



Republic of Lithuania

**Lithuanian National Report on
Implementation of the Council Directive
2009/71/EURATOM of 25 June 2009 establishing
a Community framework for the nuclear safety of
nuclear installations**

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Contributors to the Lithuanian National Report

State Nuclear Power Safety Inspectorate (VATESI) prepared this report in consultation with and incorporating contributions from State Enterprise Ignalina Nuclear Power Plant

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Lithuanian National Report on Implementation of the Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations

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Acronyms and abbreviations used in this report

| | |
|------------------------|---|
| ECURIE | European Community Urgent Radiological Information |
| ENSREG | European Nuclear Safety Regulators Group |
| EU | European Union |
| EURATOM | European Atomic Energy Community |
| IAEA | International Atomic Energy Agency |
| INPP | Ignalina Nuclear Power Plant |
| NPP | Nuclear Power Plant |
| NSD | Nuclear Safety Directive |
| SE Ignalina NPP | State Enterprise Ignalina Nuclear Power Plant |
| SIP | Safety Improvement Program |
| SNFSF | Spent Nuclear Fuel Storage Facility |
| TSO | Technical Support Organisation |
| VATESI | State Nuclear Power Safety Inspectorate |
| WENRA | Western European Nuclear Regulators' Association |

Introduction

The Lithuanian National Report on Implementation of the Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations (hereinafter – the Report) was prepared according to Article 9.1 of the 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 – Nuclear Safety Directive, NSD).

The aim of the Report is to demonstrate how Lithuania is addressing the objectives of the NSD by fulfilling its obligations under the NSD.

The structure and content of the Report was prepared according to the European Nuclear Safety Regulators' Group (ENSREG) Guidelines.

In conclusion, based on the information presented in the Report, Lithuania complies with the obligations and objectives of the 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.

As defined in Article 3.1 of the NSD, in Lithuania these nuclear installations (nuclear power plant, spent nuclear fuel facilities and storage facilities for radioactive waste that are on the same site and are directly related with the indicated installations) are being operated under a licence, as defined in Article 3.4 of the NSD:

- Unit 1 and Unit 2 of Ignalina Nuclear Power Plant¹ (Ignalina NPP);
- Dry type interim spent nuclear fuel storage facility (“old” storage facility, SNFSF-1);
- Dry type interim spent nuclear fuel storage facility (“new” storage facility, SNFSF-2);
- Solid radioactive waste storage facilities (buildings 155, 155/1, 157, 157/1);
- Cemented radioactive waste storage facility;
- Bituminised radioactive waste storage facility.

All these nuclear installations are operated by licence holder –SE Ignalina NPP.

Additional information about the above indicated as well as all other radioactive waste management facilities, defined as „nuclear facilities“ in the national legislation, is given in the 2nd Lithuanian National Report on Implementation of Council Directive 2011/70/EURATOM of 19 July 2011 Establishing a Community Framework for the Responsible and Safe Management of Spent Fuel and Radioactive Waste².

¹ Both Units are permanently shutdown since 2004 and 2009 respectively. Reactors of Unit 1 and Unit 2 are defueled since December 2009 and February 2018 respectively. It is planned to remove all spent fuel from storage pools of both Units until 2022. Based on Paragraph 3 of Article 29 of the Law on Nuclear Safety the Licences for operation of the NPP Units are valid as long as nuclear fuel remains in the Units.

²http://www.vatesi.lt/fileadmin/documents/leidiniai/en/National_Report_of_Lithuania_on_Implementation_of_Council_Directive_201170_2018.pdf

Article 4 Legislative, regulatory and organisational framework

Article 4.1 National framework

In accordance with national legislation, the Convention on Nuclear Safety, other international conventions and treaties, Nuclear Safety Directive, the Republic of Lithuania undertakes appropriate measures to ensure the safety of nuclear installations under its jurisdiction through the establishment of legal framework and infrastructure necessary to maintain the effective nuclear safety regulatory system.

Legislative framework

The main laws, governing nuclear power area, are:

- Law on Nuclear Energy;
- Law on Nuclear Safety;
- Law on Radiation Protection;
- Law on the Management of Radioactive Waste.

The Law on Nuclear Energy sets general legal basis for activities involving nuclear materials, for other area of nuclear power involving sources of ionizing radiation and for management of nuclear fuel cycle materials, including radioactive waste, managed at a nuclear installation. Regulation and supervision of nuclear safety, radiation protection and safety of radioactive waste management in the area of nuclear power is carried out under this Law, the Law on Nuclear Safety, the Law on Radiation Protection and the Law on the Management of Radioactive Waste.

The Law on Nuclear Safety, among other provisions, establishes a procedure for issuing licenses, permits and other types of authorization, including main documents required and conditions to be fulfilled for granting authorization. This law also establishes the main principles for safety assessment and provides for different types of enforcement measures, including economic sanctions (penalties) for the most severe cases of noncompliance with safety requirements.

The Law on Radiation Protection establishes the legal basis for radiation protection, enabling protection of people, subject to occupational, medical and public exposure, and the environment from the harmful effects of ionizing radiation. The law establishes an authorization system for the use of radioactive materials and radiation sources, and prescribes general rules for their use. The law also provides powers and responsibilities to the authorities in this field.

The Law on the Management of Radioactive Waste establishes the rights, duties and functions of the state executive and supervisory authorities and of persons and legal entities involved in radioactive waste management.

Information regarding secondary legislation is provided in Section 4.1(b) of this Report.

Organizational framework

The legal framework establishes the VATESI as a single organization responsible for state regulation and supervision of nuclear safety. Pursuant to VATESI's mandate, provided in a Statute of VATESI, it undertakes review and assessment, inspection, preparation of nuclear safety requirements and rules, and enforcement. Competence of the VATESI is provided in the Article 22 of the Law on Nuclear Energy.

International legal instruments

Lithuania is a party to the main relevant international conventions. The list of international conventions and other international legal instruments is provided in Annex I.

4.1(a) The allocation of responsibilities and coordination between relevant state bodies

The Ministry of Energy of the Republic of Lithuania develops the State policy in the area of nuclear power and organizes, coordinates and controls its implementation, organizes the development of the infrastructure of the nuclear power in the Republic of Lithuania. The competences of other state and municipal authorities and governmental institutions (such as the Ministry of Health and its authorised institutions, the Ministry of Environment and its authorised institutions, the Ministry of Social Security and Labour and its authorised institutions, the Ministry of Education and Science, the Ministry of National Defence, the Ministry of the Interior and its authorised institutions, the State Security Department) in the area of nuclear power are set in the Law on Nuclear Energy and other legal documents and do not duplicate functions of the VATESI. Framework of governmental institutions involved in to implementation of nuclear energy policy is provided in Annex II.

Article 13 of the Law on Nuclear Safety sets the provision that the institutions and (or) organisations of the Republic of Lithuania, which are involved in the assurance of nuclear safety or whose activities may have an effect on the level of nuclear safety, must cooperate among themselves. The form and procedure of cooperation is chosen according to the nature of the tasks to be solved, adhering to the terms and conditions acceptable to all cooperating institutions and (or) organizations with prior focus on ensuring nuclear safety. The procedure for and conditions of cooperation among the institutions and (or) organizations of the Republic of Lithuania may be regulated by written agreements entered into by those institutions.

4.1(b) National nuclear safety requirements, covering all stages of the lifecycle of nuclear installations

The Law on Nuclear Energy and the Law on Nuclear Safety are the main laws that together with the Law on Radioactive Waste Management and secondary legislation made under these laws establish national nuclear safety requirements related to nuclear safety of nuclear installations during following life-stages: site evaluation, design, construction, commissioning, operation, and decommissioning. List of secondary legislation for nuclear safety providing relevant Government resolutions as well as VATESI nuclear safety requirements and rules is provided in Annex III.

Article 22 of the Law on Nuclear Energy provides the mandate to VATESI to draft and approve the requirements and rules for nuclear safety, radiation protection in the area of nuclear power, accounting for and control of the nuclear materials, physical protection of nuclear materials the quantity of which exceeds the quantity indicated in Annex 1 to the Law on Nuclear Safety and the nuclear fuel cycle materials. These requirements and rules are mandatory to all the state and municipal authorities as well as to all the persons engaged in such activities. Pursuant to the Article 5 of the Law on Nuclear Safety, the Head of VATESI approves the description of the procedure for drafting the nuclear safety requirements and the nuclear safety rules.

Pursuant to Article 22 Paragraph 1 Sub-Paragraph 11 of the Law on Nuclear Energy, VATESI has a right, within its competence and in the manner laid down by the legal acts, draw up and (or) submit to the Government the draft laws and legal acts of the Republic of Lithuania on nuclear safety, physical security, accounting for and control of nuclear materials as well as radiation protection in carrying out nuclear power related activities involving sources of ionizing radiation and on activity administration of the VATESI.

4.1(c) A system of licensing and prohibition of operation of nuclear installations without a licence

The Law on Nuclear Energy and the Law on Nuclear Safety together with the regulations under these laws establish the authorisation system for activities related to nuclear materials and nuclear fuel cycle materials, as well as for nuclear facilities during the following life-stages: site evaluation, design, construction, commissioning, operation and decommissioning as well as release from regulatory control. The supervision of closed radioactive waste repository, acquisition, keeping, use and transportation of nuclear and nuclear fuel cycle materials is also executed in accordance with the above-mentioned laws.

The Law on Nuclear Safety establishes types of licences: for construction, operation, decommissioning of a nuclear facility or facilities, as well as for supervision of closed radioactive waste repository, for acquisition, keeping, use and for transportation of nuclear and nuclear fuel cycle materials, as well as types of permits: for the first carry-in and testing of the nuclear facility using nuclear or nuclear fuel cycle materials, for first start-up of unit of nuclear power plant, for industrial operation of the nuclear facility, for start-up of the nuclear reactor after its short-term shutdown, all issued by VATESI. However, some licenced activities are divided into several sub-steps and require additional separate authorizations during various stages in the lifetime of a nuclear facility (e.g. operation and decommissioning). Licences, permits, approval of site evaluation, approval of commissioning or modification documents according the established types of modification, the safety justification documents on a decommissioning project and periodical safety review reports, authorization for the release of the nuclear facility from regulatory control are used as authorisation steps and sub-steps.

The Law on Nuclear Safety together with the Regulation on the Issue of Licences and Permits Necessary to Engage in Nuclear Power Activities regulates issuance, amendment, suspension, revocation of the suspension and revocation of licences and permits, listed in the Law on Nuclear Safety. This Regulation also provides the lists of documents, which have to be submitted for the issue of every type of licences and permits or amendments of a licence or permit, and instructions for providing documents necessary for revocation of suspension of licences and permits. Detailed requirements for the safety justification documents are determined in respective nuclear safety requirements and rules issued by the Head of VATESI.

Together with the application to issue a licence or permit a schedule of application documents has to be prepared and agreed with VATESI. The Law on Nuclear Safety sets requirements and conditions for acceptance of application, acceptance of a schedule of application document, as well as time limits for the acceptance of application and agreement on schedule. According to the VATESI's management system documents "Procedure Document for Licensing" and "Procedure Document on Review and Assessment of Safety Justifying Documents", specialists of VATESI have to assess the documents (if necessary, services of technical support organizations are used) and prepare review and assessment reports for every safety justification document in support to VATESI decisions on the issue of authorization. The review and assessment reports on nuclear installation safety analysis are available to applicant (licence holder) and its summary is available to public on VATESI website. List of the documents, under which a licence or permit is issued is required by the Regulation on the Issue of Licences and Permits Necessary to Engage in Nuclear Energy Activities to be prepared after issuance of every licence or permit. This list provides the basis for supervision of licence holder through its renewals.

The Law on Nuclear Safety sets requirements and time limits for issuance of a licence and permit. The Law on Nuclear Safety and Law on Nuclear Energy define cases, when authorisation of other state institutions, namely, State Territorial Planning and Construction Inspectorate under the Ministry of Environment, the Environmental Protection Agency under the Ministry of

Environment, Ministry of Health, the Radiation Protection Centre under the Ministry of Health, the Ministry of Energy should be issued before VATESI authorisation.

Licence or permit has to be issued for an unlimited period of time until official decision of the regulatory body in this regard. The Law on Nuclear Safety also determines conditions for making decision to withdraw a licence or permit.

The Article 22 Paragraph 4 of the Law on Nuclear Safety prohibits the activity laid down in the Paragraph 1 and 2 of the Article 22 (licences and permits related to nuclear facilities, nuclear materials and nuclear cycle materials) without an authorisation issued by VATESI.

4.1(d) A system of regulatory control of nuclear safety performed by the competent regulatory authority

Regulatory strategies

VATESI carries out inspections of facilities and activities to verify if the authorized party is in compliance with the regulatory requirements. The regulatory inspections are conducted at all stages of the lifetime of a nuclear facility: during the evaluation of a construction site for a nuclear facility, construction, commissioning, operation and decommissioning stages, as well as during supervising the closed radioactive waste repository, procuring, storing or transporting nuclear and (or) nuclear fuel cycle materials and/or nuclear dual-use items. VATESI conducts an inspections of the applicants for registered activities with radiation sources (since September of 2018), the applicants for obtaining licenses, permits and temporary permits, economic entities performing registered activities, license, permit and temporary permit holders, suppliers of goods or contractors performing works for the holders of VATESI issued licenses and permits, the entities carrying out the assessment of the construction site of the nuclear facility and other entities performing operations related to nuclear or nuclear fuel cycle materials.

Overview of the regulatory inspection and assessment process with regard to the safety of nuclear installations

The regulatory inspections of nuclear installations include planned inspections and unplanned inspections. In general, the legal basis for inspections of economic entities is set in the Law on Public Administration and it shall be followed by all state institutions, having regulatory supervision functions.

VATESI conducts three general types of inspections, namely Special inspections, Regular (routine) inspections and Technical inspections. Special inspections are carried out by VATESI inspectors to check the specific aspects of safety or to respond to the existing unexpected, unplanned, unusual situations, an incident or obtained specific information. Regular or routine inspections are carried out according to the schedules or other aspects of ordinary activities carried out by economic entity, which must be regularly inspected in pursuit of the objectives of state supervision of the economic entity's activities within the limits of competence of the VATESI. During the technical inspections VATESI inspectors observe technical checks of structures, systems and components or other equipment of nuclear facilities, functional checks of equipment or other checks carried out by economic entity in accordance with the equipment manufacturer's orders, documents of the license holder's management system or other information, which is within the competence of the VATESI.

Inspections are planned and conducted in compliance with the principle of graded approach, in order to ensure more efficient use of financial and human resources and to target inspections at activity areas which are related to nuclear safety, radiation protection and physical security and fulfilment of obligations on non-proliferation of nuclear weapons and pose a higher potential risk to employees of the license holders being supervised, population and environment.

Periodicity of inspections is established considering results of previous inspections and essential events, which has influence on organization activities.

The results of an inspection are provided in the inspection's report, and the economic entity is notified. If violations of regulatory requirements are identified during the inspection, the enforcement actions shall be applied in accordance with the procedure set forth by the laws and secondary legislation. The inspection's report together with the document formalizing the enforcement measures shall be sent to the inspected economic entity. The economic entity shall prepare plan for corrective measures within the term set by VATESI. VATESI performs supervision of the plan of implementation of corrective measures. If incompliances with good practice are identified during the inspection, the inspected economic entity shall prepare plan of measures for improvement of safety, or justify that corresponding actions are not necessary.

