



**REPUBLIC OF CYPRUS**  
**MINISTRY OF LABOUR AND SOCIAL INSURANCE**  
**DEPARTMENT OF LABOUR INSPECTION**  
**RADIATION INSPECTION AND CONTROL SERVICE**



**National Report  
of the Republic of Cyprus  
on the implementation of the  
obligations under the  
Convention on Nuclear Safety**

**submitted for the purposes of the  
Joint 8th and 9th Review Meeting  
of the Convention,  
Vienna, Austria, 20-31 March 2023**



**Nicosia, Cyprus  
July 2022**

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## Abbreviations

(in alphabetical order)

ARTEMIS	Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation Programmes (of IAEA)
BSS	Basic safety standards
CBRN-E	Chemical, Biological, Radiological, Nuclear – Explosive (threats)
CNS	Convention on Nuclear Safety
DLI	Department of Labour Inspection
DSRS	Disused Sealed Radioactive Sources
ECURIE	European Commission Urgent Radiological Information Exchange
EPR	Emergency Preparedness and Response
EU	European Union
Euratom	European Atomic Energy Community
EURDEP	European Radiological Data Exchange Platform
GSR	Generic Safety Requirements (of IAEA)
HERCA	Heads of European Radiological Protection Competent Authorities
IAEA	International Atomic Energy Agency
IRRS	Integrated Regulatory Review Service (of IAEA)
ITDB	Incident and Trafficking Database (of IAEA)
MLSI	Minister of Labour and Social Insurance
R.A.A.	Regulatory Administrative Act
RICS	Radiation Inspection and Control Service
TLC	Technical Licensing Committee
UNECE	United Nations Economic Commission for Europe
USIE	Unified System for Information Exchange in Incidents and Emergencies (of IAEA)

## Section A. Introduction

The Republic of Cyprus (“Cyprus” hereafter) is a member of the International Atomic Energy Agency (IAEA) since 1965 and a member of the European Union (EU) since 2004.

Cyprus acceded on the Convention on Nuclear Safety (“CNS” hereafter) on 20 September 1994. The relevant ratifying Law L.20(III)/1998 was enacted with its publication in the Official Journal of the Republic of 11 December 1998 and entered into force on 15 June 1999. Since its accession to the CNS, Cyprus participated in six review meetings, from 2002 to 2017 (*as the Contracting Parties to the CNS have agreed not to hold the 8th Review Meeting in March 2021*), and submitted relevant national reports.

Cyprus has no nuclear power reactor units and the use of nuclear energy for the generation of electric power is not considered by the Government of Cyprus (“the Government” hereafter) in the country’s energy mix in the foreseeable future. Also, Cyprus has no research reactors, nor does it operate any other nuclear installations or uranium or thorium mines. The management of spent fuel is prohibited by law. The main use of ionising radiation in the country is in medicine, industry and education/research. All radioactive sources and radiation generators used in the country are imported from abroad. Radioactive waste is produced mainly in nuclear medicine applications.

The administration of the legislation on nuclear safety and radiation protection is assigned to the regulatory body, i.e. the *Minister of Labour and Social Insurance (MLSI)*, as defined under the Protection against Ionising Radiation and Nuclear and Radiological Safety and Security Law of 2018 (“the Law” hereafter), acting through the Radiation Inspection and Control Service (RICS) of the Department of Labour Inspection (DLI).

*This is the 7th National Report of Cyprus submitted in the framework of the Joint 8th and 9th Review Meeting of Contracting Parties to the CNS, to be held in Vienna, from 20 to 31 March 2023. This report presents the developments as regards the implementation of the provisions of the CNS in Cyprus as of July 2022. It is a stand-alone report, and provides inter alia feedback based on the last Country Review Report from the 7th CNS Review Meeting* and in line with the revised Guidelines regarding the preparation of National Reports. Since Cyprus is a non-nuclear country, only specific articles of the CNS are applicable, nevertheless this report gives information on activities on each separate article by analogy and as applicable.

The report makes explicit reference on how the challenges identified in the 7th CNS Review Meeting for Cyprus have been addressed and ends with a series of Annexes, referring, apart from the actions taken to meet the challenges, as referred to in Annex I and shown in Annex II, to: (a) the feedback against the Major Common Issues arising from country group discussions during the 7th CNS Review Meeting (Annex III); and (b) the national laws and regulations and other Euratom or international legal instruments that are cited throughout the report (Annex IV).

The report also addresses how Cyprus has taken into consideration the applicable Good Practices identified in the 7th CNS Review Meeting, as referred to in Annex VI of the 7th CNS Review Meeting President’s Report. In response to the recommendations of the President of the Review Meeting concerning the implementation of the principles of the Vienna Declaration on Nuclear Safety (VDNS), these are addressed as applicable for a non-nuclear country throughout the report and, in particular, under Article 16.

Moreover, both the terms “installation” and “facility” are used throughout the report, as both are in use under the national legislation (the first originates from the definition of “nuclear installation” in the CNS and the Directive 2009/71/Euratom, as amended by Directive 2014/87/Euratom; the other comes from the IAEA standards and Directive 2013/59/Euratom). The term “license holder” is also used in the report, although this term is not further used in the national legislation, as it has been replaced by the term

“undertaking” as explained under Article 9. Also, although the national legislation uses the term “regulatory authority”, the report keeps for compatibility purposes the term “regulatory body” used in the CNS. Finally, abbreviations of terms used only once throughout the text have been occasionally kept, however they have not been included in the relevant list in page 5.

*Responding to the recommendations of the President of the 8th Review Meeting, updated or new information compared to the content of the national report submitted in 2019 for the purposes of the 8th review cycle is marked with **bold italic** letters throughout the report.*

Cyprus intends to make this report publicly available, as well as its country review report once finalised.



## Section B. Summary

### *Cyprus efforts to achieve the objectives of the Convention*

Cyprus is committed to the promotion and maintenance of high levels of nuclear/radiological safety and of an effective nuclear safety culture. Cyprus has established a comprehensive legal, regulatory and administrative framework for radiation protection and nuclear and radiological safety, which is in line with the IAEA standards and the EU Acquis. This framework has been revised during the past years, in the time period since the 7<sup>th</sup> CNS Review Meeting, in harmonisation with the relevant Euratom legislative instruments on nuclear safety and radiation protection (basic safety standards).

