective of a performance area. In the responsibility area of the Ministry of the Environment is the program "Program for Use and Protection of Environment for period 2020-2023"[23] which general and sub-objectives result areas are based on NRSDP 2018-2027.

Regulation of the Government No 112 of 19.12.2019 "State budget strategy, preparation state budget draft and the spending review and the conditions and procedure for transfer the state budget funds and the procedure for submission of reports arising from the State Budget Act"[24] Article 5 states that the budget strategy of ministries and the draft state budget are based on the general and sub-objectives under the responsibility areas of Ministry. The draft budget strategy of the Ministry's responsibility areas are prepared for the next year and the following three years. In other words, the budget must be based on planning for sufficient resources to achieve these goals. According to the Article 8 (1) ministers shall negotiate the draft budget strategy of the responsibility area in order to achieve sectoral objectives.

For example the State Budget Act of the 2020, Article 1 Section 5, provides the budget of the Ministry of the Environment. On this basis was on 13.02.2020 issued the Decree of the Minister of the Environment No. 1-2 / 20/79, which approves the expenditures and distribution of budget of the Ministry of the Environment for 2020 in accordance with the annex to the Decree. This annex also includes, among other things, the personnel costs and management costs of the competent authorities (the Environmental Board and the Environmental Inspectorate).

The composition and classification of employment-positions and personnel of the Ministry of the Environment, the Environmental Board and the Environmental Inspectorate are approved by the statutes of the above mentioned Authorities, in accordance with the regulation of the Government No 92 of 08.11.2012 "Establishment of the employment-positions of State Authorities and Procedure for Classification of Positions".[25]

All relevant Authorities are responsible to have efficient number of staff to cover all duties. The structure of the Radiation Safety Department of the Environmental Board and the requirements applicable to different positions have been developed taking into account the number of radiation practices in Estonia that need to be regulated and their complexity. If amendment of the legislation regulating the area incurs additional obligations, resources will be planned to recruit new staff to meet such obligations and also their necessary qualifications will be contemplated together with relevant amendments. If significant amendments are made regarding the radiation practices in Estonia (e.g., a substantial number of complex and sizeable radiation practices are added), the Environmental Board has the option to table a proposal to the Ministry of the Environment to create additional jobs within the structure of the Environmental Board and to allocate resources for their creation.

The number of inspectors in Environmental Inspectorate is in the moment sufficient, improvements are needed in specialization and qualifications. For keeping and raising the competence, different

[22] https://www.riigiteataja.ee/en/eli/527042020002/consolide
[23] https://www.envir.ee/sites/default/files/ESO/keskkonnakaitse_ja_-kasutuse_programm_2020_2023.pdf
[24] https://www.riigiteataja.ee/akt/121122019026
[25] https://www.riigiteataja.ee/akt/108052020036

trainings are provided (in-house-trainings, training organized by the Environmental Board, training courses provided by the IAEA). The development of the human resources plan is set also as one of the goal in NRSDP 2018-2027.

One strategic objective set in NRSDP 2018-2027 is also the competence building in radiation safety field. The NRSDP 2018-2027 describes as one of the activities to reach the goal, the establishment of at least one additional position in Environmental Board for radon measurements and radon consulting, the establishment of at least two radiation inspector positions in Environmental Inspectorate, the establishment of at least one additional position in Ministry of The Environment to meet EU and international obligations and in A.L.A.R.A. Ltd, which is responsible for radioactive waste management, the establishment of one additional radiation specialist in connection with studies on the establishing of a radioactive waste disposal facility and the decommissioning of the reactor sections of the former nuclear site in Paldiski.

The prevention and resolution of conflicts of interest has been avoided on the one hand by the Radiation Act (e.g article 50 (5) states that the measurements conducted during individual dose monitoring must be accredited), and more thoroughly regulated by the Civil Service Act[26], the Anti-Corruption Act[27] and the decisions and instructions of the Council of Official Ethics formed by the Government of the Republic. Chapter 5 of the Civil Service Act provides for the duties of an official. In Article 60 are described restrictions on activities. Section 4 provides, that an official is prohibited to:

1) exercise direct and constant supervision over a person connected to himself or herself or a connected person for the purposes of clause 15 4) of this Act or clauses 7 (1) 2) and 3) of the Anti-corruption Act;
2) earn profit for the ancillary service if the same activity is included in his or her functions. The ban shall not be applied to the research and pedagogical activity in an educational establishment if the official has notified of his or her ancillary activity pursuant to subsection (3) of this section.

Anti-Corruption Act provides the legal bases for the prevention of corruption upon performance of public duties and liability for any violation of the obligations established. Obligations of officials and agencies performing public duties. Article 3 (1) provides that an official is prohibited from:

1) demanding, intermediating and receiving income derived from corrupt practices;
2) corrupt use of official position;
3) corrupt use of public resources;
4) corrupt use of influence;
5) corrupt use of inside information.

In the cases and on the terms and conditions provided by law, an official shall:

1) comply with restrictions on activities and procedural restrictions (as set in Article 11);
2) disclose his or interests in a declaration of interests (as set In Article 12).

A Supporting role in preventing conflicts of interest has given also to the Council for Official Ethics, which is an independent government commission under the Ministry of Finance. In regulation of the Government No 111 of 19.12.2012 "Fundamentals of the Organization of the Work of the Council on Official Ethics"[28] are established specific tasks of the organisation. Among other things, the Council for Official Ethics has approved the Guidelines on “Prevention of Conflicts of Interest in the Training of Officials” and “Good Practice on Gifts or Benefits Related to the Performance of Official Duties” and the decision “Code of Ethics for Officials”[29].

[26] https://www.riigiteataja.ee/en/eli/525032019003/consolide
[27] https://www.riigiteataja.ee/en/eli/501042019024/consolide
[28] https://www.riigiteataja.ee/akt/119052015004
[29] https://www.rahandusministeerium.ee/sites/default/files/ametniku_eetikakoodeks_20.02.2017.pdf

The competent authorities must also be guided by this legislation. However, the Ministry of the Environment has issued guidelines that promote more effective compliance with the requirements and recommendations set out in the above-mentioned legislation and that apply to the entire area of government of the Ministry of the Environment.