Nuclear Safety Requirements BSR-1.1.3-2016 "Inspections Conducted by State Nuclear Power Safety Inspectorate" is the main regulation, which defines requirements for conducting regulatory inspections. This regulation is regularly revised in order to streamline provisions related to the procedure of organizing and conducting inspections of supervised economic entities. Based on above regulation, VATESI has developed its management system document "Procedure document for inspections" PR-6.

The review and assessment of nuclear safety shall be conducted by VATESI in accordance with the Article 30 Paragraph 4 of the Law on Nuclear Safety. The main goal of regulatory review and assessment process is to verify if the safety justification document complies with normative technical documents of nuclear safety and complies with factual circumstances. The decision on the safety justification document shall be made taking into account results of the review and assessment. The review and assessment of safety justification documents are performed and documented in accordance with VATESI's management system procedure PR-5 "Procedure document for review and assessment of safety justification documents".

Basic features of inspection programmes

VATESI issues two planning documents for the systematic performance of inspections: inspection program and annual inspections plan. The program and the plan are developed in accordance with the established criteria and taking into account risk in the corresponding facility or activity. The inspection program is developed for period of five years. The inspection program is revised annually. Backbone of this program are Regular (routine) inspections with established periodicity. Annual inspections' plan is developed on the basis of the inspection program.

The regulatory inspections are focused on safety of permanently shut-down Ignalina NPP units, maintenance, fire protection, ageing management of structures, systems and components important to safety and other safety issues within competence of VATESI. VATESI also monitors how works under projects of equipment dismantling and decontamination are performed, how radioactive waste is managed, how physical security and radiation safety of the nuclear facilities and nuclear material and emergency preparedness is ensured, how employees of Ignalina NPP are trained and how an adequate level of their qualification is ensured.

4.1(e) Enforcement measures

Power for legal actions

In performing the state regulatory and supervision functions of nuclear safety, pursuant to Article 11 Paragraph 2 of the Law on Nuclear Safety, VATESI applies enforcement measures in the manner set out by the Law on Nuclear Safety and other legal acts, requires relevant persons to

implement corrective measures and (or) to eliminate the violations, and supervises the implementation of such requirements.

Overview of enforcement measures available to the regulatory body

Enforcement measures are applied in accordance with the legal principle of graded approach. All enforcement measures which are applied by VATESI are arranged progressively considering the character of violation.

Pursuant to the Law on Public Administration and Order No. 22.3-106, 24th of October, 2011, approved by the Head of State Nuclear Power Safety Inspectorate “On the Approval of Nuclear Safety Requirements BSR-1.1.4-2017 “Rules of Procedure for Applying the Enforcement Measures Set by the State Nuclear Power Safety Inspectorate”, VATESI is empowered to issue to the economic entity, individual referred to in the Article 8 Paragraph 1 of the Law on Radiation Protection, radiation protection officer, dosimetry service with mandatory requirement to eliminate insignificant violations of legal acts.

Pursuant to the Law on Nuclear Safety VATESI is empowered to impose the following administrative enforcement measures:

- to issue mandatory requirement to licence or permit holders, committing them to eliminate detected violations, to suspend the works within the time-limits set by the Head of VATESI and/or to shut-down the nuclear reactor, to decrease its capacity, to discontinue operation of other equipment or activities;
- to impose fines on legal entities according to the Article 47 Paragraphs 1 and 2 of the Law on Nuclear Safety (known as economic sanctions);
- to issue the licence or permit holder with a warning regarding the possible license or permit suspension, to suspend the licence or permit, to revoke the license or permit.

Pursuant to the Law on Radiation Protection VATESI is empowered to impose the following administrative enforcement measures:

- to issue mandatory requirement to the individual, referred to in the Article 8 Paragraph 1 of the Law on Radiation Protection, to eliminate violations of legal acts governing radiation safety and/or physical security of radiological sources, to issue a warning to suspend activities with ionizing radiation sources, to suspend activities with ionizing radiation sources;
- to issue a warning regarding the possible revocation of activity registration, revocation of activity registration;
- to issue the licence or temporary permit holder with a warning regarding the possible license or temporary permit suspension, to suspend the licence or temporary permit, to revoke the license or temporary permit;
- to issue person who provides radiation protection trainings with mandatory requirement to eliminate violations of legal acts governing radiation protection trainings;
- to issue natural person holding radiation protection attestation certificate with a warning about possible suspension of radiation protection attestation certificate, to suspend radiation protection attestation certificate, to revoke radiation protection attestation certificate;
- to issue nuclear facility dosimetry service or other individuals responsible for measurement and/or evaluation of exposure-dose with a mandatory requirement to eliminate violations of legal acts governing recognition requirements, to issue a warning about possible suspension of recognition certificate, to suspend validity of recognition certificate, to revoke validity of recognition certificate;
- to issue radiation protection expert with a warning about possible suspension of validity of radiation protection expert certificate, to suspend validity of radiation protection expert certificate, to revoke validity of radiation protection expert certificate;
- to revoke permission to transport radioactive material or validity of standard document

to transport radioactive material.

Pursuant to the Code of Administrative Offences of the Republic of Lithuania VATESI is empowered to impose administrative fines and other administrative sanctions on natural persons.

In case of a crime or a misdemeanour, VATESI transmits the information about it as soon as possible to the prosecutor or to the investigating officer who is empowered to bring the case to the court and then public works, fines, restriction of freedom or imprisonment can be imposed on natural person or legal entity. The Criminal Code sets down the liability and criminal sanctions for these crimes and misdemeanours involving nuclear facilities and nuclear or radioactive material:

- terror act;
- unlawful possession of nuclear or radioactive materials or other sources of ionizing radiation;
- threat to use or otherwise influence or unlawfully acquire nuclear or radioactive materials or other sources of ionizing radiation;
- violation of the regulations governing lawful possession of nuclear or radioactive materials or other sources of ionizing radiation;
- manufacture of plant explosives, explosives or radioactive material or development or distribution of production technology of these materials;
- smuggling of nuclear or radioactive materials or other sources of ionizing radiation.

Article 4.2 Maintenance and improvement of national framework

One of fundamental principles set in the Article 3 of the Law on Nuclear Safety is the principle of state regulation of nuclear safety, which requires to develop and maintain an effective legal framework and a public management structure (national framework) involving an independent state regulation of the activities in the area of nuclear energy. The mandate to create, maintain and improve the state regulatory and supervision system for nuclear safety, including preparation of relevant nuclear safety requirements and rules, is given to VATESI by Article 11, Paragraph 1 of the Law on Nuclear Safety and by Statute of VATESI.

Drafting of new and revision of the approved regulations, including relevant Laws and Governmental documents, is performed in accordance with Nuclear Safety Requirements BSR-1.1.1-2014 “Rules of Procedure for Drafting of Nuclear Safety Requirements and Nuclear Safety Rules“ and VATESI’s management system procedure. According to BSR-1.1.1-2014 5-year program (program for development of technical-normative documents) and annual plan for drafting of new regulations and revision of approved is established. When drafting nuclear safety requirements and rules, advanced international practice and advanced practice of foreign countries, recommendations of IAEA, WENRA and other international organizations and institutions shall be taken into account.

It is important to underline, that the Law on Nuclear Energy and the Law on Nuclear Safety were amended in September 2017 in order to transpose 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 (hereinafter – Amendment to the Nuclear Safety Directive). The amendments:

- 1) Set nuclear safety objectives, established by the Amendment to the Nuclear Safety Directive, which are mandatory for the design of new nuclear facilities and are set as an endeavour for nuclear facilities already under construction or in operation;
- 2) Improved requirements for the periodic safety review of nuclear facilities and set procedural aspects of the regulatory review of periodic safety review report;
- 3) Extended regulation related to public communication and public participation in key decisions on nuclear power;
- 4) Extended regulation of the organization of international peer reviews.

Additionally to transposition of the Amendment to the Nuclear Safety Directive, the amendments to the Law on Nuclear Energy and the Law on Nuclear Safety of September 2017 as well as the amendment to the Law on Radiation Protection of September 2017 supplemented the provisions on emergency preparedness in case of a nuclear or radiological accident in order to prepare more effectively for accidents which could occur in the territory of the Republic of Lithuania or abroad.

The amendment to the Law on Nuclear Safety of September 2017 also established new grounds for unplanned regulatory inspections, additional to general grounds, established by the Law on Public Administration.

The main objectives of the amendment to the Law on Nuclear Safety of April 2017:

1) To streamline the system of enforcement measures applicable in case of violation of legal acts regulating safety of activities in the area of nuclear energy. In particular, to define cases when certain mandatory requirements (e.g. to eliminate violations, to cease activities) are issued by the regulatory body more clearly; to heighten the most relevant procedural requirements for issuing decisions on enforcement measures up to the level of law; to introduce formal clause empowering inspectors to take immediate on-the-spot enforcement actions in case of serious violations, etc.;

2) To establish types of certificates for transport of nuclear fuel cycle, nuclear and fissionable materials issued by VATESI as required by international conventions and other instruments regulating transport of Class 7 material as well as the procedure for issuing, suspending and revoking them;

3) To improve procedures for licensing activities in the area of nuclear energy.

The Law on the Management of Radioactive Waste was amended in June of 2018 to streamline regulation concerning the designated manager of radioactive waste. Provisions on the status of the manager of radioactive waste and its main duties were amended; and Ignalina NPP was designated as a manager of radioactive waste in Lithuania. The Law was also supplemented with provisions on review and authorisation of the final closure plan of the radioactive waste repository.

See also Section 4.1(b) of this Report.

Article 5 Competent regulatory authority

Article 5.1 Competent regulatory authority

The legal framework establishes the VATESI – State Nuclear Power Safety Inspectorate – as a single organization, responsible for state regulation and supervision of nuclear safety in Republic of Lithuania.

The main duties, functions and rights of the VATESI defined in the Statute of VATESI approved by Government of the Republic of Lithuania on 21 October 1992 (Amended on 21 of November, 2012).

VATESI functions are performed according to the legal acts by VATESI state officials, public servants and employees working under employment contracts. Pursuant to Paragraph 1 of the Article 23 of the Law on Nuclear Energy the Head of the VATESI for a term of six years is appointed by the President on the recommendation of the Prime Minister. He is responsible for activities of the VATESI and accountable to the President and the Government.

Article 5.2 Independence of regulatory authority

5.2 (a) Independence of regulatory authority

National legislation provides clear division between the responsibilities and functions of VATESI and those organizations or bodies engaged in development or promotion of the nuclear energy or use of nuclear energy, including production of electricity.

Pursuant to Paragraph 3 of Article 21 of the Law on Nuclear Energy VATESI has a power to take decisions independently in carrying out its statutory functions. VATESI responsibilities are kept apart from other institutions, agencies or organizations engaged in regulating, control, administration or development of nuclear installations. To address nuclear safety issues, functions are clearly divided between the licence holders and VATESI. In case there is a need to get information or estimation of other state institution, the procedures and responsibilities of each institution are clearly described in legal acts.

VATESI acts as independent governmental institution subordinated directly to the President and the Government, hence it's place in the governmental structure helps to assure an effective separation of the regulatory body from the agencies responsible for promotion of nuclear energy.

Pursuant to Paragraph 10 of the Article 23 of the Law on Nuclear Energy, the Head and Deputy Heads of VATESI in their official capacity shall act independently from the persons engaged in activities in the field of the nuclear energy sector, also from other agencies, institutions or organisations engaged in expansion of the nuclear energy or use of nuclear energy, including generation of electricity. Independent activities imply a prohibition to be a member of a body of a legal entity, to accept other remunerated or public positions, to provide services or consultations, except the ones provided acting in the official capacity at VATESI, or to be engaged in other activities due to which a certain person, other agency, institution or organisation acting in the nuclear energy sector would or might gain unjustified competitive advantage over the persons engaged in relevant activities. A breach of this requirement shall be qualified as a serious misconduct.

The VATESI's position in the governmental framework of institutions involved in to implementation of nuclear energy policy and current VATESI organizational structure is provided in Annex II and Annex IV correspondingly.

5.2 (b) Regulatory decisions

Independence of decision-making

All the following aspects of independence in the decision-making are present in Lithuanian legislation:

– From the legal point of view, the principle of separation of functions is explicitly stated in Paragraph 3, Article 21 of the Law on Nuclear Energy, and Paragraph 3 of Article 7 of the Law on Radiation Protection. Additionally, all of the functions of VATESI and other relevant institutions are clearly defined in the laws and specified in secondary legislation, hence there are no duplications or omissions;

– Pursuant to Paragraph 5 of Article 21 and Paragraph 1 of Article 23 of the Law on Nuclear Energy, the Head of VATESI, therefore VATESI itself, is accountable to the President of the Republic of Lithuania and the Government of the Republic of Lithuania. Moreover, the Paragraphs 11–13 of the Article 23 of the Law on Nuclear Energy defines a clear finite list of objective reasons for dismissal of the Head and Deputy Heads of VATESI, which allows to ensure that the state officials making the most important regulatory decisions shall not be dismissed undue grounds;

- Pursuant to Paragraph 2 of Article 21 of the Law on Nuclear Energy, VATESI is financed from state budget. Financial resources are allocated pursuant to VATESI's Strategic Action Plan, which is approved by the Head of VATESI. As a separate owner of allocations, VATESI shall have a right to dispose the allocated funds in a discretionary manner;
- VATESI is free to define and establish the structure of VATESI within the maximum allowable number of positions;
- Other institutions do not coordinate (agree on), review or evaluate VATESI's regulatory decisions. In some cases, decisions have to be made or other activities have to be carried out by other institutions before VATESI makes a decision, for example, a permit shall be issued or conclusions received from another authority, but such decisions are made within their area of competence, therefore there is no duplication with VATESI's area of competence.

Openness and transparency of regulatory activities

Pursuant to Article 39 of the Law on Nuclear Safety:

- VATESI and licence holders upon request and on their own initiative must provide information on nuclear safety and radiation protection, except if provision of such information is not prohibited by laws;
- VATESI and licence holders are obligated to inform the state and municipal institutions and the general public as well as other persons whose activities are directly related to the licensed activities of a relevant licence holder about the conditions of nuclear safety and radiation protection by publishing reports on their activities at least once a year;
- VATESI has to deliver public announcements on the results of supervision of the implementation of nuclear safety requirements at least once a year;
- VATESI is obligated to organize meetings with municipal institutions, the general public as well as other persons in the vicinity of the nuclear facilities, in order to inform them about conditions of nuclear safety and radiation protection in these facilities;
- Organisations operating nuclear facilities must inform their workers, persons entering the site of nuclear facility and the general public on operating conditions and their compliance with normal operation conditions in a manner described in the Law on Nuclear Safety.

While implementing its regulatory functions VATESI provides consultations to interested parties, which can be oral (on the phone, during a meeting), written (e.g. emails), written consultations approved by the Head of VATESI and public consultations (published on VATESI website).

Pursuant to Article 39¹ of the Law on Nuclear Safety, the public has a right to participate in decision making process of the most important authorization decisions related to nuclear safety: approval of the site evaluation report, issuance of licences for construction, operation, decommissioning of a nuclear facility, supervision of a closed radioactive waste repository, issuance of permits for first delivery of nuclear fuel to the site of nuclear facility. In order to facilitate the implementation of this right, VATESI, as well as the applicant, publishes information related to the decision on its website and all interested persons are able to provide their comments, opinion and questions, which then need to be evaluated and considered.