*A comprehensive policy and strategy on nuclear and radiological safety and protection has been adopted in 2019 and is being implemented following a graded approach, in accordance with national legislation and the IAEA standards and the radiation risks associated with facilities/installations and activities. The policy and strategy serves as the national commitment to address all issues in the field of nuclear safety and the protection against ionising radiation, in a coordinated, cooperative and sustainable manner. The policy and strategy outlines the general orientation of the regulatory body towards further applying a graded approach in the regulatory control, in accordance with national conditions and the radiation risks associated with facilities and activities in the country, in order to protect humans, and the environment from the harmful effects of radiation, taking into consideration the European and international commitments of the country, the current scientific data and the specific issues of radiation protection and nuclear safety in Cyprus.*

*The national policy and framework on nuclear/radiological safety reflects two fundamental principles: (a) the national responsibility to establish and maintain adequate levels for nuclear/radiological safety of facilities/installations, as endorsed by the CNS and the relevant Euratom legislative instruments; and (b) the prime responsibility of the license holders for the nuclear/radiological safety of an installation, under the supervision of the regulatory body. Cyprus recognises the importance to ensure, as an integrated part of nuclear/radiological safety, the safe and responsible management of spent fuel and radioactive waste, including at storage and disposal facilities, as applicable, expressed through the national obligations posed by the IAEA's Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management and the relevant Euratom legislative instruments. Relevant information on the safety of radioactive waste management in the country can be found at the national reports submitted under the Joint Convention Review Meetings.*

*Moreover, the national strategy on the safe and responsible management of radioactive waste and disused sealed radioactive sources (DSRS) was adopted in 2015. Although the strategy on the safe management of radioactive waste (2015) was put into force quite earlier than the national radiation safety policy (2019), the former consists part of the latter policy, as the radiation safety policy reflects in a more general way the commitment of the Government to radiation safety, including the safety for the radioactive waste management. This strategy is currently under review, to reflect recent developments, political and regulatory decisions and the May 2022 ARTEMIS peer review findings.*

Cyprus has also strengthened its efforts for national coordination and international participation and cooperation, representation and involvement through various nuclear/radiological safety and protection channels, such as participation to Europe region and IAEA's bodies or organisations, as well as in getting benefit from independent peer review assessments of the national framework. *Staff from RICS/DLI have also participated in peer review missions, consultancies and expert missions abroad.*

## ***Outcomes of the Country Review Report from the 7th CNS Review Meeting***

For ease of reference, the outcomes of the Country Review Report from the 7th CNS Review Meeting (Highlights; Challenges; Suggestions; and Areas of Good Performance) are presented in Annex I of the report.

One of the challenges identified in 2017 – the introduction of new legislation with provisions on, for example, functional separation of the regulatory body, legal powers and human and financial resources necessary for the regulatory body, information to be made available to the workers and the general public in relation to safety – is considered by Cyprus as closed, as the relevant legislation has entered into force in December 2018. ***In the years 2019 to 2022 a series of secondary legislative measures and regulatory arrangements, i.e. Notifications (Specifications; Standards; Codes of Practice) under the main Law were adopted. Some of them indicatively concern (a) the national strategy on regaining control over orphan sources; (b) the national framework on education and training in safety, security and radiation protection issues; and (c) the national arrangements on the control of building materials and the definition of naturally occurring radioactive materials that are of concern from a radiation protection point of view. More analytical information is provided under Article 7. Legislative and Regulatory framework and in Annex II of the report.***

The implementation of actions concerning the remaining three Challenges identified in 2017, i.e. to: (a) establish an integrated management system in accordance with IAEA safety standards; (b) implement the Integrated Regulatory Review Service (IRRS) action plan; and (c) further strengthen the regulatory body and supporting / cooperating institutions (in terms of staffing and training, equipment and other resources), is in a good progress, and is also described in Annex II of the report.

## ***Main changes and developments since the 7th CNS Review Meeting***

The main developments since the last national report are considered to be the following:

1. Cyprus has further strengthened the legislative and regulatory framework in order to maintain and promote the continuous improvement of nuclear/radiological safety and its regulation and maintain appropriate national arrangements for a high level of nuclear/radiological safety and to protect workers and the general public against the dangers arising from ionising radiation from the various application of ionising radiation.

The improvements in the legislative and regulatory framework are consistent and aligned with:

- (a) the European Directive 2009/71/Euratom, as amended by Directive 2014/87/Euratom, on the nuclear safety of nuclear installations, which aims at maintaining and promoting the continuous improvement of nuclear safety and its regulation and providing for the national arrangements for a high level of nuclear/radiological safety. The Directive defines the basic principles and obligations governing nuclear safety and illustrates the provisions of the main international instruments on nuclear safety, including the CNS.
- (b) the European Directive 2013/59/Euratom on the establishment and implementation of basic safety standards for protection against the dangers arising from exposure to ionising radiation, which covers all relevant radiation sources, including the control of high-activity sealed sources and natural radiation sources, integrate protection of workers, members of the public, patients and the environment, covers all exposure situations (planned, existing, emergency), sets the regulatory control standards of practices, ***defines emergency preparedness and response system and arrangements***, and harmonises numerical values (dose limits; dose constraints; and reference levels) with the international standards. It also includes emergency preparedness and response provisions that were strengthened in the aftermath of the Fukushima Daiichi nuclear accident.

The new legislative and regulatory framework revises and/or completes, as appropriate, the pre-existing framework on: (a) the 1996's basic safety standards (radiation protection) (2002); (b) the health protection of individuals against the dangers of ionising radiation in relation to medical exposure (2002); (c) the information provided to the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency (2002); (d) the operational protection of outside workers exposed to the risk of ionising radiation during their activities in controlled areas (2002); (e) the control of high-activity sealed radioactive sources and orphan sources (2006); (f) the supervision and control of transboundary shipments of radioactive waste and spent nuclear fuel (2009); (g) the nuclear safety of nuclear installations (2011, 2017); (h) the safe and responsible management of radioactive waste (2014); (i) the protection of the health of the general public with regard to radioactive substances in water (2016); and (j) the provisions of the relevant Euratom "food and feed" Regulations, i.e. the Euratom Regulation 2016/52 on the maximum permitted levels of radioactive contamination of food and feed following a nuclear accident or any other radiological emergency and the Regulation 733/2008 of 15 July 2008 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station, replaced by the Commission Implementing Regulation (EU) 2020/1158 of 5 August 2020. ***For products originating Japan, the Commission Implementing Regulation (EU) No 2021/1533 of 17 September 2021 imposing special conditions governing the import of feed and food originating in or consigned from Japan following the accident at the Fukushima nuclear power station has repealed Implementing Regulation (EU) 2016/6.***

Efforts have been made through the recent revision of the national nuclear/radiological safety and radiation protection legislation to incorporate provisions in the text that further align with the IAEA safety standards, in particular GSR Part 1 (rev. 1), GSR Part 3, and GSR Part 7, as well as the Code of Conduct on the Safety and Security of Radioactive Sources, making their provisions obligatory through the national framework.

The response to Challenge 1 in Annex II of the report is also relevant.