According to the Article 30 of the Radiation Act, the Environmental Board and the Health Board shall promote, within their area of competence, radiation awareness, use of good practice and compliance with radiation safety principles, and issue radiation and nuclear safety guidelines and information materials which are published on the website of the Environmental Board and the Health Board. The Environmental Board, the Environmental Inspectorate and the Health Board shall disseminate to relevant parties, including manufacturers and suppliers of radiation sources and, where appropriate, international organisations, protection and safety information based on experience learned from identification of radiation practices, inspections and from reported incidents and accidents and related findings.

According to Regulation No 63 of the Government "Emergency situations for which a contingency plan is to be drawn up and for which a risk communication is to be carried out and the authorities responsible for the management of emergencies"[30] issued pursuant to the Emergency Act, Environmental Board directs and resolves radiological and nuclear emergencies since July 2018. The Environmental Board has developed the risk assessment of the radiological emergencies. In 2018 the Ministry of the Interior in cooperation with State Chancellery published a document "Code of Conduct for Crisis Situations" [31], which gives main instructions to public how to prepare for and act during different crisis situations, including radiological accidents. Environmental Board has published information related to a radiological emergency in its website and continues further improvement of guiding materials.

Radiation information, including information materials and results of research, etc., are available on websites of the Ministry of Environment[32], the Environmental Board[33] and A.L.A.R.A. Ltd [34] (orphan sources, radioactive waste). Publicly available are also information regarding IAEA missions (IRRS report[35], IRRS follow-up report[36], ARTEMIS[37]). Environmental Board and Ministry of the Environment share radiation information via media and social media and provide comments and information to the members of the public of Estonia on nuclear safety related events in other countries. Estonia has adopted NRSDP for 2018-2027 in accordance with the Radiation Act's Article 26 to analyse the situation of radiation safety in the country, determine the measures for improvement of radiation safety and give an assessment on how the development plan promotes pursuing of the objectives and principles provided for. NRSDP 2018-2027 and its implementation reports are made publicly available by the Ministry of the Environment to provide information on the processes and their development to the members of the public. In addition, Ministry of the Environment arranges on regular basis (at least once per year) a seminar to the members of the public and relevant stakeholders on radiation safety matters.

Legislative drafting, amendments to the legal acts, radiation safety policy planning and making changes to these documents is coordinated with all relevant authorities and stakeholders. In addition, in the

[30] https://www.riigiteataja.ee/akt/131072018004
[31] https://www.siseministeerium.ee/sites/default/files/dokumendid/Kriisireguleerimine/est_elanikkonnakaitse.pdf
[32] https://www.envir.ee/en/radiation
[33] https://www.keskkonnaamet.ee/en/activities/radiation
[34] https://alara.ee/en/
[35] https://www.envir.ee/sites/default/files/irrs_estonia_final_report_2016-11-10_.pdf
[36] https://www.envir.ee/sites/default/files/irrs_estonia_follow_up_mission_report_1.pdf
[37] https://www.envir.ee/sites/default/files/artemis_estonia_final_report_.pdf

drafting phase, usually their input is being asked. For more challenging tasks dedicated working groups from relevant government authorities representatives and stakeholders are established. Members of the public and private companies have the possibility to participate during the public display procedure. All draft versions of legal acts and national policy planning documents are put on public display. Public engagement and participation are one of the key elements in decision making in Estonia. The Government has adopted a Good Practice of Engagement [38] and in environmental matters it is also regulated with the General Part of the Environmental Code Act's Section 28. In the international context, Estonia has signed, ratified/approved several treaties, agreements and conventions.

Regulatory framework in Estonia covers aspects required in article 5 (3). Ministry of the Environment, Environmental Board and Environmental Inspectorate has the legal power to fulfill obligations. Authorities' responsibilities, role and tasks are more detailed described under the implementation of Article 4.

Summary on implementing Article 5

In Estonia are the competent Authorities set in place. Role, duties and responsibilities are clearly divided. To avoid conflict of interest, focus on radiation safety issues and give relevant and correct information, several regulations and guides are adopted.

2.3 Article 6 Licence holders

1. (a) the prime responsibility for the nuclear safety of a nuclear installation rests with the licence holder. That responsibility cannot be delegated and includes responsibility for the activities of contractors and sub-contractors whose activities might affect the nuclear safety of a nuclear installation;

(b) when applying for a licence, the applicant is required to submit a demonstration of nuclear safety. Its scope and level of detail shall be commensurate with the potential magnitude and nature of the hazard relevant for the nuclear installation and its site;

(c) licence holders are to regularly assess, verify, and continuously improve, as far as reasonably practicable, the nuclear safety of their nuclear installations in a systematic and verifiable manner. That shall include verification that measures are in place for the prevention of accidents and mitigation of the consequences of accidents, including the verification of the application of defence-in-depth provisions;

(d) licence holders establish and implement management systems which give due priority to nuclear safety;

(e) licence holders provide for appropriate on-site emergency procedures and arrangements, including severe accident management guidelines or equivalent arrangements, for responding effectively to accidents in order to prevent or mitigate their consequences. Those shall in particular:

(i) be consistent with other operational procedures and periodically exercised to verify their practicability;

(ii) address accidents and severe accidents that could occur in all operational modes and those that simultaneously involve or affect several units;

(iii) provide arrangements to receive external assistance;

(iv) be periodically reviewed and regularly updated, taking account of experience from exercises and lessons learned from accidents;

f) licence holders provide for and maintain financial and human resources with appropriate qualifications and competences, necessary to fulfil their obligations with respect to the nuclear safety of a nuclear installation. Licence holders shall also ensure that contractors and subcontractors under their responsibility and whose activities might affect the nuclear safety of a nuclear installation have the necessary human resources with appropriate qualifications and competences to fulfil their obligations.