Additionally, the following means of ensuring the transparency are used:

- draft legal acts are provided for comments to the other state institutions (if needed) and for comments or proposals of other interested parties by publishing it in the Legislative Information System of Chancellery of Seimas (Parliament of the Republic of Lithuania). As the database is public, all drafts are also available for the comments of the public. If there are lot of relevant and complex comments or proposals, meetings can be organized in order to discuss and solve the issues. All comments need to be evaluated.
- adopted legal acts are published in the Register of Legal Acts as well as are published on the VATESI's website;

- press releases and other publications are published on VATESI’s website;
 - information on issuance of licences, permits, other authorizations is published on VATESI’s website;
 - reports on implementation of conventions and the law of EU, VATESI annual reports (Nuclear Power Safety in Lithuania) and annual reports to the President and the Government of the Republic of Lithuania in terms of activities and finances are published on VATESI’s website.
- To improve transparency and ensure feedback, VATESI organizes surveys of stakeholders, including the general public.

5.2 (c) Financial resources of regulatory authority

VATESI is a state-financed institution financed from the national budget of the Republic of Lithuania. The sources of funding the State Nuclear Power Safety Inspectorate shall be allocations from the national budget and other lawfully generated revenue.

Financial resources are allocated pursuant to VATESI’s Strategic Action Plan, which is approved by the Head of VATESI. Every year VATESI prepares the Strategic plan for next three years period. This plan consists of mission, strategic objective, aim of programme, tasks and measures for the implementation of the mission and achievement of the strategic objective. Resources are allocated for implementation of the whole programme and each separate task. Resources are allocated for different activities commensurate with the radiation risks associated with facilities and activities, in accordance with graded approach. The draft of Strategic plan for the next 3 years is presented for the Government of the Republic of Lithuania and the Ministry of Finance. The Ministry of Finance analyses the draft of Strategic plan and establishes maximum allocation, according to the possibilities of the state budget. VATESI recalculates its budget (if it is necessary) based on the maximum allocation provided by the Ministry of Finance.

In case VATESI needs are higher than the established maximum allocation, information on the demand for additional allocation and justification of this demand for additional allocation shall be provided to the Government, Parliament, Ministry of Finance and Ministry of Energy of the Republic of Lithuania. All state institutions analyse the provided information. Revised allocations can be proposed and included into the draft of the Law on the Approval of Financial Indicators of the State budget and Municipalities budgets. Final decision is made by the Parliament of the Republic of Lithuania during adoption of the law and the President of the Republic of Lithuania by promulgating the law.

As a separate owner of allocations, VATESI shall have a right to dispose the allocated funds in a discretionary manner and in line with the established legal requirements.

VATESI submits an annual report on activities and a set of financial data regarding use of the budget allocation to the President and to the Government of the Republic of Lithuania and makes this information public by the 1st of May each year pursuant to the Paragraph 5 of Article 21 of the Law on Nuclear Energy.

5.2 (d) Human resources of regulatory authority

VATESI has established 66 full-time staff positions.

The procedure established for evaluating and planning the needs of human resources is described in VATESI’s management system document – Procedure Document of Personnel and Knowledge Management. The following main stages of evaluation and planning are defined in the procedure:

- 1) Continual evaluation of functions and workload of employees is done by their heads of divisions (senior management). This includes such cases as when a new or amended legislation is adopted and therefore positions for new functions could be needed or less positions could be sufficient;

2) If needed, reasoned proposal to establish additional positions or reduce the number of positions is prepared and submitted for review of Legal Affairs and Personnel Division and Advisor (financial matters);

3) After Legal Affairs and Personnel Division and Advisor (financial matters) issue their opinions, the proposal and the opinions are submitted to the Head of VATESI;

4) The Head of VATESI makes a decision on whether to implement the proposal. The amendments to relevant documents are drafted by Legal Affairs and Personnel Division with participation of other relevant members of VATESI staff.

VATESI sets priorities in the Strategic Plan and allocates necessary resources for the achievement of these priorities. Resources are allocated for different activities commensurate with the radiation risks associated with facilities and activities, in accordance with graded approach.

The following are key clauses of the Procedure Document of Personnel and Knowledge Management related to information and knowledge management:

- Information and knowledge shall be treated as a resource. The goal of information and knowledge management is for employees to understand the importance and significance of their functions and to be able to perform their functions properly;

- Sources of knowledge are external (public administration legal acts, standards, scientific literature, periodical publications, information in media, information in different databases, information provided by stakeholders) and internal (knowledge of employees, internal administration legal acts, internal databases and internal working documents);

- In order to ensure proper information and knowledge management, it is constantly assessed what competence is needed for VATESI (during the planning of personnel/staffing needs and during annual performance evaluation); requirements for the competence of employees are established in job descriptions; training of employees is organized (as described in an internal administration legal act, mentioned below); reports are provided after business trips (training, meetings) in order to share the knowledge; training material is shared in the internal database; VATESI employees are periodically informed about the received publications and relevant information in the media;

- Employees are obligated to regularly assess, what kind of information and knowledge is needed now and in the future, taking into account changes foreseen in the Strategic Action Plan, turnover of employees, situation in the job market, planned organizational changes, existing competence, knowledge and information, foreseen amendments to the legal acts, good practice of other regulatory bodies.

The process of training is regulated by the Rules of Training of the Staff of State Nuclear Power Safety Inspectorate and includes provisions related to goals, types, methods, organization, financing, evaluation and quality assessment of training. Pursuant to the Rules of Training, an individual initial training plan is created for a new employee, taking into account necessary competence and skills. Before approving the plans for continual training (approved for every calendar year), training needs are evaluated during annual and extraordinary evaluation of performance (carried out pursuant to the Law on Civil Service and Procedure Document of Personnel and Knowledge Management). During this evaluation, the employee and his immediate superior, among the other topics, discuss the need for improving qualification. Immediate superior, among the other information required to be provided by legal acts on performance evaluation, includes the discussed means of improving qualification in the evaluation report as a proposal, necessary to develop competence in order to perform particular functions or overall work better. These proposals are taken into account while drafting annual training plans, which specify the means for improvement of qualification.

VATESI implements systematic approach to competence management. Pursuant to Rules of Training, systematic approach to training shall be used. To achieve this purpose following training methods are applied: 1) in-class training (training at Lithuanian, international and regional

organizations and institutions); 2) practical training (training using means of information technologies); 3) independent studies (studying training material independently, including means of remote training; independent studies are coordinated by immediate superior); 4) on the job training (training while performing new functions and (or) tasks under supervision of more experienced employee or immediate superior). These methods of training all together, especially on the job training, ensures an effective development and transfer of competence and contribute to proper knowledge and information management.

Upon need VATESI orders independent analyses, review and assessment from technical support organizations (TSO).

5.2 (e) Procedures for the prevention and resolution of conflicts of interest

Legal acts regulating civil and public service provide for legal means to require the employees of VATESI to be impartial, unselfish, objective and avoid the conflict of public and private interests, including the obligation to opt out from any actions that can cause a conflict of interests (Law on Civil Service, Article 3, Paragraph 1, Sub-paragraphs 7, 8 and 14, Law on Coordinating Public and Private Interests in Public Service, the Law on Public Administration). For example, Sub-Paragraph 1 of Paragraph 1 of Article 19 of Law on Civil Service prohibits civil servant from being involved in any activity which may cause conflict of public and private interests in civil service.

Pursuant to Law on Coordinating Public and Private Interests in Public Service, persons seeking work and working in the civil service shall be required to declare private interests (Article 3, Paragraph 2). This declaration also contains information about duties and links of person with institutions and international organizations, membership of public networks and organizations and duties there; information about relatives and members of family which can cause the conflict of interest in public service, indicating the possible base for this conflict of interest. Pursuant to Article 15 of Law on Coordinating Public and Private Interests in Public Service, after termination of working position in the civil service a person shall have no right, within a period of one year, to work in a legal entity, provided that during the period of one year immediately prior to the termination of his service in public office his duties were directly related to the supervision or control of the business of said undertakings or the person participated in consideration and making of favourable for these legal entities decisions for obtaining state orders or financial assistance in the course of public contests or otherwise.

Pursuant to Paragraph 10 of Article 23 of Law on Nuclear Energy, it is prohibited for the Head and Deputy Heads of VATESI to be a member of a body of a legal entity, to accept other remunerated or public positions, to provide services or consultations, except the ones provided acting in the official capacity at the VATESI, or to be engaged in other activities due to which a certain person, other agency, institution or organisation acting in the nuclear energy area would or might gain unjustified competitive advantage over the persons engaged in relevant activities. A breach of this requirement shall be qualified as a serious misconduct.

Pursuant to Article 45 of Law on Nuclear Safety, in selecting specific contractors, the principle of impartiality of the contractors shall be applied. The scientific technical support organisations (TSO) or experts and consultants which have already participated in preparing the documents on a nuclear installation design or the documents required for the evaluation of nuclear safety that were submitted when obtaining a licence or participated in the preparation of such documents under request of the licence holder, shall not participate in performing the review and evaluation of the same documents. The TSO and the experts and consultants shall declare compliance with this requirement and their impartiality in the course of their selection carried out in the manner set out by the legal acts.

5.2 (f) Provision of nuclear safety-related information

Pursuant to Sub-Paragraphs 2 and 10 of Article 3 of Law on Public Administration, official actions of an entity of public administration must be unbiased, objective and open. The key clauses on informing the interested parties:

- Pursuant to Sub-Paragraph 5 of Article 11 of Law on Nuclear Safety, VATESI provides other state or municipal institutions, local or international organizations and society with the information on the events that are significant in terms of nuclear safety. Pursuant to Paragraph 1 Article 39 of the Law on Nuclear Safety, VATESI and the holders of licenses referred to in Paragraph 1 of Article 22 upon request and on their own initiative must provide information on nuclear safety and radiation protection, except if provision of such information is not prohibited by laws;

- Pursuant to Paragraph 1 of Article 42 of the Law on Nuclear Safety, VATESI shall regularly and publicly announce information about state of nuclear safety in the Republic of Lithuania;

- Pursuant to Paragraph 10.7 of the Statute of State Nuclear Power Safety Inspectorate, approved by the Resolution No. 1406, November 21st, 2012, of the Government of the Republic of Lithuania (hereinafter – Statute of VATESI), VATESI considers and provides information on events relevant to safety to state and municipal institutions, Lithuanian and international organizations and public; pursuant to Paragraph 11.5, provides information on state of radiation safety in practices in the area of nuclear energy involving sources of ionizing radiation to state and municipal institutions and organizations;

- Pursuant to the Article 5 of the Law on the Right to Receive Information from State and Municipal Institutions and Agencies, all information on institution's activities while performing its functions shall be announced publicly, available to anyone and provided free of charge; preference shall be given to dissemination of the information using the Internet and other electronic means.

Information regarding provisions on transparency and public information is provided in Section 8.2 of this Report.

Article 5.3 Regulatory tasks of regulatory authority

5.3 (a) Powers of regulatory authority to define national nuclear safety requirements

VATESI has duty to establish nuclear safety requirements that are mandatory for licence holders in accordance with the Law on Nuclear Safety. For the detailed information, see Section 4.1(b) of this Report.

5.3 (b) Powers of regulatory authority to require that the licence holder complies and demonstrates compliance with national nuclear safety requirements and the terms of the relevant licence

The legal provisions which provides VATESI the basis to require the licence holders to comply with the national nuclear safety requirements are defined in the Law on Nuclear Energy (Article 22, Paragraph 1) and in the Law on Nuclear Safety (Article 11, Subparagraphs 4 and 7) as well as in the Statute of State Nuclear Power Safety Inspectorate. In accordance with these provisions VATESI supervises the compliance with legal acts regulating nuclear safety.

Pursuant to the Article 6 of the Law on Nuclear Safety Head of VATESI has a right to provide mandatory requirements to all licence or permit holders, committing them to remedy the detected infringements in nuclear safety (more details about enforcement actions provided in Section 4.1 (e) of this Report).

These powers can be implemented during inspections, when infringements in nuclear safety are detected, or during review and assessment process.

5.3 (c) Powers of regulatory authority to verify compliance through regulatory assessments and inspections

The detailed information concerning regulatory assessments and inspections is given in the Section 4.1(d).

5.3 (d) Powers of regulatory authority to carry out regulatory enforcement actions

VATESI, pursuant to the Subparagraph 9.17 of the Statute of VATESI, applies enforcement measures as prescribed by laws and other legal acts of the Republic of Lithuania. Enforcement measures described in Section 4.1(e) of this Report are applied and imposed by VATESI independently.

Article 6 Licence holders

6.1 (a) Licence holder's responsibility for nuclear safety. Licence holder's responsibility for the activities of contractors and sub-contractors that might affect the nuclear safety

Article 16 of the Law on Nuclear Safety determines that full liability for the nuclear safety of a nuclear installation and for nuclear safety in carrying out other activities with nuclear and/or nuclear fuel cycle materials shall solely fall on persons that are engaged in such activities and hold relevant licences, permits or certificates.

The applicant or the licence holder have a right to involve technical support organisations and external experts, specialists, and consultants for carrying out the analysis and justification of nuclear safety and for preparing other related documents as well as for performing an independent verification of such documents, however, liability for the results of such activities shall fall on the licence holder (Law on Nuclear Safety, Article 30, Paragraph 5).

Section 1 (“Supply of safety-important products”) of Chapter VI of Nuclear Safety Requirements BSR-1.4.1-2016 “Management system“, define the requirements for supply of safety-important products, which also include services and works. Based on these requirements SE Ignalina NPP has developed procedures related to procurement, selection, approval and control of contractors and sub-contractors (Note: Nuclear Safety Requirements BSR-1.4.1-2016 define them as “suppliers”. “Supplier” by definition includes “sub-suppliers”) and quality assurance of safety-important products. These procedures are the part of Integrated Management System (IMS) of SE Ignalina NPP.

General requirements for procurement are specified in the IMS Manual. Detailed requirements for procurement process (including those for selection, evaluation and control of suppliers) are set forth in the Procurement Procedure and respective working documents. The graded approach is applied, so special attention is paid to control of the suppliers of safety-important products. Procurement documents contain requirements for the supplier organization, products to be supplied, supplier’s capabilities, personnel qualifications and management system. The supplier’s management system shall be equivalent at the least to the requirements of the standard LST EN ISO 9001. In some cases, such as procurement of construction works, other management system standards may apply too.

After signing the contract, the selected safety-important product supplier is included into the List of Approved Safety-related Product Suppliers, which is reviewed and updated regularly. This list is communicated to VATESI annually.

Control of suppliers and their sub-suppliers are being performed in accordance with the Procedure for Assessment of Safety-related Product Suppliers and Sub-suppliers and Control of their Activities at the INPP. Suppliers are allowed to start their on-site activities at the INPP after they develop a Quality Assurance Plan, which is subject to approval and control by the interested INPP department(s) and Safety Surveillance & Quality Management Department. The Supplier's personnel shall pass special training and certification by the INPP Personnel Division, covering aspects of radiation safety, fire safety, security, health & safety, safety culture and security culture as well as emergency preparedness as appropriate. In case of serial production quality assurance plans are not required. For all contractors and sub-contractors INPP developed a special brochure on the application of Safety culture with STAR methodology. For additional information, please see the Article 13 of "Eighth Lithuanian National Report under the Convention of Nuclear Safety".

6.1 (b) Demonstration of nuclear safety

Law on Nuclear Safety defines that the analysis and justification of nuclear safety in the area of nuclear power activities as well as other activities involving nuclear and/or nuclear fuel cycle materials shall be carried out by the applicant or the licence holder; whereas the analysis and justification of nuclear safety during the evaluation of the construction site of a nuclear power plant shall be carried out by the persons implementing a nuclear installation project. The results of the analysis and justification of nuclear safety shall be independently verified following order set out by the Head of the VATESI. The applicant or the licence holder shall be responsible for the performance of such independent verification, whereas in case of the construction site of a nuclear power plant evaluation – the responsibility for performance of an independent verification falls on persons implementing the nuclear installation project.