***Cyprus actively participates in the conformity evaluations of the transposing measures for the Euratom safety-related Directives conducted by the European Commission, and submits national reports according to the timeframes provided in each Directive. Cyprus submitted its second national report on the implementation of the 2009 Nuclear Safety Directive, as amended in 2014, in July 2020, and its third national report on the implementation of the 2011 Spent Fuel and Radioactive Waste Management Directive in August 2021.***

2. ***Cyprus further strengthened the legal status, capacity and powers of the regulatory body putting into force new relevant legislation:***
  - (a) It strengthens its effective independence from undue influence on its decision making and functional separation of the regulatory body from any other body or organisation concerned with the promotion or utilisation of nuclear energy or of ionising radiation;
  - (b) It provides the legal powers to the regulatory body necessary to fulfil its obligations in connection with the national framework i.e. (i) define the national nuclear/radiological safety requirements; (ii) require the license holder to comply and demonstrate compliance with national nuclear safety requirements and the terms of the relevant license; (iii) verify such compliance through regulatory assessments and inspections; and (iv) propose or carry out effective and proportionate enforcement actions;
  - (c) It provides for the human and financial resources necessary for the functioning of the regulatory body i.e. dedicated and appropriate budget allocations to allow for the delivery of its regulatory tasks; appropriate number of qualified staff with experience and expertise necessary to fulfil its obligations;

- (d) It provides for the integrity and stability in the processes, procedures and decision-making of the regulatory body, and the prevention and resolution of any conflicts of interest;
  - (e) It further promotes openness and transparency in the regulatory procedures and decisions;
  - (f) It clearly defines requirements for the license holders, including: (i) maintaining adequate financial and human resources to fulfil their obligations under the Law; (ii) defining the prime responsibility for safety; (iii) regularly assessing, verifying, and continuously improving the safety of their facilities in a systematic and verifiable manner; (iv) establishing and implementing management systems which give due priority to safety; and (v) establishing and updating appropriate on-site emergency procedures and arrangements, including arrangements for responding effectively to accidents in order to prevent or mitigate their consequences;
  - (g) It provides for arrangements for education and training to be in place by all parties having responsibilities related to the safety of facilities, so as to obtain, maintain and to further develop expertise and skills in nuclear safety and on-site emergency preparedness;
  - (h) It defines the information (to be) made available to the workers and the general public in relation to safety in the event of nuclear or radiological emergency.
3. ***With respect to the safe and responsible management of radioactive waste, Cyprus has developed since 2014 a dedicated national legislative, regulatory and organisational framework for radioactive waste management, and implements a national policy and strategy on radioactive waste and DSRS management, as well as a national programme that covers all types of radioactive waste or DSRS under its jurisdiction and all stages of radioactive waste management, from generation to disposal.***

New elements relevant to the management of DSRS are:

- (a) the establishment of a system to enable the regulatory body to be adequately informed of any transfer of high activity sealed sources and where necessary individual transfers of sealed sources;
- (b) the requirement that each license holder possessing a sealed source to notify the regulatory body promptly of any loss, significant leakage, theft or unauthorised use of a sealed source;
- (c) arrangements providing for the transfer of DSRS to the supplier or their placement in a disposal or storage facility or an obligation for the manufacturer or the supplier to receive them;
- (d) a financial security or any other equivalent means appropriate for the source in question for the safe management of sources when they become disused, including the case where the license holder becomes insolvent or ceases its activities.

***The strategy on the management of radioactive waste and DSRS is currently under revision, taking into account recent developments, political and regulatory decisions, the findings of the ARTEMIS mission conducted in Cyprus in May 2022 and the suggestions and challenges identified in the 7<sup>th</sup> Review Meeting of the Joint Convention in June 2022.***

4. Adoption of a graded approach in the regulatory process and control through:
- (a) the concepts of exclusion, exemption and clearance;
  - (b) notification and authorisation (registration or licensing);
  - (c) notification and application forms for registration and licensing and the required documentation in support of the application;
  - (d) authorisation (registration) under general conditions for common practices with radiological equipment, e.g. dental or veterinary radiological practices;
  - (e) review and assessment;
  - (f) inspection, e.g. inspection programme and frequency; and
  - (g) enforcement, e.g. serving of verbal notices, improvement notices, prohibition notices, fixed penalty notices and prosecution.

5. ***Better regulation, better implementation, better enforcement. The regulatory body has put into force a series of Regulatory Administrative Acts, approved and published by the Chief Inspector in the Official Journal of the Republic. These administrative acts are listed under Article 7. Legislative and Regulatory framework, and further regulate, inter alia, areas such as the education and training in radiation protection and nuclear and radiological safety and security; control and recovery of orphan radioactive sources and for responding to emergencies due to orphan sources; monitoring programme of the quality from radiological point of view of the water intended for human consumption; building materials and classes or types of practice involving naturally-occurring radioactive material that lead to exposure which cannot be disregarded from a radiation protection point of view; radiation protection of members of the public; designation of controlled and supervised areas; radiation protection officer; diagnostic reference levels for radiodiagnostic examinations; individual radiological monitoring; implementation of a management system by the undertaking or the employer; conducting risk assessment; application of local rules, supervision of classified areas and the application of additional requirements for classified areas; and safety and security for the transport of radioactive materials.***
6. Establishment of a national policy and strategy for nuclear/radiological safety and protection, approved by the MLSI in 2019, which is implemented following a graded approach, in accordance with national circumstances and with the radiation risks associated with facilities and activities. Although the national waste management policy (2015) was approved and put into force quite earlier than the national radiation safety policy (2019), the former consists part of the latter policy, as the radiation safety policy reflects in a more general way the commitment of the Government to radiation safety, including the safety for the radioactive waste management.
7. Establishment, implementation, assessment and improvement of an Integrated Management System in the regulatory body that is aligned with its safety goals and contributes to their achievement, in order to ensure that the responsibilities assigned to the regulatory body are properly discharged, so as to maintain and improve the performance of the regulatory body by means of planning, control and supervision of its safety related activities, and to foster and support a safety culture in the regulatory body (see also the response to the relevant Challenge in Annex II of the report).
8. Establishment of provisions for building and maintaining the competence of all parties having responsibilities in relation to the safety of facilities and activities, including the regulatory body (ref. Annex II).
9. Further progress in the implementation of the action plan established in 2017, fulfilling the requirements of the IAEA standards as pointed out by the recommendations and suggestions of the IRRS peer review held in February 2017 (ref. Annex II). A number of these recommendations concerns issues related to the radioactive waste management (review and assessment, authorisation, inspection, regulations and guides). ***Currently, as of July 2022, 26 out of the 40 recommendations and suggestions made in the IRRS report are considered closed and 11 partially closed.***
10. Cyprus has invited in May 2018 an IAEA Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) peer review, in accordance with the provisions of the Protection against Ionising Radiation and Nuclear Safety (Responsible and Safe Management of Spent Fuel and Radioactive Waste) Regulations of 2014 (Regulatory Administrative Act (R.A.A.) 178/2014). ***The ARTEMIS mission was conducted from 23 to 27 May 2022, after postponed twice due to the pandemic situation. The ARTEMIS team noted that Cyprus has made good progress towards updating the 2015 national policy and strategy for management of radioactive waste and DSRS, and has identified a number of areas for further improvement (ref. Annex II).***