The main Act regulating the radiation safety, use of radiation sources and radiation practices is Radiation Act. The use of radiation source requires a radiation practice license which is granted by the Environmental Board upon application. Commencement of radiation practices or performance of radiation works which require a radiation practice licence without a radiation practice licence is prohibited. General obligations of holders of radiation practice licences are set in Article 32 of Radiation Act, additional obligations of holders of radiation practice licences upon operation of nuclear facilities arise from Article 40. Obligation to develop, implement and control the functioning of a

[38] https://www.riigikantselei.ee/en/good-practice-engagement

quality management system for radiation safety arise from Article 35. Radiation Act Article 24^1 states that holders of radiation practice licences shall be liable for the performance of the obligations provided for in the Radiation Act and the terms and conditions of the licence for the purposes of ensuring radiation safety and protection of employees in any exposure situations relating to any source of radiation in the possession of the holder of the licence or any radiation practice of the holder of the licence. Radiation Act Article 46 (1) provides that a radiation safety specialist is a person with technical competence in the issues connected to relevant radiation practices who may be designated the person in control of compliance with radiation safety requirements at the undertaking by the holder of radiation practice licence, although Article 46 (3) provides clearly that designation of a radiation safety specialist does not release the holder of a radiation practice licence of the responsibility to ensure radiation safety.

Responsibilities are also described in the General Part of the Environmental Code Act, where Article 22^1 says that a body of a legal person, its member, officer or authorised representative is required to organise the timely and full performance of the financial and non-financial duties and obligations of the legal person under this Act, the Waste Act, the Water Act, the Atmospheric Air Protection Act, the Earth's Crust Act, the Radiation Act, the Nature Protection Act, the Forest Act, the Fishing Act, the Hunting Act, the Industrial Emissions Act, the Environmental Charges Act, the Environmental Liability Act, and the regulations of the European Union in the fields governed by these Acts.

Article 2 of Radiation Act sets that the Administrative Procedure Act shall apply to the administrative procedure provided for in Radiation Act, taking into account of the specifications provided for in this Act. Chapter 5 of the General Part of the Environmental Code Act shall apply to the proceedings of environmental licences issued for radiation practices provided for in this Act. The licensing system for radiation practices is prescribed in Chapter 4 of the Radiation Act. Article 70 of the Radiation Act describes the scope of the application. In order to obtain a radiation practice license, an applicant shall submit an application to the Environmental Board with information and documents provided in the Radiation Act Article 70 and more specific in Regulation No 60 of the Minister of the Environment "Detailed requirements for applications for radiation practice licenses, lists of data of applications and radiation practice licenses, and lists of data characterizing radiation sources used to keep lists of nuclear materials". The procedure and necessary documents are described in more detail under the chapter on implementation of Article 4 of the Directive.

As Estonia has no operating nuclear installations, requirements for nuclear activities are described in a general manner in the Radiation Act. According to the Article 19 of Radiation Act, nuclear safety is the situation which is achieved by means of the activities related to radiation safety and which aim is to achieve proper operating conditions through compliance with the established operating requirements and to avert emergency exposures and mitigate the consequences of emergency exposures as a result of which the protection of workers and the other population against the dangers arising from ionizing radiation of nuclear facilities is improved. The Article 40 of the Radiation Act sets that in addition to the general obligations provided for in Article 32 of Radiation Act, a holder of a radiation practice licence is required to do the following in the case of operation of nuclear facilities:

1) ensure implementation of nuclear safety measures and compliance with relevant requirements;
2) ensure that the workers and subcontractors of the nuclear facility comply with the nuclear safety culture and nuclear safety quality management system implemented at the nuclear facility on the basis of their official duties;
3) assess nuclear safety at the nuclear facility at least with the same frequency as provided for in the requirements of the radiation practice licence.

Article 32 (2) states that upon high risk radiation practices, a holder of a radiation practice licence is obliged to prepare a response plan to emergency exposure situations and ensure that a recognized radiation expert has approved the design documentation of the facilities of radiation practices and the commissioning of new radiation sources. According to the Radiation Act's Article 34 (2), high risk

radiation practices among other activities, involve operation of nuclear facilities and exploitation, closure and decommissioning of any facility of nuclear fuel cycle.

Radiation Act Article 35 sets requirements for radiation safety quality management system. A holder of a radiation practice licence is required to develop and implement a quality management system for radiation safety and other activities related thereto which ensures compliance with the requirements provided for in this Act and legislation issued on the basis thereof and the requirements determined in the radiation practice licence. Radiation safety quality management systems cover:

1) planned and systematic activities which objective is to ensure radiation safety;
2) analysis of duties, and skills required for and requirements for use of radiation sources which include, in particular, description of radiation practice, guidelines for radiation practice, workers' training procedure;
3) requirements for procurement, use and disuse of materials and equipment;
4) description of radiation safety procedures implemented during radiation practices;
5) procedure for controlling the functioning and improvement of the radiation safety quality management system.

Article 35 (3) sets additional requirements for nuclear facility:

1) description of systematic activities conducted for the purpose of ensuring nuclear safety;
2) analysis of duties and requirements for competence required to operate nuclear facilities;
3) description of the control system for compliance with nuclear safety requirements;
4) plans for training and instructing the workers.

As mentioned before, only decommissioning of reactor compartments in Paldiski fall under the scope of the Directive in Estonia. According to the Radiation Act, Paldiski site is considered as a high risk radiation practice (radioactive waste storage) and, as provided in Article 76 (2), a radiation practice licence for it is issued for a term of up to five years. Since the Radiation Act does not provide for the extension of the radiation practice license, a new license needs to be applied for to continue radiation practice after every five years.

Article 70 of the Radiation Act describes the scope of the application. In order to obtain a radiation practice license, an applicant shall submit an application to the Environmental Board a radiation safety assessment, which gives an overview of the aspects of radiation practices which are related to the protections of people and safety of radiation sources, including of the protective and safety measures used, and of the potentially assessed doses of exposed workers and members of the public both under normal working conditions and in the cases of accidental and existing exposure situations, to which data on measures adopted to ensure radiation safety are appended.