The license in the area of nuclear power activities can be issued only in case of approval of safety documentation by VATESI. The total list of necessary documentation to be submitted for approval is set in the Resolution No. 722, June 20th, 2012, of the Government of the Republic of Lithuania on the Approval of Regulations on the Issue of Licenses and Permits for Activities in the Nuclear Power Area for each type of the license. The lists are made taking into account speciality of each licence, using graded approach concerning the potential magnitude and nature of the hazard relevant for the nuclear installation and its site or relevant activity.

The main safety documents required for issuance of licences are Safety Analysis Reports either Reports on Justification of Activity's Safety. The principal legal provision including relevant links to each type of licences concerning these reports are set by the Law on Nuclear Safety. The detailed scopes of Safety Analysis Reports are set in the secondary legislation approved by VATESI for each type of nuclear installation using graded approach concerning the potential magnitude and nature of the hazard relevant for the nuclear installation and its site.

6.1 (c) Regular assessment, verification, and continuous improvement

Pursuant to Article 32 Paragraphs 7 and 7¹ of the Law on Nuclear Safety, a licensee shall perform a periodic safety analysis and justification and prepare a periodic safety review report at least every 10 years after the issuance of a permit for the commercial operation of a nuclear installation, or after approval by VATESI of the last safety case of corresponding nuclear installation, if the nuclear installation was commissioned before September 2017. The periodic safety review report shall be submitted to the VATESI for review and assessment. The scope of the periodic safety review includes review of the siting issues of nuclear installations as well as

verification of compliance of nuclear installation with design documentation and requirements for nuclear safety, radiation and physical protection and emergency preparedness. The outcomes of periodic safety review may be corrective measures that shall be implemented within defined schedule, if safety of the installation may be jeopardized within next period of operation, and safety improvement measures. The implementation of corrective measures is subject of regulatory control, which is performed through review and assessment of relevant documents and regulatory inspections.

According to the Article 17 of the Law on Nuclear Safety the operating organization on a regular basis shall analyse the state of nuclear safety, radiation and physical protection, and improve it. Due to that reason the Safety Improvement Program (SIP) shall be established and implemented in accordance with secondary legislation issued by VATESI. The implementation of the SIP is controlled by VATESI.

Periodic safety review of the INPP Unit 1 was conducted and the respective report was developed by the early 2017, pursuant to the conditions set forth in licence for operation of the INPP Unit 1. The content and the scope of the periodical safety review of the INPP Unit 1 was chosen in accordance with the Law on Nuclear Safety and regulatory requirements and agreed with the VATESI. It covered the areas recommended by the IAEA Specific Safety Guide No. SSG-25 “Periodic Safety Review for Nuclear Power Plants”.

The Periodic safety review report of Ignalina NPP Unit 1 was approved by VATESI in 2018.

Periodic safety review of the INPP Unit 2 is in the development stage. Mentioned periodic safety review also covers other nuclear installations.

In response to the event at Japan’s Fukushima Daiichi Nuclear Power Plant, the European “stress tests” were conducted in 2011 – 2012 at Ignalina NPP according to specification agreed by ENSREG and the corresponding safety improvement measures were implemented.

The implementation of the measures linked to “defence-in-depth” principle at the Ignalina NPP is controlled by VATESI in the frame of control of implementation of SIP and other measures such as implementation of separate modifications, and by regulatory inspections.

Implementation of “defence-in-depth” principle in the designs of nuclear installations are controlled by VATESI performing review and assessment of documentation for safety justification.

Also see Section 6.2 (b) of this Report.

6.1 (d) Management system of licence holder

Pursuant to principles provided in Article 3 of the Law on Nuclear Safety effective administration and management with the view to secure safety shall be created and maintained by all persons related to the activities of nuclear installations. The highest priority in the management system of such persons shall be the assurance of nuclear safety.

The main legal provisions for licence holders to have integrated management system, which gives due priority to nuclear safety are determined in the Article 17 of the Law on Nuclear Safety and Nuclear Safety Requirements BSR-1.4.1-2016 “Management system“. This requirement applies for all stages in the lifetime of nuclear installation.

The SE Ignalina NPP has established an integrated management system (hereinafter, IMS), which provides a single framework for the arrangements and processes necessary to address all the goals and objectives of the organization. These goals and objectives include safety, quality, environmental, health, security and economic elements and other considerations such as social protection. The application of the IMS requirements is graded so as to deploy appropriate resources, on the basis of the consideration of the significance and complexity of each product or process, the hazards and the magnitude of the potential impact associated with the safety, health, environmental,

security, quality and economic elements of each product or process and the possible consequences if a product fails or a process is carried out incorrectly.

The effectiveness of the IMS is monitored and measured to confirm the ability of the processes to meet the established requirements and objectives, and identify opportunities for improvement. Management system reviews are conducted by the senior management of SE Ignalina NPP annually, in compliance with provisions of BSR-1.4.1-2016 “Management system“, to ensure the suitability and effectiveness of the IMS, and its ability to enable the objectives set for the organization to be accomplished. Quality management issues are discussed at monthly meetings chaired by General Director.

The SE Ignalina NPP’s management system documents, reports of audits, including those performed at contracted organizations, reports on safety culture monitoring and assessment, results of safety culture surveys, the documentation of IMS modifications, including organisational changes, are submitted to VATESI for regulatory review in accordance with provisions of BSR-1.4.1-2016 “Management system“.

In accordance with the Nuclear Safety Requirements BSR-1.1.3-2016 “Inspections conducted by the State Nuclear Power Safety Inspectorate” (Paragraph 4.4.) the management systems are the subject for regulatory inspections. Periodicity of inspections in the area of management systems is defined in the VATESI’s 5 year inspection programme. For SE Ignalina NPP case, the inspections in the area of management system are performed annually. VATESI also performs the inspections of the activities of the INPP related to conducting the audits at the contractors’ organizations involved into the INPP’s decommissioning projects. The goal of such inspection is to ascertain how the INPP is performing the assessments (audits) of the management systems of the suppliers that are relevant to safety and of the capability of these suppliers to meet the requirements of the procurement documents.

6.1 (e) Licence holder’s on-site emergency procedures, severe accident management guidelines and arrangements for responding effectively to accidents

Articles 34¹, 35 and 38 of the Law on Nuclear Safety sets responsibility for license holders to ensure the preparedness for possible nuclear and radiological emergencies and their prevention at nuclear facilities.

License holders must have in place technical and organisational measures for managing nuclear and radiological accidents in the nuclear facilities and limiting the consequences of such accidents. Requirements for the technical and organisational measures aimed at managing nuclear and radiological accidents in the nuclear facilities and limiting the consequences of such accidents shall be set out by the State Nuclear Power Safety Inspectorate.

The Law on Nuclear Safety sets the obligation for license holders to prepare and test an on-site emergency preparedness plan.

Emergency preparedness plans shall be developed at all nuclear facilities and shall remain effective (as amended) until the full decommissioning of such facilities, with the exception of radioactive waste disposal facilities the emergency preparedness plans of which shall remain effective until the end of post-closure surveillance of radioactive waste disposal facilities (repositories).

Nuclear Safety Requirements BSR-2.1.2-2010 “General Requirements on Assurance of Safety of Nuclear Power Plants with RBMK-1500 Type Reactors” set the objectives, guidelines, principles and the main safety criteria for nuclear facilities operating RBMK-1500 type reactors. This regulation puts the obligation for operator of nuclear facility to make analysis and prepare the list of possible beyond design accidents and accordingly prepare severe accident management guidelines (SAMG). SAMG’s shall be consistent and harmonized with operational procedures, emergency preparedness plan and emergency instructions. The arrangements for external assistance are set as well.

In accordance with the SE Ignalina NPP management system requirements for safety documentation, the guidelines for management of beyond the design basis accidents are included into the documentation package of the SE Ignalina NPP emergency preparedness plan. Special guidelines for management of beyond the design basis accidents (SAMG/RUZA) were developed and introduced at Ignalina NPP in 2008. At current time three guidelines are still valid:

- Manual on use of beyond design-basis accidents management guidelines;
- RUZA-RB “Fission products release mitigation of Unit 1 and Unit 2”;
- RUZA-B “Spent fuel storage pools conditions management of Unit 1 and Unit 2”.

Guidelines for management of beyond the design basis accidents, in accordance with Nuclear Safety Requirements BSR-2.1.2-2010, is a subject to approval by VATESI.

The Ignalina NPP emergency preparedness plan shall be agreed with VATESI and other institutions of the state management and surveillance and shall be updated every three years or after important changes in the NPP operation and activities.

Nuclear Safety Requirements BSR-1.3.1-2020 “Enforcement of Emergency Preparedness in Nuclear facilities” determines the requirements for the functions and infrastructure of the emergency preparedness of nuclear installations. BSR-1.3.1-2020 sets requirements and guidelines for preparations of nuclear facilities emergency preparedness plan and emergency instructions. According to BSR-1.3.1-2020 emergency preparedness plans shall be tested before issuing licenses specified in Article 22 Paragraph 1 Subparagraph 2-5 and permits specified in Paragraph 2 Subparagraph 1-3 of the Law of Nuclear Safety. Emergency preparedness plans must be tested by selecting the beyond design emergency scenario described in the emergency preparedness plan. Nuclear facility emergency preparedness plans and emergency instructions shall be reviewed every 3 years after their approval or in case of changes in the operating stage or activities of nuclear facility and taking into account:

- the changes in activities of nuclear facility or closed radioactive waste disposal facility;
- the changes in numbers of employees acting in Emergency Preparedness Organisation of nuclear facility;
- corrective measures established during operational experience analysis;
- recommendations determined during exercise;
- the changes of legislation regulating the nuclear safety and radiation protection.

According to BSR-1.3.1-2020 licence holder shall ensure the management of emergency in case the emergency occurs at the same time in several nuclear facilities and (or) several facilities of the same nuclear facility owned by the licence holder. A number of employees shall be ensured that would be sufficient for working 24 hours a day during the elimination of the emergency and the elimination of its consequences if the emergency occurs at the same time in several nuclear facilities and (or) several facilities of the same nuclear facility owned by the licence holder.

Emergency preparedness plans must be tested out at least once a year during table and (or) functional exercise, and at least every 3 years during combined full scale exercise. At the frequency determined by the licence holder, the exercise for eliminating the emergencies occurring at one licence holder’s nuclear facility and the emergencies occurring at several licence holder’s nuclear facilities at the same time, shall be organized.

The licence holder must ensure the prevention of nuclear and (or) radiological emergencies and incidents and, should they occur, must ensure the immediate readiness to:

- implement the measures in order to restore the nuclear facility to the state ensuring long-term safety function performance;
- protect the people at the nuclear facility and its sanitary protection zone;
- mitigate the consequences of the emergency;
- classify the emergency;
- report the emergency to the VATESI and, other state and municipal authorities and institutions participating in the response to the emergency;

- obtain assistance from civil protection system forces and apply measures to eliminate the emergency;
- acquire necessary services, works and (or) means from individuals and (or) legal entities outside the nuclear facility site for mitigating and eliminating the consequences of the emergencies;
- implement the monitoring of contamination with radionuclides at the nuclear facility and its sanitary protection zone.

VATESI carries out inspections of nuclear facilities to verify if the licence holder is in compliance with the emergency preparedness regulatory requirements (more information on inspection activities is provided in Section 4.1 (d) of this Report). Additionally, license holder documentation (Emergency preparedness plans, emergency instructions, list of beyond design basis accidents and analysis of consequences, hazard assessment evaluation report) shall be provided for VATESI revision. Implementation of emergency preparedness requirements are also verified by taking part in licence holder emergency exercises, reviewing exercise reports and corrective measures plans.

6.1 (f) Financial and human resources of licence holder. Arrangements of licence holder to ensure necessary human resources (including their contractors and subcontractors under their responsibility) with appropriate qualifications and competences

Pursuant to Paragraph 1 of Article 23 of Law on Nuclear Safety, the licences and permits shall be issued to persons with sufficient capacities in terms of technological and financial resources, management system and human resources allowing to properly fulfil the conditions required by the licence or permit and to ensure nuclear safety.

Article 17 of Law on Nuclear Safety imposes a requirement that organisations operating nuclear installations must have the material, financial and human resources that are sufficient for ensure nuclear safety in compliance with the legal acts and technical standard documents of nuclear safety.

Nuclear Safety Requirements BSR-1.4.1-2016 “Management system“ provides that licence holder must ensure necessary financial, material, human and technical resources are in place as well as administration rules and technical requirements, scientific support and effective management system during all stages of lifetime of a nuclear installation.

During the process for confirming the adequacy of applicant’s financial resources VATESI verify the applicant's financial capacity in the Register of Legal Entities (Paragraph 21 of The Rules of Procedure on Issuing of Licences and Permits in the Area of Nuclear Energy).

Nuclear Safety Requirements BSR-1.4.3-2017 “Managing Human Resources in the Field of Nuclear Energy” provide requirements on staffing, qualification, training and retraining of staff for nuclear installations.

Additionally, it’s required from a licensee always to have sufficient number of in-house competent staff understanding the safety basis of a plant (Paragraph 70 of Nuclear Safety Requirements BSR-1.4.1-2016 “Management system“), as well as to understand the actual design and operation of the plant in all plant stages.

The regulatory requirements (Paragraphs 12 and 13 of the Nuclear Safety Requirements BSR-1.4.3-2017 “Managing Human Resources in the Field of Nuclear Energy”) and quality management procedures applied by INPP require to monitor sufficiency of staff for safe operation, their competence, and suitability for safety work on a regular basis and to document results of such assessments. For instance, assessment of the staffing level at INPP is annually indicated within the annual INPP safety report. In order to ensure the sufficient number of safety related employees the Programme for long-term provision of safety related personnel has been developed. To ensure the employees reserve the List of Safety Related Employees Reserve, the Long-term Plan for Preservation of Competencies of the Safety Related Employees and The Safety Related Employees Recruitment and Training Plan of the for years 2019 - 2023 are developed at the SE Ignalina NPP.

VATESI verifies the adequacy of the licence holder's human resources during regulatory inspections and other activities including assessment of description and justification of the organisational structure of SE Ignalina NPP and during assessment of the list of positions important for safety of the nuclear facility. SE Ignalina NPP's organisational changes, are submitted to VATESI for regulatory review in accordance with provisions of Nuclear Safety Requirements BSR-1.8.2-2015 "Categories of Modifications of Nuclear Facility and Procedure of Performing the Modifications".

Pursuant to Article 22 Paragraph 1 Sub-Paragraph 14 of the Law on Nuclear Energy VATESI examine the knowledge of the management personnel responsible for nuclear safety, radiation protection, physical security, ensuring meeting nuclear non-proliferation obligations and independent supervision of these processes.

Pursuant to Article 17 Paragraph 2 Sub-Paragraph 7 of the Law on Nuclear Safety licence holder must ensure that persons supplying services, goods and works to licence holders, as well as persons who supply services, goods and works to those persons and whose activities may influence licence holder's activities in the area of nuclear safety, radiation and physical protection or the fulfilment of international obligations of the non-proliferation of nuclear weapons, would hold sufficient staff resources, including staff competence, to ensure the capability of fulfilling their obligations in compliance with legislation in the field of nuclear safety, radiation and physical protection and international obligations of the non-proliferation of nuclear weapons as well as with normative technical documents of nuclear safety.