11. Establishment of a national strategy to ensure the appropriate management of existing exposure situations commensurate with the risks and with the effectiveness of protective measures.
12. In connection to the national strategy on the management of existing exposures situations referred to above, establishment of a national action plan addressing long-term risks from radon exposures in dwellings, buildings with public access and workplaces for any source of radon ingress, whether from soil, building materials or water.
13. Establishment of a strategy on the recovery, management, control and disposal of orphan sources, including assignment of responsibilities, and for dealing with emergencies due to orphan sources, drawing up appropriate response plans and measures.
14. ***International participation and cooperation: Despite the human resources challenged faced, Cyprus has strengthened its efforts for more active and effective international participation, representation and involvement through various nuclear/radiological safety and protection channels, such as participation to Europe region and IAEA's bodies or organisations, as detailed under the relevant sub-section in Article 8 (peer reviews; standards committees; expert missions/consultancies; workshops/conferences; bilateral exchange and experience sharing).***
15. ***Establishment of a national emergency management system: the previously existing approach based on intervention levels has been replaced by a more comprehensive system comprising an assessment of potential emergency exposure situations, an overall emergency management system, emergency response plans (with the objective of avoiding tissue reactions leading to severe deterministic effects in any individual from the affected population and reducing the risk of stochastic effects), and pre-planned strategies for the management of postulated events.***
16. ***The national radiation emergency action plan ELECTRA has been revised and put into force in April 2021 to align with the requirements in GSR Part 7, e.g. the establishment and implementation of an appropriate protection strategy, conducting a comprehensive hazard assessment, the management of radioactive waste originating from a nuclear or radiological emergency, conducting drills and exercises, provisions for the termination of an emergency, and analysing a nuclear or radiological emergency and the emergency response.***
17. ***Advancements in the implementation of the roadmap concerning the management of DSRS: Cyprus with the assistance of IAEA removed four Category II legacy sources abroad in December 2020, while efforts are made to appropriately manage a number of sources of lower categories (lightning rods, smoke detectors and educational sources). An upgrade of the physical protection and security measures of the storage facility of the DSRS has been completed. Efforts are also ongoing for carrying out an effective source collection campaign (lightning rods and smoke detectors), including appropriate public outreach and communication.***
18. ***Establishment of a National Centralised Storage Facility at the Nicosia General Hospital, operated by the State Health Service Organisation, following a decision of the Council of Ministers in December 2020.***
19. The human resources of the regulatory body have been further strengthened. Although not yet achieved the numbers of staff provided in the staffing plan for RICS/DLI, one permanent post has been filled in 2020 ***and two additional posts are expected to be filled in 2022. This will result in the increase of the number of staff of RICS/DLI to six Labour Inspection Officers (50% increase).***

20. *The regulatory body has significantly strengthened its monitoring and measuring capacity through its participation in a national project with IAEA's Department of Technical Cooperation, with the procurement of handheld equipment and environmental radioactivity monitoring equipment (high volume spectroscopic samplers; upgrade of existing hardware and software infrastructure).*

### **Ongoing and new challenges**

1. The implementation of actions concerning three of the four challenges identified in 2017, i.e. to: (a) establish an integrated management system in accordance with IAEA safety standards; (b) implement the Integrated Regulatory Review Service (IRRS) action plan; and (c) further strengthen the regulatory body and supporting / cooperating institutions (in terms of staffing and training, equipment and other resources), which are considered as on-going, although remarkable progress has been made, as described in Annex II of the report.
2. *The new legislation transposing to the national framework the European Directive 2013/59/Euratom pose the obligation to the regulatory body to adopt in the national framework a series of secondary legislative measures and regulatory arrangements e.g. by means of Notifications (Specifications; Standards; Codes of Practice; Guides) under the main Law, all of binding nature, as analytically described under Article 7. Legislative and Regulatory framework and Challenge 1, Annex II of the report. Of major importance are the measures and arrangements to further promote a comprehensive safety (and security) culture and for education and training by all parties having responsibilities related to the safety of facilities, so as to obtain, maintain and to further develop expertise and skills in nuclear/radiological safety and on- and off-site emergency preparedness. Challenge considered closed.*
3. *In connection to the implementation of the IRRS action plan and as is mentioned under Main Changes and Developments, an ARTEMIS mission was conducted from 23 to 27 May 2022. The ARTEMIS team noted that Cyprus has made good progress towards updating the 2015 national policy and strategy for management of DSRS and radioactive waste. The recommendations and suggestions provided by the review team are analytically described under Challenge 3 in Annex II of the report. RICS/DLI should now establish a road map and implement actions in fulfilment of the ARTEMIS 2022 recommendations and suggestions, in light of the long-term management solutions till disposal that Cyprus needs to consider (a challenge also identified under the 7th Review Meeting of the Joint Convention).*
4. A number of neighbouring countries have plans to construct or have already started constructing nuclear power plants. The national EPR plan ELECTRA referred to under Article 16 has been put in place in 2015. *The plan has been revised in 2021 in an effort to further align with the provisions of GSR Part 7 (see point 16 under Main changes and developments since the 7th CNS Review Meeting). Cyprus should further invest in developing human capacity and intensify its efforts to regularly test, conduct drills and exercises under the plan, and review and update the plan according to the conclusions and the lessons learned from these drills and exercises and from its participation to other European and international exercises.*
5. *Challenges concerning the implementation of the national strategy on the management of radioactive waste and DSRS, also addressed under the obligations of the Joint Convention:*
  - (a) *Update and adopt the national strategy to address the long-term management of radioactive waste and DSRS, including disposal options.*

- (b) Initiate and implement a national campaign on the collection of Am-241 and Ra-226 disused sources in the country.*
- (c) Ensuring adequate financial and human resources for both implementer and regulator for the implementation of the national strategy. To complete the assessment of the financial resources needed for implementation of the strategy, including disposal.*
- (d) Establish and implement a Research and Development programme needed in support of the national strategy.*

### ***The impact of the SARS-CoV-2 pandemic on safety***

*As the situation in other Contracting Parties, the SARS-Cov-2 restriction measures have affected the normal regulatory functions and the operations of the undertakings, without however compromising the existing levels of safety in installations and in carrying out practices and activities. The main characteristics of the operations during the pandemic were:*