The verification of safety is carried out in the form of safety reviews and safety assessments as well as in the implementation of inspection programs carried out by the Environmental Inspectorate. The requirement for regular safety assessment of Paldiski site is ensured through regular reporting to the Environmental Board, which conditions are set in the radiation practice licence, and requirements set in the Radiation Act. Ultimately, any violation of the requirements of the Radiation Act and/or its provisions determined by a radiation practice license is punishable by fines. As a precondition for granting a radiation practice license, the Radiation Act requires that the applicant shall present a valid proof on the safe management of any radioactive waste, which may be generated. The Radiation Act provides that the responsible party shall manage the practice so that it meets all radiation safety requirements prescribed in the Act and it shall take all measures needed to render radioactive waste arising from its operation harmless. The Radiation Act also provides for the responsibility of decontamination of the environment, if the radioactive material is released in such an extent that the resulting health or environmental hazard requires action.

Pursuant to the Radiation Act, one of the main obligations of the holder of the licence is to prepare an emergency response plan and the Environmental Board reviews the plan during authorisation process. Upon radiation practices with high risk, a holder of the licence is obliged to prepare a response plan to accidental exposure situations that based on the assessment of potential exposures. In the Section 18 of the Regulation No 60 of the Minister of the Environment the content of the emergency response plan is described, which is following:
1) brief description of the radiation source;
2) description of potential emergency exposure situations and the consequences thereof;
3) name and contact details of the manager responsible for emergency response;
4) description of actions to deal with emergency;
5) information on the equipment and resources necessary for emergency response;
6) procedure for notifying the Environmental Board, the Rescue Board, workers and the public;
7) description of organisation of cooperation with other enterprises and institutions;
8) frequency of reviewing the emergency response plan.

The Environmental Board evaluates the emergency response plans, trainings and exercises during the pre-authorization inspection based on the documentation provided by the applicant. By granting the radiation practice licence the Environmental Board also approves the emergency response plan. The Environmental Board is notified according to the on-site emergency response plan during the exercises. The Environmental Board may also be involved in the on-site emergency response plan testing. According to the Radiation Act, the holder of the licence must immediately inform the Environmental Board and the Emergency Centre by calling the emergency number 112 of any loss, theft or unauthorised use of radiation sources and of any incidents or accidents which took place during radiation practices and resulted in workers or members of the public receiving an equivalent or effective dose in excess of the dose limits established pursuant to subsection 50 (6) of this Act, and submit to the Environmental Board, after the incident, an analysis of the causes thereof and implementation of the remedial measures.

High-risk radiation practices are checked by Environmental Inspectorate annually. This means radiation safety instructions, emergency response plan and protocols which approves the conduction of trainings and exercises, are also reviewed annually by Environmental Inspectorate.

According to the Article 48 of the Radiation Act, a holder of a radiation practice licence is required to ensure that exposed workers receive radiation safety training and instructions which take into account the nature of work and the conditions at workplace. The designation of the radiation safety specialist is mandatory if the undertaking has more than 10 exposed workers. Regardless of the number of exposed workers, the designation of the RPO is mandatory for:
1) radiation practices during which an exposed worker receive or may receive an effective dose exceeding 6 millisieverts per year;
2) radiation practices related to high-activity sealed sources;
3) operation of nuclear facilities;
4) exploitation, closure and decommissioning of any facility of nuclear fuel cycle;
5) interim storage or final disposal of radioactive waste. Radiation safety specialist is a person with technical competence in the issues connected to relevant radiation practices who may be designated the person in control of compliance with radiation safety requirements at the undertaking by the holder of radiation practice licence. Requirements of training a radiation safety specialist is described in the Regulation No 57 of 28.11.2016 of Minister of the Environment “Requirements of providing radiation safety training to exposed workers and radiation safety specialists”. When applying the radiation practice licence, the applicant has to submit data on exposed workers and their professional training. Data on exposed workers includes copy of document which ensures that the worker has a professional training and/or the worker has received radiation safety training. If radiation safety specialist is required, application also has to include the job description of a radiation safety specialist.

Designation of a radiation safety specialist does not release the holder of a radiation practice licence of the responsibility to ensure radiation safety.

All exposed workers must be instructed before starting work. The holder of a radiation practice licence shall arrange the participation of exposed workers and radiation safety specialists in in-service training and at least once every five years.

Radiation Act provides also, that applications for radiation practice licences shall provide data on radioactive waste, equipment containing thereof and financial collaterals required for recovery of radioactive waste and data subject to entry in radiation practice licence shall indicate among other things also existence of financial collateral. According to the Radiation Act Article 77 (3) in addition to the provisions of Article 62 of the General Part of the Environmental Code Act, a radiation practice licence is revoked if the holder of a licence does not ensure existence of a financial collateral. Conditions and requirements for financial collateral and need to increase of collateral, are set in Articles 98-99 of the Radiation Act.

The financial arrangements are adequate for ensuring the long-term safety of the Paldiski site as it is state property, and as such, the financial situation must be secure also in the future until all the facilities are fully decommissioned. The owner of the Paldiski site is Ministry of Economy and Communication. Each year the agreement is concluded between Ministry and radioactive waste management organization A.L.A.R.A. Ltd for radioactive waste management and decontamination works. The agreement is financed from state budget. Thus, the financial capacity to maintain and if necessary improve the safety of facilities for radioactive waste management, in accordance with the regulatory requirements, is ensured.