The procurement process is managed within the SE Ignalina NPP IMS. General requirements for procurement are specified in the IMS Manual. Detailed requirements for procurement process (including those for selection, evaluation and control of suppliers) are set forth in the Procurement Procedure and respective working documents. The graded approach is applied, so special attention is paid to control of the suppliers of safety-related products. Procurement documents contain requirements for the supplier organization, products to be supplied, supplier's capabilities, personnel qualifications and management system.

Article 7 Expertise and skills in nuclear safety

Licence holders

Pursuant to Article 50¹ Paragraph 1 of the Law on Nuclear Energy licence holder shall ensure that the employees whose tasks are related to the enforcement of nuclear safety, radiation protection, physical protection and nuclear non-proliferation obligations, are competent to discharge the functions assigned to them.

Pursuant to Article 17 Paragraph 2 Sub-Paragraph 2 of the Law on Nuclear Safety licence holder must ensure that the number of competent employees on staff in the organisation in the areas of nuclear safety, radiation protection, emergency preparedness, physical protection and fulfilment of international obligations of the non-proliferation of nuclear weapons is adequate to ensure operations of the organisation and its preparedness to respond to nuclear and radiological accidents and nuclear incidents pursuant to legislation in the field of nuclear safety, radiation and physical protection and international obligations of the non-proliferation of nuclear weapons as well as in accordance with normative technical documents of nuclear safety.

Nuclear Safety Requirements BSR-1.4.3-2017 "Managing Human Resources in the Field of Nuclear Energy" defines requirements on staffing, qualification, training and retraining of staff for nuclear installations.

The human resource management process of the SE Ignalina NPP is described in the IMS procedure “Description of the Human Resources Management Procedure”, MS-2-014-1 and includes arrangements for the education and training.

Regulatory authority

Pursuant to Paragraph 1 of Article 24 of Law on Nuclear Energy, “State Nuclear Power Safety Inspectorate shall employ qualified personnel with experience and special knowledge necessary to perform functions of this institution, based on the qualification, education and other criteria established for certain positions. State Nuclear Power Safety Inspectorate shall build and further develop such competences of the employees of State Nuclear Power Safety Inspectorate which would allow drawing conclusions regarding the safety level of operation of nuclear installations and other activities involving nuclear materials and the nuclear fuel cycle materials and (or) other activities in the area of nuclear energy involving sources of ionizing radiation and the compliance of such safety level with the requirements set forth in the legal acts and technical standard documents, also adopting the required decisions in the area of regulation.”

Rules of Procedure for Planning of Human Resources establishing the following tools for better long-term management of human resources as a part of its integrated management system:

- procedure for management turnover of personnel: all positions are divided into groups indicating their likelihood of turnover, availability of human resources for replacement, the importance of the position, etc.; a plan of measures for compensation of departure of staff is composed for positions, that are deemed to make highest impact upon leaving and most difficult to replace;
- tool for working time tracking, which allows to evaluate the distribution of functions between positions and divisions, adequacy of workload. It can also help to indicate areas where improvement of competence is needed based on time spent on different tasks;
- different methodologies for evaluating how many and what kind of employees are needed in long-term perspective.

Statute of Training of VATESI Personnel regulates methods of training, methods of evaluation of competence, conclusion of 5-year individual plans for improvement of competence, detailed procedures for training new employees and evaluation of their suitability to start working individually, periodical (every five years) evaluation of knowledge of inspectors, procedures of organizing training, etc.

The requirements for training of state, municipal and other institutions which has established Emergency centres are defined in the Law on Civil Protection (Article 23) and determined in the Regulation of Training of Civil Protection, approved by the Resolution No 718 of the Government of the Republic of Lithuania on 7th June 2010. This Regulation establishes purposes, goals, frequency, duration and etc. of the training of members of emergency centres.

The procedures for training and exercising of members of VATESI emergency centre are described in the procedure for Preparedness for management of emergency situations in case of nuclear and radiological emergencies No. 22.3-82 approved on 15th of April 2020 by Head of VATESI. According to Paragraph 44 of the aforementioned procedure, a 3 year period training and exercise programme shall be prepared.

Methodology of training, required qualifications for emergency centre members and types of exercises are described in the Section VII of VATESI Emergency Management Plan in Case of Nuclear and Radiological Emergency No. 22.3-111 approved on 10th of May 2019 by Head of VATESI.

Article 8 Transparency

Article 8.1 Information to workers and the general public

Pursuant the Law on Provision of Information to the Public of the Republic of Lithuania and Law of Nuclear Safety and other legal acts VATESI and the licence holders must inform both the state and municipal institutions and the general public as well as other persons whose business activities are directly related to the licensed activities of a relevant licence holder about the conditions of nuclear safety.

8.1 (a) Information on normal operating conditions of nuclear installations to workers and the general public

Pursuant to Paragraph 1 of Article 39 of the Law on Nuclear Safety, VATESI and the holders of licences referred to in paragraph 1 of Article 22 of the Law on Nuclear Safety must inform both the state and municipal institutions and the general public as well as other persons whose business activities are directly related to the licensed activities of a relevant licence holder about the conditions of nuclear safety in the manner required under the Law on Provision of Information to the Public of the Republic of Lithuania and other legal acts. Pursuant to Paragraph 1 of Article 42 of the Law on Nuclear Safety, VATESI shall regularly and publicly announce the information about the state of nuclear safety in the Republic of Lithuania. Pursuant to Paragraph 3 of the Article 6 of the Law on the Right to Receive Information from State and Municipal Institutions and Agencies, all information on institution's activities while performing its functions shall be announced publicly, available to anyone and provided free of charge; preference shall be given to dissemination of the information using Internet and other electronic means.

Pursuant to following legal acts any person has a right to refer VATESI with the request to get information and get it if its dissemination is not restricted by laws:

- Rules of Procedure of Provision of Information on Environment to the Public in the Republic of Lithuania, approved by the Resolution No 1175, 22nd of October, 1999, of the Government of Lithuania;
- Law on Public Administration and Rules of Consideration of Applications to Receive Information and Provision of Services in Public Administration Institutions, approved by the Regulation No 875, 22nd of August, 2007, of the Government of Lithuania.

Information and communication in the field of competence

VATESI

In line with the ENSREG Draft Guidance for National Regulatory Organisations Principles for Openness and Transparency, VATESI enhancing communication tools to ensure openness and transparency of regulatory activities. Ongoing dialogue and interaction with main licensees and other stakeholders are the main priorities in daily communication tasks.

While implementing delegated supervisory functions, VATESI provides public consultations on request from legal entities or on its own initiative. Meetings with licensees and consultations help to promote dialogue and more favourable working environments with a high degree of transparency.

Annually VATESI issues report on the activities of regulation in nuclear safety, presents this report to the President, the Government and the Parliament authorities, and provides information to the local authorities, international organisations and the general public. For e.g. in the autumn of 2019, three public meetings were held in Ignalina, Zarasai and Visaginas, during which VATESI

and RSC experts overviewed the radiological impact of nuclear facilities on the public and the environment.

Accessible website www.vatesi.lt for general public and the licensees is in place. On this website, licensees can find comprehensive information on all aspects of regulatory decisions. Website includes information on specific events and unusual incidents, annual VATESI and national reports, press releases, relevant guidelines and legislation, information about main VATESI activities and performance indicators. Up to date information on electronically basis provided in Lithuanian and English languages. General public and media inquiries are handled in a timely manner. Information and documents are being made public according to national legislation regulating restricted information. Public opinion surveys regarding nuclear safety issues were organised by VATESI once in two-year period and public feedback is used to improve regulatory performance activities.

SE Ignalina NPP

The communication policies and other relevant documents in the field are prepared according to the national law and international legislation.

Compliance with the principles of objectivity, clarity, speed and regularity is the dissemination of information on the progress of INPP decommissioning, the scale and complexity of the work carried out, the public's awareness of achievements, the design and construction of new facilities, the dismantling of INPP equipment, the management of radioactive waste, and the publicity of information on the use of the funds allocated to the enterprise.

Communication with local residents through local media is constantly maintained, information about the activities of SE Ignalina NPP is periodically provided to the residents of Visaginas and meetings with them are organized. Information on www.iae.lt website is updated on a regular basis in Lithuanian, English and Russian languages. Also excursions to the exhibition hall and inside the INPP premises are organized for the enterprise's guests.

Information about the activities and results is made available for the enterprise's employees through the internal communication channels: internet, monthly newsletter, e-mails, quarterly reviews.

Public participation in decision making

Public participation in decision making is regulated by the Law on Nuclear Safety, and the nuclear safety requirements BSR-1.1.5-2017 "Rules of Procedure for Public Participation in Decision Making in the Area of Nuclear Energy" developed by VATESI. Information on where the public might participate in the making of the most important decisions on nuclear safety is provided in Section 8.2 of this Report.

8.1 (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

According to Article 41 of the Law of Nuclear Safety upon the occurrence of a nuclear or radiological emergency or nuclear incident in a nuclear facility as well as in case of a nuclear accident, radiological accident or nuclear incident related to the use of nuclear and/or nuclear fuel cycle materials, the licence holder must promptly provide information regarding such occurrence in the manner established by the plans for emergency preparedness.

In case of a nuclear or radiological emergency, the licence holder shall take part in the implementation of the National Plan for the Protection of Population in the Event of a Nuclear or Radiological Emergency (off-site plan), which shall be prepared in accordance with Article 38 of

the Law on Nuclear Safety, and shall provide relevant information to the institutions specified in the plan.

In case of accidents at Ignalina NPP the general public and workers are informed according to the SE Ignalina NPP Emergency Preparedness Plan. The information is spread via relevant means of internal and external communication, such as website, emails, intranet, TV screens, faxes, etc.

In case of accidents, there are implemented two steps notification process:

- performance of prompt mutual notification of top managers, workers, Regulatory Body, state institutions and media (public)(approximately it takes less than one hour);
- performance of written notification to Regulatory Body, state institutions and media (public) with more detailed information about situation, consequences, and recommendations (it performs periodically during management of accident).

According to the National Plan for the Protection of Population in the Event of a Nuclear or Radiological Emergency State Nuclear Power safety Inspectorate shall:

- provide information to the interested international and national institutions and agencies about the technical circumstances of the accident, projected course of its development and applicable mitigatory actions, characteristics of release of radionuclides from the nuclear facility to the environment, also other information relating to a nuclear or radiological accident at the nuclear facility;

- report to the Prime Minister the condition of the nuclear facility, the degree of danger caused by a nuclear or radiological accident at the nuclear facility, and the nuclear facilities personnel protection measures that are being taken;

- provide information to the public about the nuclear or radiological accident at the nuclear facility within its jurisdiction and in accordance with the procedure established in the Plan and the scheme presented in Annex 7 to the Plan;

- provide information to other states, the European Commission and international organisations (IAEA, etc.) about the technical circumstances, course and consequences of liquidation of the nuclear or radiological accident at the nuclear facility, also about the projected and actually established emergency class with reference to the IAEA's International Nuclear and Radiological Event Scale and recommended protective actions, in accordance with the procedure set in the legal acts of the Republic of Lithuania and European Union regulating provision of information in the case of a nuclear or radiological accident and other international legal acts.

The State Emergency Management Operational Centre coordinated by Fire and Rescue Department under the Ministry of Interior is responsible for providing information to public in case of emergency. The State Emergency Management Operational Centre shall activate the Press Centre in the Press Service of Government of Republic of Lithuania or in Fire and Rescue Department.

In case of an emergency State and municipality's institutions, public offices and citizens are notified using existing notification public warning and informing system, which consists of 421 central and 406 local electric sirens and cell-broadcast facilities. After notifying signal, the information about situation, possible consequences and process of liquidation of emergency is vocally spread through companies and institutions emergency sound systems and using national and local broadcasters.

The citizens of municipalities are notified using technical and organizational means described in each municipality's emergency management plan. In places not covered by notification network system citizens are informed by using existing communication system, cell-broadcast facilities and specialized vehicles equipped with sound amplifying systems. Also courier or local police services could be used for spreading the information.

According to the order approved by Director of the Fire and Rescue Department, the heads of national importance facilities and those registered in the registry of dangerous facilities are responsible for notification of public, national and municipal institutions and public offices which could be affected by emergency.

Ministries and other national institutions are responsible for notifying their own staff. The Fire and Rescue Department shall notify the population, using national television and radio channels, most of commercial broadcasting companies (which work in FM), as well as through the wire radio communication network.

In accordance with the Law on Nuclear Energy (Article 40) as well as international treaties and/or agreements between the State Nuclear Power Safety Inspectorate and foreign authorities, the State Nuclear Power Safety Inspectorate shall provide urgent information to nuclear safety supervisory authorities and other authorities concerned in the neighbouring European Union Member States, other European Union Member States, other states and international organisations about the fact of a nuclear and/or radiological accident in a nuclear facility, a radiological accident occurring in the course of activities involving ionizing radiation sources in the area of nuclear power or the fact of a nuclear incidents as well as the technical circumstances, process of liquidation and consequences of such unusual events, and the forecasted or established class of the nuclear or radiological accident or nuclear incident according to the INES scale and the recommended actions for the protection of the population.

In 1994 Lithuania has joined to Convention on Early Notification of a Nuclear Accident and in 2000 to Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. VATESI is responsible for implementation of Convention on Early Notification and Fire and Rescue Department is responsible for implementation of Convention on Assistance. According to IAEA's EPR-IEComm requirements, VATESI is National Warning Point, National Competent Authority for events abroad and Fire and Rescue Department – National Competent Authority for domestic events. VATESI is also a contact point and competent authority in ECURIE arrangements. Mutual assistance policy between Lithuania and the neighbouring countries is based on bilateral agreements:

- Agreement between the Government of the Republic of Lithuania and the Government of the Kingdom of Denmark on the exchange of information and cooperation in the fields of nuclear security and radiation safety has been signed on 16 March 1993;

- Agreement between the Government of the Republic of Lithuania and the Government of the Kingdom of Norway on early notification of nuclear accidents and on the exchange of information on nuclear facilities has been signed on 13 February 1995;

- Agreement between the Government of the Republic of Lithuania and the Government of the Republic of Poland on early notification of a nuclear accident, and co-operation in the field of nuclear safety and radiation protection has been signed on 2 June 1995;

- Agreement between Lithuania and Latvia on Early Notification of Nuclear Accidents, Exchange of Information and Cooperation in the Field of Nuclear Safety and Radiation Protection has been signed on 3 October 2003;

- Agreement between the Government of the Republic of Lithuania and the Government of the Kingdom of Sweden on collaboration within the field of Emergency Prevention, Preparedness and Response (signed in 2003);

- Agreement on early notification of Nuclear and Radiological Emergencies between the VATESI and the Swedish Radiation Safety Authority of the Kingdom of Sweden has been signed on 1 January 2009.

Agreement between the State Nuclear Power Safety Inspectorate and the Ministry of Emergency Situations of the Republic of Belarus for early notification about emergencies in nuclear facilities and for exchange of nuclear safety important information has been signed on 25 May 2020.