- (a) The national radiological emergency centre was not necessary to be activated.*
- (b) No certain radiation facilities were locked down or activities stopped.*
- (c) Personnel important for safety available for the facilities (such as radiation protection officers, radiologists, medical physicists, medical technicians) were mostly available; challenges have been faced as concerns people who had to stay home and transport restrictions.*
- (d) Transport of radioactive materials was affected: delays in the shipment of radiopharmaceuticals; airport, flight and cargo transport restrictions (amount, frequency, type of goods transferred).*
- (e) The processes of review and assessment and of authorisation were not significantly impacted.*
- (f) Only critical personnel worked from the office; at least one member of staff present at the regulatory body offices; all regulatory body employees were provided with special certificates that they were staff of the regulatory body (the Government) and have the right to move without restriction to carry out their duties.*
- (g) The regulatory staff were prioritised by the Government in terms of getting vaccinated ahead of their respective normal age groups.*
- (h) The regulatory staff were excluded based on the Orders of the Minister of Health on the management of the pandemic during the second, third and fourth waves of the pandemic (autumn 2020 to spring 2022) from the obligation to work from home (RICS/DLI included in the critical services).*
- (i) QA/QC of regulatory equipment was carried out normally, although some delays were experienced in the delivery of calibrated/repared equipment from abroad.*
- (j) The inspection programme, normally conducted only with physical presence of the inspector in the premises of the registrant or licensee, was totally revoked in the first part of the pandemic (March to June 2020, regulatory staff was working from home) or was lightened with limited physical presence by taking all necessary precautions; use of common-use service cars was prohibited.*
- (k) Where possible, communications with registrants or licensees were performed via emails or orally via telephone or online meetings.*



## Section C. Implementation of the Convention (*Article by article review*)

### **Article 6: Existing Nuclear Installations**

*Each Contracting Party shall take the appropriate steps to ensure that the safety of nuclear installations existing at the time the Convention enters into force for that Contracting Party is reviewed as soon as possible. When necessary in the context of this Convention, the Contracting Party shall ensure that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation. If such upgrading cannot be achieved, plans should be implemented to shut down the nuclear installation as soon as practically possible. The timing of the shut-down may take into account the whole energy context and possible alternatives as well as the social, environmental and economic impact.*

Cyprus does not operate nuclear installations as defined in Article 2(1) of the CNS.

### **Article 7. Legislative and Regulatory framework**

1. *Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.*
2. *The legislative and regulatory framework shall provide for:*
  - (i) *The establishment of applicable national safety requirements and regulations;*
  - (ii) *A system of licensing with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a license;*
  - (iii) *A system of regulatory inspection assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licenses;*
  - (iv) *The enforcement of applicable regulations and the terms of licenses*

The legislative basis for radiation protection and nuclear and radiological safety and security in Cyprus consists of the Law, which was enacted on 21 December 2018. The Law has repealed and replaced the Protection against Ionising Radiation and Nuclear Safety Law of 2002, as amended in 2009, 2011 and 2017, harmonising the national legal framework with the provisions of the European Directives on the nuclear safety of nuclear installations (Directive 2009/71/Euratom, as amended by Directive 2014/87/Euratom) and on the basic safety standards for protection against the dangers arising from exposure to ionising radiation (Directive 2013/59/Euratom). Moreover, the Law harmonises the national legal framework with the IAEA safety standards, mainly GSR Part 1 (rev. 1), GSR Part 3, GSR Part 7 and the Code of Conduct on the Safety and Security of Radioactive Sources (the corresponding references to the “Main changes and developments since the 7th CNS Review Meeting” in the “Summary” part of the report and in Annex II are also relevant).

Based on Article 62 of the Law, the Council of Ministers is empowered to issue Regulations for various issues arising from the Law. The main sets of Regulations issued under the Law are as following:

- (a) The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Basic Safety Standards for the Protection against the Dangers Arising from Exposure to Ionising Radiation) Regulations of 2018 (R.A.A. 374/2018);
- (b) The Protection against Ionising Radiation and Nuclear Safety (Responsible and Safe Management of Spent Fuel and Radioactive Waste) Regulations of 2014 (R.A.A. 178/2014);
- (c) The Protection against Ionising Radiation (Supervision and Control of Shipments of Radioactive Waste and Spent Fuel) Regulations of 2009 (R.A.A. 86/2009); and
- (d) The Protection against Ionising Radiation and Nuclear Safety (Protection of the Health of the General Public from Radioactive Substances in Water Intended for Human Consumption) Regulations of 2016 (R.A.A. 54/2016).

Other Regulatory or Individual Administrative Acts issued under the Law by the MLSI or the Chief Inspector (ref. "Inspection" section) concern, for example: (a) the prescribed fees for the services offered by the regulatory body; (b) the appointment of the members of the Council of Nuclear Safety and Radiation Protection; and (c) general authorisation (registration) conditions for common practices with radiological equipment, e.g. dental or veterinary radiological practices. In 2019, *as of the time when the 6th national report was submitted*, the Chief Inspector has issued the following two Notifications:

- (a) The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications for practices, procedures and requirements of regulatory control relating to the notification or the granting of authorisation through registration or licensing) Notification of 2019 (R.A.A. 153/2019);
- (b) The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications for the Recognition of Services and Experts in the field of Radiation Protection and Nuclear Safety and Protection) Notification of 2019 (R.A.A. 154/2019).

*Since the submission of the national report for the 8<sup>th</sup> Review Meeting, a series of Regulatory Administrative Acts, in the form of Notifications of the Chief Inspector, have been issued and published in the Official Journal of the Republic, namely:*

- (a) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Standards for Education and Training in Radiation Protection and Nuclear and Radiological Safety and Security) Notification of 2019 (R.A.A. 327/2019).***
- (b) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Standards for the Control and Recovery of Orphan Radioactive Sources and for Responding to Emergencies due to Orphan Sources) Notification of 2019 (R.A.A. 328/2019).***
- (c) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications for setting out and implementing a monitoring programme of the quality from radiological point of view of the water intended for human consumption) Notification of 2019 (R.A.A. 365/2019).***
- (d) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications, requirements and obligations for building materials and classes or types of practice involving naturally-occurring radioactive material that lead to exposure which cannot be disregarded from a radiation protection point of view) Notification of 2019 (R.A.A. 392/2019).***
- (e) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Radiation Protection of Members of the Public) Notification of 2020 (R.A.A 20/2020).***
- (f) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Designation of Controlled and Supervised Areas) Notification of 2020 (R.A.A 21/2020).***
- (g) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the role, the responsibilities and the practices which require the appointment of a Radiation Protection Officer is required by the undertaking or the employer) Notification of 2020 (R.A.A 22/2020).***
- (h) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on Setting-Out and Implementing Diagnostic Reference Levels for Radiodiagnostic Examinations) Notification of 2020 (R.A.A 23/2020).***
- (i) ***The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Individual Radiological Monitoring) Notification of 2020 (R.A.A 24/2020).***