Summary on implementing Article 6

Licence holder is responsible for radiation safety and guarantee the physical protection of the radiation sources in the holder's possession, also developing and implementing a radiation safety quality system and ensure that the holder has sufficient funds to cover the relevant expenses. The prime responsibility for the nuclear safety of a nuclear installation rests with the licence holder and it is clearly defined in the Radiation Act. Obligations of licence holders are listed in Radiation Act and licence holder must ensure that the workers and subcontractors of the nuclear facility comply with the nuclear safety culture and nuclear safety quality management system implemented at the nuclear facility on the basis of their official duties. The requirement for regular safety assessment of Paldiski site is ensured through regular reporting to the Environmental Board, which conditions are set in the radiation practice licence, and requirements set in the Radiation Act. The Paldiski site is also the object of the annual inspection of the Environmental Inspectorate, so at least once a year compliance with the requirements arising from the Radiation Act, from the radiation practice license and internal documents, including the quality management system and monitoring plan, are reviewed.

2.4 Article 7 Expertise and skills in nuclear safety

Member States shall ensure that the national framework requires all parties to make arrangements for the education and training for their staff having responsibilities related to the nuclear safety of nuclear installations so as to obtain, maintain and to further develop expertise and skills in nuclear safety and on-site emergency preparedness.

The regulatory agencies in the field of radiation include the Environmental Board, the Environmental Inspectorate, the Ministry of the Environment, the Health Board, the Rescue Board, the Security Police, the Police and Border Guard Board, the Tax and Customs Board, the Labor Inspectorate, and A.L.A.R.A. Ltd. The composition and classification of employment-positions and personnel of the regulatory Authorities approved by the statutes of the above mentioned Authorities, in accordance with the

regulation of the Government No 92 of 08.11.2012 “Establishment of the employment-positions of State Authorities and Procedure for Classification of Positions”. The general requirements for the education, professional experience and foreign language skills of officials are laid down in the Regulation of the Government No 114 of 19.12.2012.[39] Due to the different responsibilities of the regulatory agencies, the levels of knowledge required by the staff of these agencies may be set differently. In all relevant authorities a variety of measures are applied to develop and maintain competence of employees.

There is no designated advisory body in Estonia in the area of radiation protection and nuclear safety but authorities have a chance to use the services of qualified experts and universities.

Education related to radiation and nuclear safety provided in Estonia (including level education and training) can be divided into four groups:
1) general education training events / courses and level training in educational and in-service training institutions;
2) training events of exposed workers and radiation safety specialists;
3) training events of radiation experts;
4) training events of staff of regulatory agencies.

Training events for exposed workers and radiation safety specialists take place relatively regularly in Estonia and are offered by the training companies.

While for years the training events were mainly aimed at exposed workers, recently training events for radiation safety specialists have also emerged as a separate category. This development is mainly due to legislative modifications. With the 2016 amendment to the Radiation Act, the definition of a radiation safety specialist was added to the Act and Regulation No 57 of the Minister of the Environment of 24 November 2016 “Requirements for radiation safety training of radiation safety specialists and exposed workers”[40] was updated with radiation safety specialist training requirements. The training requirements for exposed workers were also significantly improved. The Regulation establishes that exposed workers must have passed both initial and in-service training. Training events for exposed workers in Estonia provide an overview of the theoretical foundations of radiation safety and the practical implementation of the principles of radiation protection. In addition to more thorough theoretical preparation, the training of a radiation safety specialist includes practical exercises. Initial and in-service training is provided to exposed workers by a specialist with at least three years’ experience in the area of radiation safety or by a radiation expert with a valid certificate. Training for radiation safety specialists is provided by a radiation expert with a valid certificate.

There are no opportunities for training radiation experts in Estonia. The introduction of the curriculum for the training of radiation experts established in Regulation No 45 of the Minister of the Environment of 27 October 2016 “Radiation safety training curriculum, professional competence requirements, certificate application procedure, application form and certificate form”[41] is difficult in Estonia. A survey was conducted in the EU Member States on the training of radiation experts, and several countries stated that setting up such a training system at national level was too expensive and, in practice, relatively impossible. At present, there are three qualified radiation experts in Estonia who have been working in the field for many years, and since the licence of a radiation expert is valid for five years, this is either the second or third term for some radiation experts.

[39] https://www.riigiteataja.ee/akt/121122012037
[40] https://www.riigiteataja.ee/en/eli/522102018002/consolide
[41] https://www.riigiteataja.ee/akt/129102016002

The performance of employees in regulatory Authorities and their various competences are mostly evaluated during annual performance review. As a result of the performance review interviews, training needs are identified which the human resource manager consolidates in the training. During a performance review the following aspects are covered:
1) evaluation of competences (incl. a discussion between the employee and the employer to clarify development needs);
2) evaluation of task fulfilment;
3) setting of goals for the next period (tasks and training courses in the next period).

Based on the performance reviews, an individual work and training plan is compiled for each employee every year. The management approves the annual training plan and allocates funds for this from the budget. The budget is prepared through the activities planned in work plans (both the anticipated working time of employees and costs of work equipment are taken into account). The budget is sufficient to fulfill the obligations.

The Environmental Board applies a process management model in its management system. Processes cover all the important activities of the organization and their continuous development is one of the principles of process management. The management system of the Environmental Board is adequately documented.

The competence of inspectors is developed through training. Internal trainings take place on a regular basis (1-2 times a year) and are organized in cooperation with the Radiation Safety Department of the Environmental Board. Inspectors also have opportunity to participate IAEA training courses and workshops. There have not been any changes in numbers of inspectors of radiation supervision in the last three years. As the Environmental Inspectorate executes supervision in all areas of environmental protection, there are no separate financial resources planned for radiation protection. The Environmental Inspectorate does not have special resources to carry out radiation surveillance. If necessary, external technical support is gained from the Radiation Safety Department of the Environmental Board.

The long term strategies and goals in the field of education and training are set in NRSDP. One strategic objective set in NRSDP 2018-2027 is the competence building in radiation safety field. Target levels are set as follows:

1. by 2020 one radiation specialist position has been created in A.L.A.R.A. Ltd for project management purposes for the planning of the decommissioning of the site by 2050.
2. by 2023 four additional radiation specialist positions have been created in the administrative area of the Ministry of the Environment;
3. by 2025 at least three training events have been organised for local government officials;
4. by 2025 at least five information days on radiation have been organised.
5. by 2027 a consistent training system for radiation specialists (for authorities and license holders) has been developed.