Article 8.2 Public information taking into account other overriding interests

Pursuant to Paragraph 1 of Article 39 of the Law on Nuclear Safety, VATESI and license holders shall provide persons concerned, whether at the request of the persons concerned or on the

initiative of the licence holders, with available information related to nuclear safety, radiation and physical protection and international obligations of the non-proliferation of nuclear weapons, unless such information is qualified as unauthorised in accordance with Paragraph 10 of Article 39¹ of the Law on Nuclear Safety or on other statutory grounds. In addition, pursuant to Article 39 of the Law on Nuclear Safety:

- VATESI and licence holders are obligated to inform the general public as well as other persons whose activities are directly related to the licensed activities of a relevant licence holder about the conditions of nuclear safety and radiation protection by publishing reports on their activities at least once a year;
- VATESI has to deliver public announcements on the results of supervision the implementation of nuclear safety requirements at least once a year;
- VATESI is obligated to organize meetings with municipal institutions, the general public as well as other persons in the vicinity of the nuclear facilities, in order to inform them about conditions of nuclear safety and radiation protection in these facilities;
- Organisations operating nuclear facilities must inform their workers, persons entering the site of nuclear facility and the general public on operating conditions and their compliance with normal operation conditions in a manner described in the Law on Nuclear Safety.

Pursuant to Article 39¹ of the Law on Nuclear Safety, general public shall have the right of access to the documents required for the purposes of the decisions referred to in Paragraph 1 of Article 39¹ of the Law on Nuclear Safety, except for documents and information contained therein the disclosure of which is prohibited under law. Pursuant to Paragraph 10 of the same Article, information not subject to the provisions of the Law of the Republic of Lithuania on the Right to Obtain Information from State and Municipal Institutions and Agencies shall not be made available for the general public in the process of public participation in decision-making in the area of nuclear power, except for: information constituting commercially confidential information, if it is related to the discharge of radionuclides into the environment important for environmental protection; personal forename, surname and position where the application documents contain this information with indication of the person who has signed, endorsed or approved the document to be submitted and where the forename, surname and position are specified in the information of appointment to carry out the functions when such appointment requires notification to the VATESI in accordance with its legislation.

Article 8.3 Cooperation activities with competent regulatory authorities of other Member States in the vicinity of a nuclear installation

The nearest foreign countries from INPP are the Republic of Latvia and Republic of Belarus. They were informed about plans to build and operate new Interim Spent Nuclear Fuel Storage Facility (SNFSF-2) and were provided with the Environmental Impact Assessment documentation had the opportunity to comment to it.

Results of National Environmental Radiological Monitoring are available on Environmental Protection Agency website; moreover data of gamma dose rate from national network are available on EURDEP website in on-line mode. INPP provides gamma dose rate data on its website as well (<https://www.iae.lt/en/enviromental-protection/180>).

Belarus has possibility to check the level of activity concentration of radionuclides in the Drūkšiai Lake itself. Once per year joint sampling of water from Drūkšiai Lake is organised with participation of The Republican Center for Hydrometeorology, Radiation Control and Environmental Monitoring (Belarus) and Environmental Protection Agency (Lithuania). Received results are compared. Once per 2 years, when sampling is done on Lithuania site, sampling is done directly from discharge channel.

Moreover, Ministry of Environment of the Republic of Lithuania, after the receipt of requests from Belarusian side to carry the post-project analysis for the INPP projects for which transboundary Environmental Impact Assessment was carried out, conducted consultations with other competent Lithuanian authorities and the developer regarding the necessity and scope of the post project analysis for INPP decommission projects. Even though the monitoring data at the INPP site and the region hasn't revealed any factors that may result in significant adverse transboundary impacts, aiming to ensure full transparency and cooperation and fully address the concerns of Belarusian authorities, it was agreed to carry out the post-project analysis for the new Interim Spent Nuclear Fuel Storage Facility (SNFSF-2).

Government of Republic of Lithuania has signed a number of international agreements with neighbouring countries and other states in the field of cooperation assistance in case of emergency situations. The Agreements with neighbouring countries in vicinity of the borders of Lithuania are:

- Agreement between the Government of the Republic of Lithuania and the Government of the Republic of Poland on mutual support in the event of natural calamities and large-scale accidents (signed in 2000);
- Agreement between Belarus and Lithuania on Cooperation in the Field of Prevention and Liquidation of Natural Disasters and Severe Emergencies (signed in 2003);
- Agreement between the Government of the Republic of Lithuania, the Government of the Republic of Estonia and the Government of the Republic of Latvia (signed in 2017).

Cooperation activities between Lithuania and the neighbouring countries in the vicinity of Lithuanian borders is also based on bilateral agreements under Convention on Early Notification of a Nuclear Accident and presented in Section 8.1 (b) of the Report.

Due to possible nuclear accidents and incidents at new nuclear power plant in Belarus, Lithuanian competent authority came to an agreement with Belarus competent authority for early notification in accordance with Convention on Early Notification of a Nuclear Accident. To ensure complete and transparent exchange of information the Agreement between Lithuanian and Belarus nuclear safety regulatory authorities on the Early Notification of a Nuclear Accident and on the Exchange of Information on Nuclear Facilities and Nuclear Activities, was signed on 25th May, 2020.

Article 8.4 Public participation in the decision-making process relating to the licensing of nuclear installations

VATESI applicants, licence holders, other interested parties involved as well as public are considered in authorization process as VATESI stakeholders for external communication as prescribed in the VATESI's "Manual of Integrated Management System" and the "Procedure Document on Monitoring of Interested Parties".

According to legal acts regulating provision of information to the public, VATESI has to provide information on VATESI decisions and on the bases for decisions to grant or refuse an authorisation. Usually, the following information is provided:

- list of licences, permits or temporary permits issued and licensed activities (or refusal of an authorisation) on VATESI website;
- comments to the public and regulatory summary for safety evaluation report.

As regards the authorisations for site evaluation, construction, commissioning, operation, decommissioning of a nuclear facility as well as supervision of closed radioactive waste repository, additional provisions are established by the Law on Nuclear Safety. For the purposes of implementation of this Law Order No. 22.3-182, 23rd of October, 2017, approved by the Head of VATESI "On the Approval of Nuclear Safety Requirements BSR-1.1.5-2017 "Rules of Procedure for Public Participation in Decision-Making in the Area of Nuclear Energy" were adopted.

According to aforementioned Nuclear Safety Requirements, VATESI and (or) licence holder should:

- provide information to the public on the commencement of authorisation process;
- ensure that the public has access to VATESI's draft decisions on authorisations and safety justification documents;
- consider comments provided by the public on VATESI's draft decisions and safety justification documents;
- organize public hearing according to the described procedure (if needed).

Procedure on how VATESI provides information to the public is described in VATESI's management system document "Procedure on Public Communication".

Article 8a Nuclear safety objective for nuclear installations

According to the Law on Nuclear Safety VATESI has the duty to issue nuclear safety requirements against which the design of nuclear installations shall be evaluated. According to Article 34¹ of the Law on Nuclear Safety license holder must ensure implementation of the objective of preventing accidents during all stages of life time of nuclear installation.

According to Article 34¹ of the Law on Nuclear Safety VATESI during preparation of the safety requirements shall follow the objectives that are transposed from Article 8a of the Nuclear Safety Directive, taking into account the relevant provisions recommended by ENSREG, WENRA and IAEA. The Law on Nuclear Energy requires for performing analysis of possible consequences in case of extreme conditions of very low probability for emergency preparedness purposes. Such analysis is included in licensing process and may be used to evaluate compliance of a nuclear installation with the safety objectives set by Article 8a of the Nuclear Safety Directive.

There are no nuclear installations for which a construction licence is granted for the first time after 14 August 2014 and which are within definition of the nuclear installation used in the directive in Lithuania.

Article 8b Implementation of the nuclear safety objective for nuclear installations

Article 8b.1 Application of defence-in-depth

The obligation to apply defence-in-depth at all stages of lifetime of nuclear installation are set in Paragraph 1 of the Article 35 of the Law on Nuclear Safety. More detailed requirements for defence-in-depth are set in the secondary legislation issued by VATESI, taking into account nature of the type of the installation.

Status with regard to the application of the defence-in-depth concept

The Ignalina NPP safety is provided by consistently implementing "defence-in-depth" principle based on the system of physical barriers preventing spread of ionising radiation and radioactive waste to the environment and the system of technical and organizational measures which protects these barriers and maintains their efficiency and in case of their degradation it mitigates the harmful effects of ionising radiation to the population and the environment. After the final shut down of INPP Unit 1 and Unit 2 the extent of application of "defence-in-depth" principle was considerably reduced but remains in corresponding extent, for example, a number of inspections of pressure boundary is reduced, but was still foreseen taking into account state of the installations.

At Ignalina NPP, the defence-in-depth application is part of the Integrated Management System, which includes the main provisions on responsibility and basic principles of behavior with regard to safety, quality, and ensuring staff qualifications at the policy level and in procedures. Any decisions, modifications and actions related to safety system and components are subject to the agreement with VATESI.

Access to premises containing safety systems and components is restricted. Maintenance of those safety systems and components specially related with nuclear fuel and radioactive waste management performs strictly by additional permission and by competent personnel.

A set of technical and organisational measures concerning management of beyond design basis accidents were implemented at the INPP. The corresponding procedures for beyond design basis accidents management are developed at the INPP. Due to the permanent down of INPP the extent of measures is reduced. The management of severe accidents at the INPP was comprehensively reviewed during the European “stress test” and recommended additional measures were implemented. Regular drills and training exercises related to beyond design basis accidents management are performed for the INPP staff.

Article 8b.2 The measures of competent regulatory authority and the licence holder to promote and enhance an effective nuclear safety culture

The measures of competent regulatory authority and the licence holder to promote and enhance an effective nuclear safety culture

Pursuant principles defined in Article 3 of the Law on Nuclear Safety the regulatory authority and the license holder shall give the highest priority to safety in their all activities.

The Article 17 of the Law on Nuclear Safety establish responsibility of licence holder to assure and develop safety culture. The Resolution of the Government of the Republic of Lithuania “Rules of Procedure for Issuing Licenses and Permits in the Area of Nuclear Energy” defines among other Description of safety culture and security culture development measures as obligatory license application document, which shall be submitted to VATESI for regulatory review and assessment.

Specific regulatory requirements in the area of safety culture for licence holders to promote and enhance an effective nuclear safety culture are determined in the Nuclear Safety Requirements BSR-1.4.1-2016 “Management System”. This regulation also defines the requirements for license holder to develop the integrated management system documentation, which includes provisions for safety development and improvement, self-assessments and independent assessments with purpose to seek continuous improvement in safety performance.

This regulation (Paragraph 26, 27 and 34) e.g., provides that:

- management members at all levels shall foster individual and collective work values to be followed while ensuring safety and compliance with the provisions of the management system, establish and specify in the management system documentation the requirements for attitude to safety and behaviour of employees, including the suppliers, that would meet the aforementioned values;

- management members at all levels shall promote and encourage such behaviour and attitude towards safety that enhances safety culture and security culture, shall be role models for others in how to apply the organisation’s management system and the values fostered therein, and shall demonstrate disapproval of actions and conditions that are not compatible with safety;

- the organisation shall provide its employees, including the supplier’s employees, with opportunities to express their personal views and give suggestions about the safety matters, and inform the senior management about safety issues and process improvement possibilities. The organisation shall maintain such work environment where any employee is free to raise safety-

related questions with no adverse consequences. In addition, the organisation's management system shall specify measures designed to ensure that all safety-related questions raised by employees are registered and the necessary improvement actions are taken, if necessary.

In order to comply with the safety culture requirements defined in the Nuclear Safety Requirements BSR-1.4.1-2016 "Management System", SE Ignalina NPP has developed the IMS documentation e.g., Safety culture and self-assessment management procedure and procedures for evaluation of safety culture and security culture.

Development and maintenance of a strong safety culture at SE Ignalina NPP is built upon:

- education the plant personnel to adhere to the principles of a strong safety culture;
- instructing of contractors and subcontractors on importance safety issues to assure a safety and security at the Plant;
- periodical evaluation of safety culture and security culture;
- perform of annual self-assessment of activities;
- proper evaluation of operating experience.

On annual basis the Action Plan on safety culture and security culture development at SE Ignalina NPP is being developed and approved by Director General. It defines specific measures on implementation of the SE Ignalina NPP safety culture and security culture development programme. Mainly those measures include the results of self-assessment of activities and evaluation of safety culture indicators.

The main objective of the safety culture programme is to orient behavior and attitude of the SE Ignalina NPP personnel and contractors, also plant management methods to the achievement of the highest safety priority.

The results of safety culture evaluation and principles of strong safety culture and additional information related to the safety culture are posted on the SE Ignalina NPP internal website. This information is constantly updated.

Assessment of safety culture and security culture is based upon survey of the personnel and safety culture indicators measurement. Assessments of safety culture at SE Ignalina NPP were performed in 1998, 2000, 2004, 2008, 2013 and 2016. Assessment method is based on the questionnaires developed considering the safety culture features applied in the world's nuclear power generation industry.

Safety culture indicators at SE Ignalina NPP were established by using attributes of strong safety culture (as defined in IAEA Safety guide, GS-G-3.5. Appendix I) and by analysing indicators and data of IMS processes. Those indicators have quantitative nature and reflect the conditions under which safety at the plant is ensured, e.g. plant personnel preparedness, operational experience appliance, position of top management to behaviour and results of work of personnel, security culture aspects, as well as events with human factor.

Each structural unit of SE Ignalina NPP annually performs self-assessment. The scope of self-assessment includes:

- evaluation of annual work plans implementation and achievement of MS process indicators over the last year;
- evaluation of implementation of corrective actions related to results of internal and external independent assessments;
- evaluation of personnel preparation and qualification;
- evaluation of inspections results of workplaces, instrumentation, equipment etc. which were performed over the last year;
- evaluation of preparedness of procedures related to operation and technical maintenance of safety related SSC;
- evaluation of improving proposals of employees;
- preparing suggestions to safety culture development programme for the next year.

– Quarterly meetings between SE Ignalina NPP and VATESI senior management are held. The aim of these meetings is to exchange information about the status of the current affairs at NPP, to discuss the important safety and organizational issues.

The significance of safety culture, the lessons from the plant operational experience and practical examples of safety culture related performance of work are included into the training process of personnel. The safety culture training course was updated for plant and contractor personnel in the light of self-assessment and independent assessment results. During this training course the personnel is familiarized with the strong safety culture principles, safety culture evaluation methods and the results of safety culture evaluation for the past period.

For all contractors and sub-contractors SE Ignalina NPP uses a special brochure on safety culture with STAR methodology application.

In order to fulfil the safety third principle (priority of safety in activities) that is defined in the Article 3 of the Law on Nuclear Safety, VATESI has established internal process and procedure (Procedure for Development of Organizational Culture) for development of organizational culture. Main objectives of this process are to promote appropriate performance of employees in the activities related to safety culture and regularly assess level of safety culture in the organization.

Procedure for Development of Organizational Culture defines safety culture monitoring, assessment and improvement measures. All VATESI employees are encouraged to identify and report safety culture related problems, to propose improvement measures.

Assessment of safety culture at VATESI consists of monitoring, self-assessment and annual survey of VATESI staff based on the safety culture attributes as defined within the IAEA safety standard GS-G-3.1. All VATESI employees participate in the survey. Survey report is prepared by the process owner, reviewed by the management and presented to all VATESI staff.

Safety culture surveys are organized at VATESI each year from 2015. Questionnaire consisted of 5 groups of questions based on the following safety culture attributes identified in the IAEA safety standard GS-G-3.1: Safety is a clearly recognized value, Leadership for safety is clear, Accountability for safety is clear, Safety is integrated into all activities, Safety is learning driven.