- (j) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (General Conditions for Authorisation through Registration for Veterinary Radiodiagnostic Practices) Notification of 2020 (R.A.A. 51/2020).*
- (k) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications on the registration of practices with radiation generators used for non-medical imaging exposure and operating at less than 200 kV, excluding computed tomography practices) Notification of 2020 (R.A.A. 390/2020).*
- (l) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Implementation of a Management System by the Undertaking or the Employer) Notification of 2020 (R.A.A. 427/2020).*
- (m) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on Conducting Risk Assessment) Notification of 2020 (R.A.A. 428/2020).*
- (n) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Application of Local Rules, the Supervision of Classified Areas and the Application of Additional Requirements for Classified Areas) Notification of 2020 (R.A.A. 459/2020).*
- (o) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (General Conditions for Authorisation through Registration for Practices with Sealed Radioactive Sources of Category 5) Notification of 2020 (R.A.A. 584/2020).*
- (p) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (General Conditions for Authorisation through Registration for Practices with Unsealed Radioactive Sources with a Maximum Total Yearly Radioactivity of 100 MBq for Laboratory (in vitro) Medical or Non-Medical Application Purposes) Notification of 2020 (R.A.A. 585/2020).*
- (q) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Standards (General Conditions) for Authorisation through Registration for practices with X-ray generators for Dental or Bone Densitometry applications) Notification of 2021 (R.A.A. 115/2021).*
- (r) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Standards on the Safety and Security for the Transport of Radioactive Materials) Notification of 2021 (R.A.A. 154/2021).*
- (s) *The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Fixed Penalty Notice) Notification of 2021 (R.A.A. 241/2021).*

*As of July 2022, two other Notifications on (a) General Conditions for granting approvals through Registration for Import, Export, Supply, Transportation and Other Practices with Radiation Generators for Medical or Non-Medical Exposure; and (b) Standards for the determination of National Protocols of Quality Controls in Radiological Equipment, are at the stage of internal consultation.*

In addition, the EURATOM Treaty and relevant European Regulations, Decisions, Conventions or other legal instruments ratified or signed by the EU apply in Cyprus as a member of the EU. The European Acquis prevails the national legislative framework.

Furthermore, Cyprus *is contracting party* to all the five safety international Conventions under the auspices of IAEA:

- (a) the Convention on Nuclear Safety (CNS);
- (b) the Conventions on Early Notification and Assistance in the case of a Nuclear Accident;

- (c) the Convention on Physical Protection of Nuclear Material (CPPNM) and its 2005 Amendment; and
- (d) the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management,

has ratified, signed or accessed to in other Conventions, Protocols, Agreements and other Instruments in the area of nuclear energy and ionising radiation, such as:

- (a) The Comprehensive Nuclear Test Ban Treaty (CTBT)
- (b) The Treaty on the Non-Proliferation of Nuclear Weapons (NPT);
- (c) The Safeguards Agreement between Cyprus and the IAEA for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons;
- (d) The Protocol Additional to the Safeguards Agreement;
- (e) The Agreement between the European Atomic Energy Community, and the Member States without nuclear weapons and the IAEA, in application of Annexes 1 and 4 of Article III of the Treaty on the Non-Proliferation of Nuclear Weapons and its Additional Protocol; and
- (f) The Convention for the Suppression of Acts of Nuclear Terrorism.

and applies the UNSC Resolution 1540.

The Government has made in 2015 a political commitment to the IAEA Code of Conduct on the Safety and Security of Radioactive Sources and its supplementary Guidance on the Import and Export of Radioactive Sources and thus, endeavours to follow the guidance in the Code and its accompanying Guidance on the Import and Export of Radioactive Sources.

It also applies the relevant international standards for transport of radioactive materials, by road, sea or air, namely:

- (a) The revised IAEA Safety Regulations for the Transport of Radioactive Materials (SSR-6 rev. 1);
- (b) The United Nations Recommendations on the Transport of Dangerous Goods;
- (c) The European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR);
- (d) The International Maritime Dangerous Goods (IMDG) Code;
- (e) The International Civil Aviation Organisation (ICAO) Technical Instructions on the Safe Transport of Dangerous Goods; and
- (f) The Universal Postal Union (UPU) Convention.

No railway or river transport exist in Cyprus.

Other associated Conventions/Protocols ratified by Cyprus on environmental impact assessment and public participation to decision-making issues are the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention and its amendment), its associated Protocol (United Nations Economic Commission for Europe (UNECE) Kiev Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context), and the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) and its Protocol on Pollutant Release and Transfer Registers (PRTRs). The MLSI has competence on environmental impact assessment in a transboundary context for nuclear installations / ionising radiation.

The national legislative framework on radiation protection and nuclear and radiological safety and security applies both for natural and artificial sources of ionising radiation, defines national roles and responsibilities in order to protect individuals, society and the environment, and covers aspects such as:

- (a) nuclear/radiological safety and security;

- (b) occupational exposure (including outside workers);
- (c) public exposure;
- (d) medical exposure;
- (e) transport/shipments of radioactive material;
- (f) radioactive waste management;
- (g) illicit trafficking and regaining control over orphan sources;
- (h) education, training and provision of information to all persons/parties with allocated responsibilities with regard to radiation safety and security;
- (i) environmental radioactivity monitoring; and
- (j) radiation emergency preparedness and response.

The Law applies specifically to: (a) the manufacture, production, processing, handling, disposal, use, storage, holding, transport, import and export of radioactive material; (b) the manufacture and the operation of electrical equipment emitting ionising radiation and containing components operating at a potential difference of more than 5 kilovolt; (c) human activities which involve the presence of natural radiation sources that lead to a significant increase in the exposure of workers or members of the public, in particular: (i) the operation of aircraft and spacecraft, in relation to the exposure of crews; (ii) the processing of materials with naturally-occurring radionuclides; (d) the exposure of workers or members of the public to indoor radon, the external exposure from building materials and cases of lasting exposure resulting from the after-effects of an emergency or a past human activity; and (e) the preparedness for, the planning of response to and the management of emergency exposure situations that are deemed to warrant measures to protect the health of members of the public or workers.

In particular to nuclear and radiological safety, the Law applies, *inter alia*, to the safety of the entire lifecycle of nuclear installations and other facilities where ionising radiation is used or is intended to be used, i.e. siting, design, construction, commissioning, operation, maintenance, shutdown, closure, dismantling, decommissioning or demolition and reinforces a number of mechanisms, such as defence-in-depth measures, on-site emergency preparedness and response arrangements and safety culture.