Activities to achieve the goals are listed:
1. Development of an online course on basic radiation knowledge for public administration staff.
2. Assessing the possibility of integrating a lecture course on radiation safety into the curriculum of the field of natural and exact sciences of a public law institution and finding opportunities.
3. Improving design and construction curricula in relation to the dangers of natural radiation, in particular radon, and the use of mitigation measures to raise awareness among specialists in this area.
4. Training of supervisory officials.
5. Regular emergency response training for A.L.A.R.A. Ltd.
6. Regular radiation training for the first responders in radiation events.

Summary on implementing Article 7

National framework sets basic principles for education norms for employees and officials in radiation field. Some requirements (e.g for radiation workers, radiation specialist, experts) are more specifically provided in Radiation Act. Although this area needs improvements and goals are set in NRSDP 2018-2027.

2.5 Article 8: Transparency

2.5.1 Article 8

1. Member States shall ensure that necessary information in relation to the nuclear safety of nuclear installations and its regulation is made available to workers and the general public, with specific consideration to local authorities, population and stakeholders in the vicinity of a nuclear installation. That obligation includes ensuring that the competent regulatory authority and the licence holders, within their fields of responsibility, provide in the framework of their communication policy:
(a) information on normal operating conditions of nuclear installations to workers and the general public;
(b) prompt information in case of incidents and accidents to workers and the general public and to the competent regulatory authorities of other Member States in the vicinity of a nuclear installation.

2. Information shall be made available to the public in accordance with relevant legislation and international instruments, provided that this does not jeopardise other overriding interests, such as security, which are recognised in relevant legislation or international instruments.

3. Member States shall, without prejudice to Article 5(2), ensure that the competent regulatory authority engages, as appropriate, in cooperation activities on the nuclear safety of nuclear installations with competent regulatory authorities of other Member States in the vicinity of a nuclear installation, inter alia, via the exchange and/or sharing of information.

4. Member States shall ensure that the general public is given the appropriate opportunities to participate effectively in the decision-making process relating to the licensing of nuclear installations, in accordance with relevant legislation and international instruments.

Based on Article 71 and 72 of the Radiation Acts, if an application for a radiation practice licence is applied for radiation practices involving exploitation, closure and decommissioning of any facility of nuclear fuel cycle; management and transportation of radioactive waste or activities related to the presence of increased natural exposures in the case of which the exposure caused by natural radionuclides is important from the radiation safety point of view, open proceedings apply to issue or amendment of radiation practice licences and the issuer of licences must submit the application to the local government for its opinion. According to Article 3 of the Regulation No 60 of the Minister of the Environment "Detailed requirements for applications for radiation practice licenses, lists of data of applications and radiation practice licenses, and lists of data characterizing radiation sources used to keep lists of nuclear materials" provisions stipulated in sections 46–48[1] of the General Part of the General Part of the Environmental Code Act are applied to open proceedings for the issue or amendment of radiation practice licences. Open proceedings procedure is described in the General Part of the Environmental Code Act Chapter 5, which is permit proceedings.

According to the Article 43 of the General Part of the Environmental Code Act, after verifying the compliance of an application for an environmental permit (including radiation practice license applications) with the requirements, the issuer of the environmental permit will immediately forward the application to the local authority of the location of the planned activity for the purpose of obtaining its opinion. The local authority will submit a written opinion on an application for an environmental permit within one month after the receipt of the application. The submission of the opinion does not restrict the local authority's right to submit additional positions in the course of further proceedings. If proceedings for the assessment of the environmental impact of the planned activity are carried out for deciding the granting of an environmental permit, the local authority will submit an opinion within

21 days after the receipt of a notice specified in subsection 22 (7) of the Environmental Impact Assessment and Environmental Management System Act[42].

The Article 46 of the General Part of the Environmental Code Act sets requirements for informing of persons likely to be affected by proceedings of granting of environmental permit in event of open proceedings. If an application for an environmental permit complies with the requirements established by legislation, the issuer of the permit will, in the event of open proceedings, immediately and in accordance with Division 7 (Service of Documents) of the Administrative Procedure Act inform about the submission of the application, the person whose rights might be violated or whose duties might be affected by granting or refusing to grant the environmental permit, including:
1) the owner of the immovable bordering the immovable of the location of the planned activity;
2) the person that possesses an immovable that is affected by the planned activity to the extent that considerably exceeds the ordinary impact.

Based on the Article 32 of the Radiation Act, the holder of the radiation practice licence has to immediately inform the Environmental Board and the Emergency Centre by calling the emergency number 112 of any loss, theft or unauthorised use of radiation sources and of any incidents or accidents which took place during radiation practices and resulted in workers or members of the public receiving an equivalent or effective dose in excess of the dose limits established pursuant to subsection 50 (6) of this Act, and submit to the Environmental Board, after the incident, an analysis of the causes thereof and implementation of the remedial measures. The holder of the radiation practice licence has to control the integrity of radiation sources after each incident if it may have damaged the radiation source and, if necessary, inform the Environmental Board of this incident and the measures implemented. According to the Article 111 of the Radiation Act the Environmental Board shall ensure the operation of the radiation hazard early notification system.
According to Regulation No 63 of the Government "Emergency situations for which a contingency plan is to be drawn up and for which a risk communication is to be carried out and the authorities responsible for the management of emergencies" issued pursuant to the Emergency Act, Environmental Board directs and resolves radiological and nuclear emergencies since July 2018. The Environmental Board has developed the risk assessment of the radiological emergencies. The risk assessment includes assessment of the types of radiological event that could cause an emergency and a risk matrix to assess the likelihood and severity of these events. The radiological emergencies were identified. Those are the radiological accident in a neighboring country and a national radiological accident, for which the Environmental Board has drawn up the radiological emergency response plan. To ensure safety during intervention the emergency response plan describes following issues like organization of response to radiological emergency, management structure of response to emergency, duties of institutions and persons participating in response to radiological emergency, organization of notification of public, organization of international cooperation upon responding to radiological emergency, resources, etc. Updating and reviewing emergency response plan is described in Regulation No 30 of the Minister of Interior "Requirements and procedure for the preparation of Emergency Response Plan". The authority in charge with authorities and persons involved in the solving of the emergency, will assess the operations and timeliness of the plan at least once every two years and after each emergency for six months or if necessary, shall improve the plan any time necessary or required.