VATESI internal process of Development of organizational culture ensures:

- Engagement of VATESI staff into safety culture related activities;
- Introduction to VATESI staff important aspects and attributes of safety culture;
- Possibility to identify existing safety culture trends and areas for improvement.

See also Section 6.1 (d) of this Report.

Arrangements by the licence holder to register, evaluate and document internal and external safety significant operating experience

Pursuant the Paragraph 5 of Article 35 of the Law on Nuclear Safety the licence holder have to analyse its own and external operating experience in the nuclear energy field as well as to exchange such operating experience with other interested parties and take necessary preventive and/or corrective measures.

Nuclear Safety Requirements BSR-1.4.4-2019 “Use of Operating Experience in the Field of Nuclear Energy” obligates the licence holder to have arrangements to register, evaluate and document internal and external safety significant operating experience and defines the main requirements for identification, reporting, screening and analysis of operating experience; collection information on operating experience and dissemination of lessons learned.

In accordance with the Nuclear Safety Requirements BSR-1.4.4-2019 “Use of Operating Experience in the Field of Nuclear Energy” operating experience shall be systematically exercised in all stages of the lifecycle of a nuclear installation.

The obligation of the license holder to report events with a potential impact on nuclear safety to the competent regulatory authority

According to the Paragraph 12 of the Article 32 of the Law on Nuclear Safety, the license holder have to analyze and report on unusual events to VATESI. Nuclear Safety Requirements BSR-1.4.4-2019 “Use of Operating Experience in the Field of Nuclear Energy” defines reporting criteria and procedure.

The main criteria for reportable events and requirements for notification are established in the Nuclear Safety Requirements BSR-1.4.4-2019 “Use of Operating Experience in the Field of Nuclear Energy”. All safety significant events shall be reported to VATESI. Verbal notification shall be made as soon as possible, but not later than within 1 hour with a subsequent written notification within 24 hours. Event investigation report shall be prepared and presented to VATESI within 30 days.

Arrangements for education and training, in accordance with Article 7.

The arrangements for education and training of personnel of VATESI and licence holders are explained in the description to Article 7.

Article 8c Initial assessment and periodic safety reviews

Siting

According to the Paragraph 1 of Article 32 of the Law on Nuclear Safety, the safety analysis and justification of a construction site of a nuclear installation shall be performed prior to starting the design phase. This safety analysis and justification can be performed by economic entity which is implementing a nuclear installation project. The results of such analysis and justification shall be presented in a report on evaluation of the construction site, which shall be approved by VATESI. VATESI can approve the report on evaluation of the construction site only after verifying that the results of the analysis and justification of the construction site are in line with requirements of the legal acts and after having received positive decisions from other institutions, such as Geological Survey, that are involved in the process of reviewing of the report, according to the Law on Nuclear Safety and the Resolution No. 83, January 25th, 2012, of the Government of the Republic of Lithuania on the Approval of Rules of Procedure of the Assessment of the Nuclear Facilities’ Site Evaluation Report. The content of the report is set by secondary legislation approved by VATESI. The site is not suitable for construction of a nuclear installation in case of existence of capable fault. In case, if the proposed site has deficiencies another than capable fault, adequate compensatory measures shall be proposed.

Design and Construction

The Law on Nuclear Safety (Paragraph 1 of the Article 22) set two types licences concerning design and construction – license for construction of a nuclear installation, and licence for construction and operation of a nuclear installation. These licences may be issued only in case if the design of nuclear installation is justified by safety analysis reports. The Law on Nuclear Safety (Article 32) provides the main legal provision for preparation, approval and modification of safety analysis reports and interlinks with issuance of particular licences and permits. Preliminary safety analysis report, updated safety analysis report and final safety analysis report are foreseen at various stages of licensing process, from authorisation of construction till permit for industrial operation.

According to the Law on Nuclear Safety VATESI has duty to issue safety requirements for content of safety analysis reports and technical safety requirements against that design of nuclear installations shall be evaluated. According to Article 34¹ of the Law on Nuclear Safety VATESI shall draft the safety requirements following the objectives that are transposed from Article 8a of the directive, taking into account provisions recommended by ENSREG, WENRA and IAEA.

Overview of regulatory requirements concerning periodic safety review issues is provided in Section 6.1 (c) of this Report.

Pursuant to the regulatory requirements the periodic safety re-assessment at least every 10 years is performed not only for the reactor units, but also for the INPP nuclear fuel and radioactive storage facilities. The last periodic safety reviews for the INPP nuclear facilities were performed as follows:

- INPP Unit 1 for the period 2007-2016 with the respective report developed by the early 2017 followed by the review by the regulatory body. The approval of the periodic safety review report was received on 18 June 2018;
- The old Interim Spent Nuclear Fuel Storage Facility for the period 2005-2014 with the respective report developed by the early 2015 followed by the review by the regulatory body. The approval of the periodic safety review report was received on 27 June 2016;
- The Bituminised Radioactive Waste Storage Facility for the period 2002-2012 with the respective report developed in 2012 followed by the review by the regulatory body. The approval of the periodic safety review report was received on 02 January 2013;
- INPP Unit 2 for the period 2010-2019 with the respective report to be developed by the IIIQ 2020.

Therefore it could be stated that the regulatory requirements regarding the periodic re-assessment of the safety of the INPP nuclear facilities are fulfilled and implemented in a timely manner.

Article 8d On-site emergency preparedness and response

The main laws that set and describe the general criteria for ensuring on-site emergency preparedness and response in case of nuclear and radiological emergencies are:

- the Law on Nuclear Energy. It sets the general obligations and assigns responsibilities for licence holders and state institutions for preparedness and response to nuclear and radiological emergencies at nuclear facilities. This law sets the order of preparation and approval of the state plan for protection of population in case of a nuclear or radiological emergency (off-site plan);
- the Law on Nuclear Safety. It sets responsibilities for license holders to ensure the preparedness for possible nuclear and radiological accidents, their prevention at nuclear installations. This law sets the obligation for license holders to prepare and test an on-site emergency preparedness plan.

National Plan for Protection of Population in case of Nuclear or Radiological Emergency allocates responsibilities and coordination mechanisms for competent authorities and institutions taking part in response to radiological or nuclear emergencies.

Nuclear Safety Requirements BSR-2.1.2-2010 “General Requirements on Assurance of Safety of Nuclear Power Plants with RBMK-1500 Type Reactors” set the objectives, guidelines, principles and the main safety criteria for nuclear facilities operating RBMK-1500 type reactors. This document puts the obligation for operator of nuclear facility to make analysis and prepare the list of possible beyond design accidents, which may lead to severe reactor core damage or melting.

Nuclear Safety Requirements BSR-1.3.1-2020 “Emergency Preparedness and Response Requirements for the Operators of Nuclear Facilities” set the main requirements for emergency preparedness at the nuclear facilities. The Requirements oblige the operator of nuclear facility to

assure prevention of accidents and incidents and, in the event of an accident, to perform the emergency preparedness tasks immediately. This document requires the operator of nuclear facility to develop the Emergency Preparedness Plan complying with these Requirements. According BSR-1.3.1-2020 Licence Holder shall:

- approve the structure of the Emergency Preparedness Organisation and determine the links between the structural divisions of the Emergency Preparedness Organisation;
- determine the way to coordinate the actions between the divisions of the Emergency Preparedness Organisation;
- determine the functions and responsibility of each structural division of the Emergency Preparedness Organisation;
- determine the way to coordinate the actions of the structural divisions of the Emergency Preparedness Organisation of the nuclear facility with state and municipal authorities and institutions participating in the response to the Emergency.

BSR-1.3.1-2020 is based on IAEA Safety Guide GS-R-2, GS-R-2.1, “Method for Developing Arrangements for Response to a Nuclear or Radiological Emergency” (TECDOC-953 update) and is being revised according to IAEA General Safety Requirements No. GSR Part 7.

The Ignalina NPP has developed emergency plan for preparedness and response to radiological and nuclear emergencies. This plan is coordinated with National Plan for Protection of Population in case of Nuclear or Radiological Emergency (off-site plan). Ignalina NPP emergency plan has foreseen the procedures for coordination of actions between licence holder, competent authorities and organizations during emergency. The effectiveness of coordination is tested during full scale exercises.

Analysis of legal national acts and regulatory body requirements were performed against *Directive 2013/59/Euratom*. Respectively gaps were identified and national legal acts together with regulatory body requirements were revised and updated as necessary.

The EURATOM requirements for emergency preparedness and response are covered by these national legal acts: The Law on Civil Protection; The Law on Nuclear Safety; The Law on Radiation Protection; National Plan for Protection of Population in case of Nuclear or Radiological Emergency; Nuclear Safety Requirements BSR-1.3.1-2020 “Emergency Preparedness and Response Requirements for the Operators of Nuclear Facilities”; Hygiene standard 73:2018 “Basic Radiation Protection Standards”; Hygiene Standard 99:2019 “Protective Actions of the Public in Case of Nuclear or Radiological Emergency”.

Article 8e Peer reviews

Peer review of national framework and competent regulatory authorities

The full scope IAEA Integrated Regulatory Review Service (IRRS) mission took place in Lithuania from 18 to 29 April 2016. The IRRS mission was hosted by VATESI and Radiation Protection Centre (RSC). The international review compared the Lithuanian regulatory framework for safety against IAEA safety standards as the international benchmark for safety.

Self-assessment of compliance to the IAEA safety standards was performed before the IRRS mission. Number of possible improvements of legislation were identified. Lithuanian legislation and the regulatory documents were reviewed and updated after the performed self-assessment. Advance reference material, including the self-assessment report, was presented to the IAEA two months before the mission.

- The IRRS mission has covered the following areas (modules):
- Responsibilities and functions of the government;

- Global nuclear safety regime;
- Responsibilities of the regulatory body;
- Management system of the regulatory body;
- Authorization;
- Review and assessment;
- Inspection;
- Enforcement;
- Development of regulations and guides;
- Facilities and activities (Radiation sources applications, Nuclear power plants, Fuel cycle facilities (Spent fuel storage facilities), Waste management facilities, Decommissioning);
- Emergency preparedness and response (regulatory aspects);
- Additional Areas: Transport, Control of Medical Exposures, Occupational Radiation Protection, Control of Radioactive Discharges and Materials for Clearance, Environmental monitoring associated with authorized practices for public radiation protection purposes, Control of chronic exposures & remediation;
 - Interfaces with Nuclear Security;
 - Tailored module for new NPP build based on SSG-16.

The IRRS mission has covered all civilian nuclear and radiation source facilities and activities regulated in Lithuania.

The IRRS team identified a number of good practices and made recommendations and suggestions which indicated improvement areas for enhancing the effectiveness of regulatory functions in line with IAEA safety standards.

The IAEA presented report of IRRS mission to the Republic of Lithuania was submitted also to the Commission and to the Member States. The report is open for the public and published on VATESI internet site www.vatesi.lt.

Action plan for implementation of the IRRS mission recommendations and suggestions was prepared and approved by the Minister of Energy, the Minister of Health, the Minister of Education and Science and the Head of the State Nuclear Power Safety Inspectorate. The approved Action plan cover all 59 IRRS mission recommendations and suggestions. Total majority of the foreseen actions are already implemented. The report on implementation of recommendations and suggestions is already prepared as a basis for the IRRS follow-up mission advance reference material.

The IRRS follow-up mission was planned to be organised from the 10th to 18th of May 2020. All preparatory activities were implemented. Advance reference material, including the Report on implementation of recommendations and suggestions received during the IRRS mission to Lithuania in 2016, was prepared and presented to the IAEA on the 10th of March 2020. However, the IRRS follow-up mission had to be postponed due to the COVID-19 pandemic. New dates for the IRRS Follow-up mission (6 – 14 of September 2020) are foreseen and agreed between the IAEA and Lithuanian institutions.

Topical peer review

The topical peer review legal aspects are set in the Law on Nuclear Safety (Article 9) and Resolution No. 1116, December 20th, 2017, of the Government of the Republic of Lithuania on the Approval of Rules of Procedure for Review of National Nuclear Safety Regulation System and Evaluation of Nuclear Installation' Safety. Chapter IV of this resolution particularly is dedicated for organizing topical peer reviews that required by directive.

Lithuania was not actively participating in the first EU topical peer review as far as it was relevant to operating nuclear power plants and research reactors.

Conclusion

In conclusion, based on the information presented in the Report, Lithuania complies with the obligations and objectives of the 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.

ANNEXES

Annex I

List of international conventions and other international legal instruments

- Convention on Nuclear Safety, entered into force on 24th of October, 1996;
- Joint Convention On the safety of spent fuel management and on the safety of radioactive waste management, entered into force on 14th of June, 2004;
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency 1986, entered into force on 22nd of October, 2000;
- Convention on environmental impact assessment in a transboundary context (ESPOO), 1991, entered into force on 11th of April, 2001;
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992, entered into force on 27th of July, 2000;
- International Convention for the Suppression of Acts of Nuclear Terrorism, 2005, entered into force on 19th of August, 2007;
- Treaty on the Non-Proliferation of Nuclear Weapons (NPT), 1968, entered into force on 23rd of September, 1991;
- The Comprehensive Nuclear Test Ban Treaty, 1996;
- European agreement concerning the international carriage of dangerous goods by road (ADR) 2003, entered into force on 1st of January, 2003;
- Memorandum of Understanding (Version Ronne, 25 to 27 August 1998) for the Transport of Dangerous Goods in ro-ro Ships in Accordance with the International Maritime Dangerous Goods Code (IMDG Code), the Requirements of the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) and the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR), 1998, entered into force on 20th of June, 2002;
- Vienna Convention on Civil Liability for Nuclear Damage, 1963, entered into force on 15th of November, 1992;
- Convention on Physical Protection of Nuclear Material, 1979, entered into force on 6th of January, 1994;
- 2005 July 8th Amendment to the Convention on the Physical Protection of Nuclear Material;
- Convention on Early Notification of a Nuclear Accident, 1986, entered into force on 17th of December, 1994;
- Convention on access to information, public participation in decision-making and access to justice in environmental matters, 1998, entered into force on 28th of April, 2002;
- Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention, 1988, entered into force on 20th of December, 1993;
- Convention on Supplementary Compensation for Nuclear Damage, 1997 (Signed, not ratified);
- Protocol to Amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage, 1997 (Signed, not ratified);
- Membership in IAEA – 18th November 1993;
- NPT related agreement, INFCIRC/413, entered into force 15th October, 1992;
- Additional Protocol, entered into force 5th July 2000;
- Improved procedures for designation of safeguards inspectors (accepted);
- Agreement between the Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, Ireland, the Italian Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the European Atomic Energy Community and the International Atomic Energy Agency in implementation of Article III (1) and (4) of the Treaty on the non-proliferation of nuclear

weapons (78/164/Euratom) 1978, entered into force 21st of April, 2007;