The national legislative, regulatory and organisational framework for the nuclear and radiological safety provides, *inter alia*, for:

- (a) the establishment of the regulatory body and the definition of its powers, role and responsibilities;
- (b) the establishment of a system on nuclear/radiological safety and radiation protection and a system of regulatory control of nuclear/radiological safety performed by the regulatory body;
- (c) the justification and regulatory control over practices;
- (d) the definition of responsibilities and requirements in regulatory control;
- (e) the allocation of responsibilities and coordination between relevant state bodies e.g. in emergencies;
- (f) national nuclear/radiological safety requirements, covering all stages of the lifecycle of facilities;
- (g) the placement of the prime responsibility for safety and security to the license holders or the employers;
- (h) a system of notification and authorisation (registration or licensing) and prohibition of operation of facilities without a license;
- (i) a system for inspection and the appointment and the powers of the Chief Inspector and Inspectors;
- (j) effective and proportionate enforcement actions, including, where appropriate, corrective action or suspension of operation and modification or revocation of a license,
- (k) appeals against regulatory decisions;
- (l) offences and penalties;
- (m) the establishment of a Technical Licensing Committee (TLC) (advisory to RICS/DLI on authorisation issues);
- (n) the establishment of the Council of Radiation Protection and Nuclear Safety (advisory to the MLSI on nuclear safety and radiation protection policy and strategy issues);
- (o) international cooperation; and

- (p) the power of the Council of Ministers to issue Regulations under the Law.

commensurate with the magnitude and likelihood of exposures resulting from the practice, and commensurate with the impact that regulatory control may have in reducing such exposures or improving nuclear or radiological safety.

Moreover, the Law strengthens the independence of the regulatory body, by requiring that the regulatory body shall be provided with the appropriate means and competences to properly carry out the responsibilities assigned to it. In particular, the regulatory body shall have sufficient legal powers, sufficient staffing and sufficient financial resources for the proper discharge of its assigned responsibilities. The Law also provides for periodic self-assessments and reporting of the national framework and regulatory body through inviting, at last every ten years, international peer reviews. The Law, finally, includes provisions on transparency on nuclear and radiological safety issues, by making provision on the information to be provided to the general public and the workers. It also includes requirements on public participation in the decision-making process related to the licensing of nuclear installations and other facilities.

The legislative framework ensures that the prime responsibility for safety is placed on the license holders conducting practices with ionising radiation and being granted the relevant authorisations, and that the likelihood of a loss of control of radioactive material is minimised, through various provisions on the regulatory control and the responsibilities of registrants and license holders. The legislation also defines that any measures taken shall be transparent as concerns the rationale behind their implementation and take into consideration public consultation and the concerns of the interested parties, where applicable, and it is consistent with the national law on the protection of the confidentiality of any information received in confidence.

The national framework is maintained and improved accordingly, where necessary, taking into account operating experience, insights gained from safety analyses of operating facilities involving the use of ionising radiation, any developments of technology and results of safety research and international experience and good practice.

### ***Notification and authorisation***

The Law requires practices to be subject to regulatory control for the purpose of nuclear safety and radiation protection by way of notification and authorisation (registration or licensing), commensurate with the magnitude and likelihood of exposures resulting from the practice, and commensurate with the impact that regulatory control may have in reducing such exposures or improving nuclear or radiological safety (graded approach). The Law also defines practices that are exempted from notification and therefore from regulatory control.

The notification shall be made prior to the practice commencing and the regulatory body has specified the information to be provided in conjunction with the notification. Notified practices which are not exempted from authorisation are subject to regulatory control through registration or licensing. Where an application for authorisation is submitted, no separate notification is needed.

Practices such as:

- (a) the operation of radiation generators or accelerators or radioactive sources for medical exposures or for non-medical imaging purposes;
- (b) the operation of radiation generators or accelerators, except electron microscopes, or radioactive sources for purposes not covered by point (a),

are subject to either registration or licensing. Moreover, practices such as the disposal, recycling or reuse of radioactive materials arising from any authorised practice are subject to authorisation.

The Law requires licensing for the following practices:

- (a) the deliberate administration of radioactive substances to persons and, in so far as the radiation protection of human beings is concerned, animals for the purpose of medical or veterinary diagnosis, treatment or research;
- (b) the operation and decommissioning of any nuclear facility and the exploitation and closure of uranium mines;
- (c) the deliberate addition of radioactive substances in the production or manufacture of consumer products or other products, including medicinal products, and the import of such products;
- (d) any practice involving a high-activity sealed source;
- (e) the operation, decommissioning and closure of any facility for the long term storage or disposal of radioactive waste, including facilities managing radioactive waste for this purpose;
- (f) practices discharging significant amounts of radioactive material with airborne or liquid effluent into the environment.

An applicant (undertaking) requesting authorisation shall demonstrate that adequate levels of nuclear or radiological safety, security and radiation protection are ensured in its facility. The extent and the details in the documentation submitted through the application for an authorisation is commensurate with the size and nature of the risk associated with the facility and its characteristics. The Notification of the Chief Inspector R.A.A. 153/2019 defines in detail the requirements for practices, procedures and requirements of regulatory control relating to the notification or the granting of authorisation through registration or licensing.

***Information to be provided in an application for authorisation include the following:***

- (a) responsibilities and organisational arrangements for protection, safety and security;
- (b) staff competences, including information, education and training;
- (c) design features of the facility and of radiation sources;
- (d) anticipated occupational and public exposures in normal operation;
- (e) safety assessment of the activities and the facility in order to:
  - (i) identify ways in which potential exposures or accidental and unintended medical exposures could occur;
  - (ii) estimate, to the extent practicable, the probabilities and magnitude of potential exposures;
  - (iii) assess the quality and extent of protection and safety provisions, including engineering features, as well as administrative procedures;
  - (iv) define the operational limits and conditions of operation;
- (f) emergency procedures;
- (g) maintenance, testing, inspection and servicing so as to ensure that the radiation source and the facility continue to meet the design requirements, operational limits and conditions of operation throughout their lifetime;
- (h) management of radioactive waste and arrangements for the disposal of such waste, in accordance with applicable regulatory requirements;
- (i) management of DSRS;
- (j) quality assurance; and
- (k) other security and physical protection issues, as applicable.