Early warning in case of a radiological emergency in Estonia or at a nuclear facility in the vicinity of Estonia is based on the international agreements on exchange of information and on the bilateral agreements. The Environmental Board has a bilateral agreements with STUK, Finland for cooperation and information exchange in case of radiological and nuclear emergency and response since May 2019 and with State Environmental Service Of Latvia from March 2020. Estonia is a Contracting Party to the

[42] https://www.riigiteataja.ee/en/eli/ee/529082019016/consolide/current

International Convention on Early Notification of a Nuclear Accident and to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. The Environmental Board is the National Warning Point and the National Competent Authority in Estonia for any situation, which might result in an actual or potential deterioration of radiation safety of the population, environment or society.

2.5.2 Article 8a

1. Member States shall ensure that the national nuclear safety framework requires that nuclear installations are designed, sited, constructed, commissioned, operated and decommissioned with the objective of preventing accidents and, should an accident occur, mitigating its consequences and avoiding:
(a) early radioactive releases that would require off-site emergency measures but with insufficient time to implement them;
(b) large radioactive releases that would require protective measures that could not be limited in area or time.

2. Member States shall ensure that the national framework requires that the objective set out in paragraph 1:
(a) applies to nuclear installations for which a construction licence is granted for the first time after 14 August 2014;
(b) is used as a reference for the timely implementation of reasonably practicable safety improvements to existing nuclear installations, including in the framework of the periodic safety reviews as defined in Article 8c(b).

Article 8b

1. In order to achieve the nuclear safety objective set out in Article 8a, Member States shall ensure that the national framework requires that where defence-in-depth applies, it shall be applied to ensure that:
(a) the impact of extreme external natural and unintended man-made hazards is minimised;
(b) abnormal operation and failures are prevented;
(c) abnormal operation is controlled and failures are detected;
(d) accidents within the design basis are controlled;
(e) severe conditions are controlled, including prevention of accidents progression and mitigation of the consequences of severe accidents;
(f) organisational structures according to Article 8d(1) are in place.

2. In order to achieve the nuclear safety objective set out in Article 8a, Member States shall ensure that the national framework requires that the competent regulatory authority and the licence holder take measures to promote and enhance an effective nuclear safety culture. Those measures include in particular:
(a) management systems which give due priority to nuclear safety and promote, at all levels of staff and management, the ability to question the effective delivery of relevant safety principles and practices, and to report in a timely manner on safety issues, in accordance with Article 6(d);
(b) arrangements by the licence holder to register, evaluate and document internal and external safety significant operating experience;
(c) the obligation of the licence holder to report events with a potential impact on nuclear safety to the competent regulatory authority; and,
(d) arrangements for education and training, in accordance with Article 7.

Article 8c

Member States shall ensure that the national framework requires that:
(a) any grant of a licence to construct a nuclear installation or operate a nuclear installation, is based upon an appropriate site and installation-specific assessment, comprising a nuclear safety demonstration with respect to the national nuclear safety requirements based on the objective set in Article 8a;
(b) the licence holder under the regulatory control of the competent regulatory authority, re-assesses systematically and regularly, at least every 10 years, the safety of the nuclear installation as laid down in Article 6(c). That safety reassessment aims at ensuring compliance with the current design basis and identifies further safety improvements by taking into account ageing issues, operational experience, most recent research results and developments in international standards, using as a reference the objective set in Article 8a.

Article 8d

1. Without prejudice to the provisions of the Directive 2013/59/Euratom, Member States shall ensure that the national framework requires that an organisational structure for on-site emergency preparedness and response is established with a clear allocation of responsibilities and coordination between the licence holder, and competent authorities and organisations, taking into account all phases of an emergency.
2. Member States shall ensure that there is consistency and continuity between the on-site emergency preparedness and response arrangements required by the national framework and other emergency preparedness and response arrangements required under Directive 2013/59/Euratom

As it described already in Introduction part, Estonia has no nuclear installations according to the definitions of the Directive's Article 3.1 a) and b).There is a former Soviet military facility with two shut-down nuclear submarine reactor compartments in safe long term storage in Paldiski. Spent nuclear fuel was sent back to Russia in 1994. There is also a centralized facility for interim storage for the low and intermediate radioactive waste in the same location as reactor compartments in Paldiski and facilities for treatment and conditioning of radioactive waste. Based on discussion with the European Commission, the Paldiski site does not directly fall within the scope of the Directive, except for the decommissioning aspects. Therefore, Estonia has implemented the requirements of the Directive at general level.

The main principle according to the Radiation Act Article 79 that a radiation practice license for the operation of a new nuclear facility can be applied for after the Parliament has adopted a decision on commissioning of a nuclear facility, the relevant nuclear legislation is required, if Estonia decides to start using nuclear energy.

According to the Article 6 of Environmental Impact Assessment and Environmental Management System Act [43] are activities related to construction, dismantling or decommissioning of a nuclear power station or other nuclear reactors, production or enrichment of nuclear fuel, processing or handling or final disposal of used nuclear fuel or disposal of used nuclear fuel for over ten years on a site other than the place of generation thereof, considered as activities with significant environmental impact. Environmental impact assessment proceedings consist of the stages and procedures described in the Article 3^2.

Paldiski site does not pose a risk of an accident giving rise to radioactive releases of such magnitude that protective measures would be required that could not be limited in area or time.