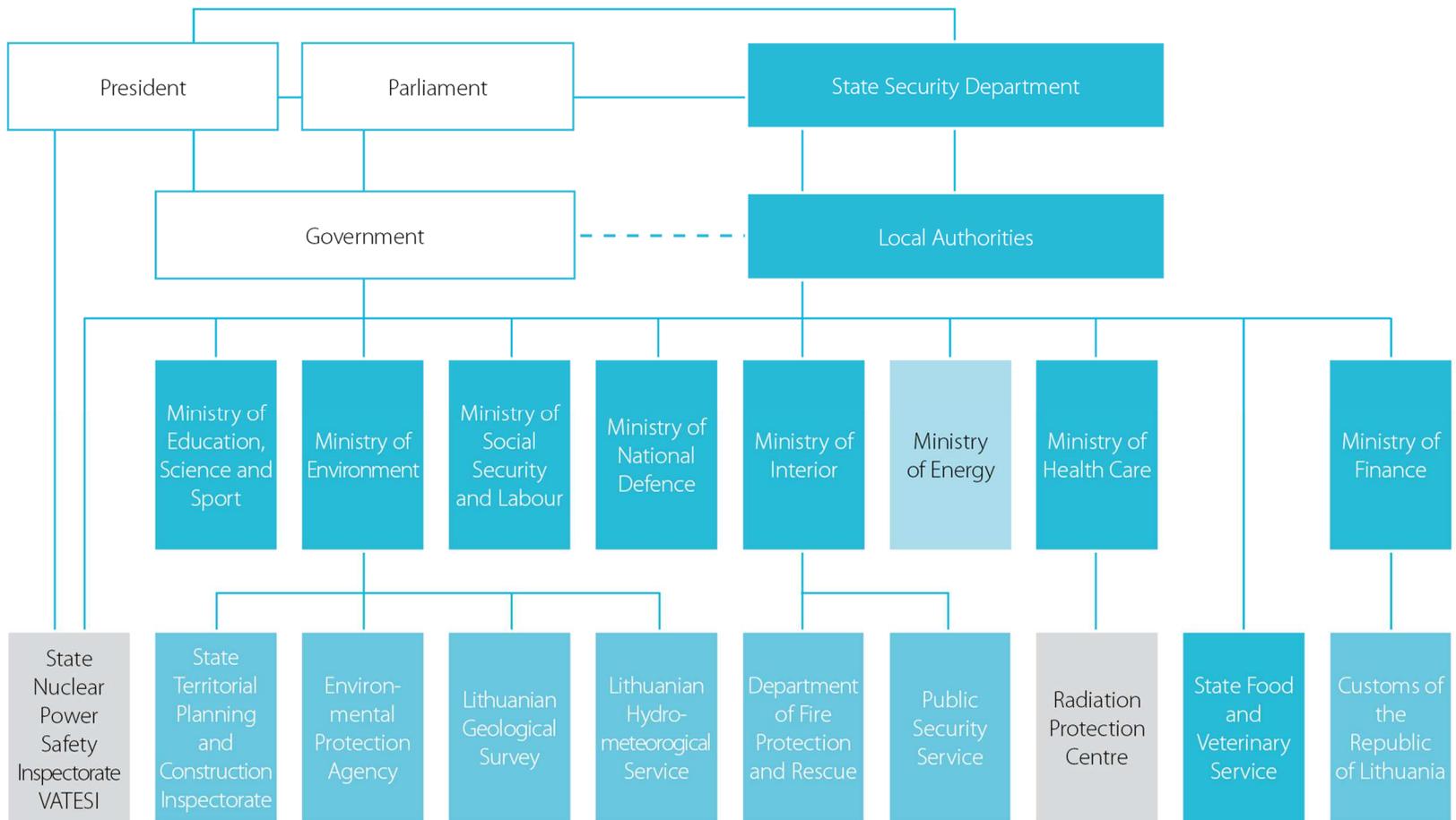
- Additional Protocol to the Agreement between the Republic of Austria, the Kingdom of Belgium, the Kingdom of Denmark, the Republic of Finland, the Federal Republic of Germany, the Hellenic Republic, Ireland, the Italian Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the Portuguese Republic, the Kingdom of Spain, the Kingdom of Sweden, the European Atomic Energy Community and the International Atomic Energy Agency in implementation of Article III(1) and (4) of the Treaty on the Non-proliferation of Nuclear weapons (notified under document number COM(1998) 314) (78/164/Euratom), 1998, entered into force 1st of January, 2008;

- Supplementary agreement on provision of technical assistance by the IAEA, entered into force 22th February 1995;

- Agreement on the Privileges and Immunities of the IAEA, 1959, entered into force 28th of February, 2001.

Annex II

Lithuanian governmental framework of institutions involved in to implementation of nuclear energy policy



Annex III

List of secondary legislation for nuclear safety

Government resolutions

- The Resolution No. 722, June 20th, 2012, of the Government of the Republic of Lithuania on the Approval of Regulations on the Issue of Licenses and Permits for Activities in the Nuclear Energy Area;
- The Resolution No. 918, September 12th, 2018, of the Government of the Republic of Lithuania on the Implementation of the Law on Radiation Protection of the Republic of Lithuania (establishes Rules on Authorising Activities with Sources of Ionizing Radiation and Rules on the Handling of Orphan Radioactive Sources, Orphan Substances of Nuclear Fuel Cycle, Orphan Nuclear and Fissile Substances and Objects Contaminated by Radionuclides);
- The Resolution No. 1427, December 23rd, 2015, of the Government of the Republic of Lithuania on the Approval of Radioactive Waste Management Development Programme;
- The Resolution No. 1872, December 3rd, 2002, of the Government of the Republic of Lithuania on the Approval of the Rules of Procedure of Submission of Data on Activities Involving Radioactive Waste Disposal to the European Commission;
- The Resolution No. 83, January 25th, 2012, of the Government of the Republic of Lithuania on the Approval of Rules of Procedure of the Assessment of the Nuclear Facilities' Site Evaluation Report;
- The Resolution No. 99 of January 18th, 2012, of the Government of the Republic of Lithuania on the Approval of National Plan for Protection of Population in Case of Nuclear or Radiological Accident;
- The Resolution No. 1873 of December 3rd, 2002, of the Government of the Republic of Lithuania on the Approval of Rules of Procedure of Authorization of Nuclear Facility Building Design;
- The Resolution No. 1165 of July 19th, 2002, of the Government of the Republic of Lithuania on the Approval of the Rules of Issuing Permissions to Construct, Reconstruct, Capital Repair or Demolish Building of Nuclear Facility;
- The Resolution No. 117 of February 2nd, 2005, of the Government of the Republic of Lithuania on the Approval of Decommissioning Program of First and Second Units of State Enterprise Ignalina Nuclear Power Plant;
- Resolution No. 704, May 21st, 2002, of the Government of the Republic of Lithuania on Granting the Authorisation for Carriage of Dangerous Goods by Road and Rail Related Activities;
- Resolution No. 1116, December 20th, 2017, of the Government of the Republic of Lithuania on the Approval of Rules of Procedure for Review of National Nuclear Safety Regulation System and Evaluation of Nuclear Installation' Safety.

VATESI nuclear safety requirements and rules

Regulatory system, inspection and enforcement

- Order No. 22.3-58, 15th of June, 2009, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.1.1-2014 “Rules of Procedure for Drafting of Nuclear Safety Requirements and Nuclear Safety Rules“;
- Order No. 22.3-82, 25th of August, 2011, approved by the Head of VATESI “On the

Approval of Nuclear Safety Requirements BSR-1.1.3-2016 “Inspections Conducted by the State Nuclear Power Safety Inspectorate“;

– Order No. 22.3-106, 24th of October, 2011, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.1.4-2017 “Rules of Procedure for Applying the Enforcement Measures Set by the State Nuclear Power Safety Inspectorate“;

– Order No. 22.3-182, 23rd of October, 2017, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.1.5-2017 “Rules of Procedure for Public Participation in Decision-Making in the Area of Nuclear Energy“;

– Order No. 22.3-94, 18th of May, 2020, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.1.6-2020 “Annual Report on Ensuring Nuclear Safety, Radiation and Physical Protection” (enters into force on 1st of November, 2020).

Emergency preparedness

– Order No. D1-136/22.3-15, February 10th, 2012, approved by the Minister of Environment of Republic of Lithuania and the Head of VATESI “On the Approval of Rules of Procedure on the Exchange of Information in Case of Extreme Radiological Situations“;

– Order No. 22.3-18, January 21st, 2020, approved by the Head of VATESI “On the Approval of the Nuclear Safety Requirements BSR-1.3.1-2020 “Enforcement of Emergency Preparedness in Nuclear Installations”.

Management systems

– Order No. 22.3-148, 4th of July, 2019, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.4.4-2019 “Use of Operating Experience in the Field of Nuclear Energy“;

– Order No. 22.3-56, 21st of June, 2010, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.4.1-2016 “Management System“;

– Order No. 22.3-22, 29th of January, 2014, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.4.2-2014 “Management of Construction of Nuclear Facility“;

– Order No. 22.3-160, 20th of September, 2017, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.4.3-2017 “Human Resources of Organisations Implementing Licensed Activities in the Area of Nuclear Energy”.

Decommissioning

– Order No. 22.3-216, November 30th, 2015, approved by the Head of VATESI “On the Approval of Nuclear safety requirements BSR-1.5.1-2019 “Decommissioning of Nuclear Facilities“;

– Order No. 22.3-206, December 20th, 2016, approved by the Head of VATESI “On the Approval of Nuclear Safety Rules BST-1.5.1-2020 “The Evaluation of Compliance with Free Release Criteria of Buildings, Engineering Structures and Site of Nuclear Facilities”.

Fire safety

– Order No. 22.3-57, 10th of April, 2014, approved by the Head of VATESI on the Approval of Nuclear Safety Requirements BSR-1.7.1-2014 “Fire Safety of Structures, Systems and Components Important to Safety of Nuclear Facility”.

Safety assessment

- Order No. 22.3-99, 7th of October, 2011, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.8.2-2015 “Categories of Modifications of Nuclear Facility and Procedure of Performing the Modifications””;
- Order No. 56, 29th of December, 2001, approved by the Head of VATESI “On the Approval of Requirements for nuclear facility emergency electricity supply systems installation and operation”;
- Order No. 22.3-169, 25th of July, 2018, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.8.4-2018 “Ageing management of structures, systems and components important to safety of nuclear facility””;
- Order No. 22.3-72, 30th of December, 2005, approved by the Head of VATESI “On the Approval of Requirements for Analysis of Explosion and Aircraft Crash Impact for Nuclear Facilities”;
- Order No. 22.3-33, 30th of June, 2006, approved by the Head of VATESI “On the Approval of Requirements for Analysis of Seismic Impact for Nuclear Facilities”;
- Order No. 22.3-222, 24th of November, 2017, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.8.3-2017 “Technical Specification of Nuclear Facility””;
- Order No. 22.3-295, 4th of December, 2018, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.8.5-2018 “Commissioning of Nuclear Facility””;
- Order No. 22.3-136, 3rd of July, 2019, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.8.6-2019 “Technical maintenance, monitoring and examination of structures, systems and components important to nuclear facility safety””;
- Order No. 22.3-15, 17th of January, 2020, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.8.7-2020 “Safety of activities with nuclear materials regulated by the license of State Nuclear Power Safety Inspectorate””;
- Order No. 22.3-7, 13th of January, 2020, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.8.8-2020 “Lifting equipment and its devices important to safety of nuclear facility””.

Radiation protection

- Order No. 22.3-89, 27th of September, 2011, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.9.1-2017 “Standards of Release of Radionuclides from Nuclear Facilities and Requirements for the Plan on Release of Radionuclides””;
- Order No. 22.3-90, 27th of September, 2011, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-1.9.2-2018 “Establishment and Application of Clearance Levels of Radionuclides for the Materials and Waste Generated During the Activities in the Area of Nuclear Energy””;
- Order No. 22.3-95, 6th of October, 2011, approved by the Head of State Nuclear Power Safety Inspectorate “On the Approval of Nuclear Safety Requirements BSR 1.9.3-2016 “Radiation Protection at Nuclear Facilities””.

Requirements and rules on nuclear power plants safety: site evaluation, design, construction, operation, decommissioning of nuclear power plants

- Order No. 22.3-118, 23rd of November, 2009, approved by the Head of VATESI “On the approval of Nuclear Safety Requirements BSR-2.1.1-2009 “Requirements for deterministic safety analysis of Ignalina nuclear power plant””;
- Order No. 22.3-16, 5th of February, 2010, approved by the Head of VATESI “On the

approval of Nuclear Safety Requirements BSR-2.1.2-2010 “General requirements on assurance of safety of nuclear power plants with RBMK-1500 type reactors“;

– Order No. 22.3-58, 20th of July, 2010, approved by the Head of VATESI “On the approval of Nuclear Safety Requirements BSR-2.1.3-2010 “General requirements on site evaluation for nuclear power plants“;

– Order No. 22.3-117, 25th of November, 2011, approved by the Head of VATESI “On the approval of Nuclear Safety Requirements BSR-2.1.4-2011 “Preparation and Use of the Nuclear Power Plant’s Safety Analysis Report“;

– Order No. 22.3-141, 16th of July, 2015, approved by the Head of VATESI “On the Approval of Nuclear Safety Requirements BSR-2.1.5-2015 “Commissioning of Nuclear Power Plant”;

– Order No. 22.3-91, 26th of November, 2010, approved by the Head of VATESI “On the approval of Nuclear Safety Rules BST-2.1.1-2010 “Design, construction and operation of electric power supply systems“;

– Order No. 56, 21st of December, 2002, approved by the Head of VATESI “On the approval of Safety Requirements for Accidents Localisation Systems“;

– Order No. 69, 24th of July, 1997, approved by the Head of VATESI “On the approval of “Nuclear safety rules on reactor installations of nuclear power plants” VDT-001-0-97;

– Order No. 22.3-87, 27th of March, 2018, approved by the Head of VATESI “On the approval of Nuclear Safety Requirements BSR-2.1.6-2018 “Design of Power Plant”.

Requirements and rules on safety of radioactive waste management: site evaluation, design, construction, operation of radioactive waste repositories, surveillance of closed radioactive waste repositories

– Order No. 22.3-59, July 21st 2010, approved by the Head of VATESI “On the approval of Nuclear Safety Requirements BSR-3.1.1-2016 “General Requirements for Spent Nuclear Fuel Storage Facility of the Dry Type“;

– Order No. 22.3-120, December 31st, 2010, approved by the Head of VATESI “On the approval of Nuclear Safety Requirements BSR-3.1.2-2017 “Pre-disposal Management of Radioactive Waste at the Nuclear Facilities“.

Requirements and rules on safety of radioactive waste management: site evaluation, design, construction, operation, decommissioning of radioactive waste treatment and storage facilities

– Order No. 22.3-103, May 27th 2015, approved by the Head of VATESI “On the approval of Nuclear Safety Requirements BSR-3.2.1-2015 “Radioactive waste acceptance criteria for near surface repository”;

– Order No. 22.3-188, November 30th 2016, approved by the Head of VATESI “On the approval of Nuclear Safety Requirements BSR-3.2.2-2016 “Radioactive waste repository”.

Requirements and rules on transportation of nuclear, fissionable and nuclear fuel cycle materials safety

– Order No. V-1271/22.3—139, December 24th, 2008, approved by the Minister of Health and the Head of the State Nuclear Power Safety Inspectorate “On the approval of “Rules on shipment, import, transit and export of radioactive material, radioactive waste and spent nuclear fuel“;

– Order No. 22.3-133 of 31st of July, 2017 of the Head of State Nuclear Power Safety Inspectorate “On the approval of Nuclear Safety Requirements BSR-4.1.1-2017 “Rules on the Issue of Certificates for Transport of Nuclear Fuel Cycle, Nuclear and Fissionable Materials”;

– Order No. 22.3-169 of 19th of July, 2019 of the Head of State Nuclear Power Safety Inspectorate “On the approval of Nuclear Safety Requirements BSR-4.1.2-2019 “Requirements for Documents Accompanying Application for Issuance of License to Transport Nuclear Fuel Cycle, Nuclear and Fissile Materials”.

Annex IV

Organizational Structure of State Nuclear Power Safety Inspectorate (VATESI)