Interest of Estonia in nuclear safety is primarily related to the safety of nuclear installations in the neighboring countries and to the implications that accidents at such installations, should they occur, may have on the health of the population and on the environment. As it described before, according to the Article 111 of the Radiation Act the Environmental Board shall ensure the operation of the radiation hazard early notification system. As a supplement to the early warning agreements, Estonian on-line system for automatic monitoring of radioactivity is in service 24 hours a day. The system consists of gamma monitoring stations, placed strategically in the country. There are 15 automated air radiation monitoring stations and 3 air filter facilities. In addition to early warning system, Environmental Board conduct also general monitoring of ionizing radiation in the environment (surface water, drinking water, milk, food (inc. forest products), soil, also seawater, biota and sediments). The requirements for conducting radiation monitoring are described in the Radiation Act, the Environmental Monitoring Act[44], and their regulations. The monitoring results are made publicly available on the website of the Environmental Board[45].

However, as already explained in implementation of previous articles, the Paldiski site is regulated as a high-risk radiation activity. Therefore the company has obligation to prepare response plan to emergency exposure situations and ensure that a recognized radiation expert has approved the design documentation of the facilities of radiation practices and the commissioning of new radiation sources, compose and implement proper radiation safety quality management system, ensure that proper tests have been performed with the frequency determined by the issuer of the licence in order to check and

[43] https://www.riigiteataja.ee/en/eli/509012020006/consolide
[44] https://www.riigiteataja.ee/en/eli/507012019005/consolide
[45] https://www.keskkonnaamet.ee/et/eesmargid-tegevused/kiirgus/aruanded-ja-uuringud

maintain the integrity of the radiation source, requirements for the radiation source, container of the radiation source and additional equipment and their maintenance are set in licence.

There is also monitoring requirements set in Radiation Act. Article 54 (1) lays down that a holder of a radiation practice licence ensures monitoring of control and surveillance areas. Article 54 (2) supplement that depending on the need, monitoring of controlled and supervised areas shall include:
1) monitoring of dose rates;
2) monitoring of levels of radioactive contaminants in the air or on surfaces together with determining the properties of the radioactive emissions and their physical and chemical state.
A holder of a radiation practice licence shall register the monitoring results and preserve the results during the entire radiation practice.

In Paldiski site there is continuous monitoring system for two shut-down nuclear submarine reactor compartments. The concentration of radioactive aerosols in the air and the level of gamma radiation are constantly monitored. The license also specifies so-called alert levels.

In the license are described requirements for environmental monitoring (groundwater, effluent, soil, grass) and all monitoring data are publicly available in A.L.A.R.A Ltd. website[46]

2.5.3 Article 8e

1. Member States shall, at least once every 10 years, arrange for periodic self-assessments of their national framework and competent regulatory authorities and invite an international peer review of relevant segments of their national framework and competent regulatory authorities with the aim of continuously improving nuclear safety. Outcomes of such peer reviews shall be reported to the Member States and the Commission, when available.

2. Member States shall ensure that, on a coordinated basis:
(a) a national assessment is performed, based on a specific topic related to nuclear safety of the relevant nuclear installations on their territory;
(b) all other Member States, and the Commission as observer, are invited to peer review the national assessment referred to in point (a);
(c) appropriate follow-up measures are taken of relevant findings resulting from the peer review process;
(d) relevant reports are published on the above mentioned process and its main outcome when results are available.
3. Member States shall ensure that arrangements are in place to allow for the first topical peer review to start in 2017, and for subsequent topical peer reviews to take place at least every six years thereafter.
4. In case of an accident leading to situations that would require off-site emergency measures or protective measures for the general public, the Member State concerned shall ensure that an international peer review is invited without undue delay.

According to the Radiation Act's Article 29 (2) and (3), state radiation safety audits shall be organised by the Ministry of the Environment at least every ten years and immediately when an emergency exposure situation occurs at a nuclear facility and topical peer reviews shall be organised by the Ministry of the Environment at least every six years. State radiation safety audit is an audit organised for the purpose of increasing radiation safety in the course of which the legal and organisational arrangements of state radiation safety and the agencies ensuring radiation and nuclear safety are assessed. Internationally recognized radiation experts shall be involved in the audit. A topical peer review is a national assessment carried out for the purposes of ensuring nuclear safety and the report prepared on it shall be submitted for assessment to other Member States of the European Union and the European Commission. The results of topical peer reviews shall be taken into consideration in preparation of the development plan and action plans specified in Articles 26 and 28 of Radiation Act.

In 2016, Estonia hosted an IAEA's Integrated Regulatory Review Service (IRRS) mission and in 2019 its follow-up mission.

[46] https://alara.ee/seire/

As the previous Topical Peer Review under the Euratom NSD focused on ageing management, it wasn't applicable for Estonia. However, we are aware our opportunities and if there will be considered a topic applicable for Estonia, Estonia will take a part.

Summary on implementing Article 8

According to the Directive the obligations of transposition and implementation of Articles 6, 8a, 8b, 8c and 8d shall not apply to Member States without nuclear installations, unless they decide to develop any activity related to nuclear installations subject to a licence under their jurisdiction. Based on discussion with the European Commission, the Paldiski site does not directly fall within the scope of the Directive, except for the decommissioning aspects. Nevertheless, Estonia has implemented also the requirements of Articles 6, 8a, 8b, 8c and 8d at general level, focused in the safety of Paldiski site and to the national needs.

3. Conclusions

In the above the implementation of the obligations arising from Council Directive 2014/87/EURATOM of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations is evaluated. As there are no nuclear power plants or facilities operating with nuclear fuel cycle in Estonia, neither are any activities related to nuclear fuel cycle performed, has Estonia implemented the requirements of the Directive at general level.

However, in the process of transposing the Directive to national legal and administrative framework, has been paid attention to get the most benefit from the requirements described in the Directive, taking into account objectives necessary to fulfill safety aims. Although focus is set in the safety of Paldiski site and to the national needs.

In the moment Estonian national legal framework, responsible authorities for radiation safety etc. are sufficient and purposeful considering the current radiation activities in Estonia. Although, as described before and set in Radiation Act - if there will be in the consideration other activities, appropriate amendments to the legal framework are also needed.