For registration, the above information is requested following a graded approach, ***as also defined in R.A.A. 153/2019.***

Licenses are granted on conditions. The conditions are specified in accordance with the type and the extend of practice and refer, inter alia, to:

- (a) the obligations of the license holders or the employers against the Law;
- (b) education, training, retraining and provision of information requirements;
- (c) design and performance criteria and requirements for the maintenance of radiation sources, appliances, equipment and other systems;
- (d) the assessment of risks associated with the facility and the practice;
- (e) the control of radioactive substances, including the management in terms of safety and security of radiation sources which become disused;
- (f) the installation and maintenance of efficient systems for the detection, measurement and recording of the presence of ionising radiation of any type, emitted from any device or source in the premises, or by anything that is conveyed, carried away or discharged;
- (g) the design, location, construction, commissioning, operation, modification and maintenance of any premises or equipment containing radioactive substances or any radiation generator or any nuclear installation;
- (h) the preparedness and response measures in a nuclear or radiological emergency;
- (i) the handling, processing, transport, storage and disposal of radioactive materials or radiation generators;
- (j) the discharge of radioactive substances into the environment; and
- (k) the management and transmission of information, including the transmission of information to and from the regulatory body, and keeping confidentiality of information in relation to safety and security.

A license granted under the Law is not transferable to any other license holder, and the regulatory body, based on established criteria and procedures, may amend the terms, requirements and conditions or revoke or cancel the license.

The applications for licensing are reviewed and assessed by the regulatory body. With the exception of practices on the transport, import or export of radioactive sources or radiation generators that are subject to licensing (some types of practices fall under registration requirements), the conditions of the license are examined by the TLC, which is advisory to the regulatory body. The TLC comprises of representatives and/or technical advisors from five Ministries (with competence in issues relevant to the procedure, such as environmental issues, transport, public health, medical equipment, commerce, energy, industry etc.), while representatives of district administrations, municipalities or other local authorities are invited to participate as observers.

***As referred to elsewhere, the regulatory body may issue general authorisation (registration) conditions for common practices with radiological equipment, e.g. dental or veterinary radiological practices, or radioactive practices of lower risk significance. As of July 2022, the regulatory body has issued general authorisation (registration) conditions for (a) veterinary radiodiagnostic practices; (b) practices with radiation generators used for non-medical imaging exposure and operating at less than 200 kV, excluding computed tomography practices; (c) practices with sealed radioactive sources of category 5; (d) practices with Unsealed Radioactive Sources with a Maximum Total Yearly Radioactivity of 100 MBq for Laboratory (in vitro) Medical or Non-Medical Application Purposes; and (e) practices with X-ray generators for Dental or Bone Densitometry applications. Two other Notifications on (f) General Conditions for granting approvals through Registration for Import, Export, Supply, Transportation and Other Practices with Radiation Generators for Medical or Non-Medical Exposure; and (g) Standards for the determination of National Protocols of Quality Controls in Radiological Equipment, are at the stage of internal consultation.***



## ***Inspection***

The Law allocates the responsibility to the regulatory body to establish a system of inspection to enforce the provisions of the Law and to initiate surveillance and corrective action where necessary. The regulatory body has established an appropriate inspection programme, taking into account the potential magnitude and nature of the hazard associated with practices, a general assessment of radiation protection issues in the practices, and the state of compliance. The findings from each inspection are recorded and also communicated to the license holder concerned. If the findings are related to an outside worker or workers, where appropriate, the findings are also communicated to the employer. The regulatory body makes publicly available the outlines of the inspection programmes and the main findings from their implementation. Moreover, the regulatory body is required to have mechanisms in place for the timely dissemination to relevant parties, including manufacturers and suppliers of radiation sources and, where appropriate, international organisations, of protection and safety information concerning significant lessons learned from inspections and from reported incidents and accidents and related findings.

In this framework, the MLSI appoints a Chief Inspector and Inspectors, and may appoint any other persons deemed appropriate for the application of the Law as well. The Chief Inspector and the Inspectors appointed under the Law are empowered to enter freely and without prior notice any premise, except domestic premises, for which they have reason to believe it is necessary to enter, at any reasonable time, or for which are of the opinion that a situation causes imminent risk of serious health detriment, serious degradation of the environment, or serious loss of use of property. They are also empowered to perform actions, such as, to carry out tests, investigations and surveys; to require the presentation of any register, notice, document etc. that is necessary for the purposes of any inspection, test, formal investigation or survey; to require any person to answer relevant questions or/and to facilitate and assist them; to make measurements, take photographs, make recordings and/or to take samples of any items or substances. Based on their findings and conclusions, the Chief Inspector and the Inspectors may proceed with a Verbal Notice or issue an Improvement Notice, a Prohibition Notice and/or a Fixed Penalty Notice. Depending on the nature of non-compliance, the case may be taken to the court.

## ***Enforcement and penalties***

The regulatory body has been provided through the Law with the power to require from any individual or legal person to take action to remedy deficiencies and prevent their recurrence or to withdraw, where appropriate, authorisation when the results of a regulatory inspection or another regulatory assessment indicate that the exposure situation is not in compliance with the Law.

If the Chief Inspector or an Inspector is of the opinion that any license holder is contravening any provision of the Law or of any Regulations issued under the Law or the conditions of its authorisation, (s)he may serve an Improvement Notice, requiring that person to remedy the contravention, or, as the case may be, the issues causing it, within a stated period of time.

If the Chief Inspector or an Inspector is of the opinion that any premises or installation, facility, plant, equipment, workplace, practice or other activity carried out in the premises, installation, facility, workplace or which is about to be carried on therein involves serious risk of health detriment, or serious loss of use of property or serious degradation of the quality of the environment arising from radiation, or as the case may be, it is expected to involve serious risk of health detriment, or serious loss of use of property, or serious degradation of the quality of the environment arising out of radiation, (s)he may serve on the license holder or the employer or its representatives or on the person who is responsible for the premises, installation equipment or place of work, or for the activities carried on therein, a Prohibition Notice, prohibiting forthwith the use of that premises, or installation, or equipment, or place of work, or the carrying out of practices or other activities, until the risk involved is lessened to the Inspector's satisfaction.

If the Chief Inspector or an Inspector is of the opinion that a license holder or an employer violates or has violated any provision of the Law or of the Regulations, Notices, Codes of Practice or Standards issued under the Law or violates or has breached any condition or requirement contained in the authorisation, (s)he is empowered to issue a Fixed Penalty Notice for up to €500 per non-compliance, subject to up to €5,000 per Notice and up to a maximum of €20,000 penalty for the same license holder or installation within a period of two years. ***The specifics of the Fixed Penalty Notice are further regulated by the Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Fixed Penalty Notice) Notification of 2021 (R.A.A. 241/2021).***

The MLSI may amend the conditions of a license granted to a license holder or employer at any time (s)he deems appropriate, by adding new or amending existing conditions or by revoking or cancelling the license. Whenever a license has been revoked or surrendered, RICS/DLI may give to the license holder such directions in writing as may be deemed necessary, for preventing any harm from ionising radiation or from anything which is being done or has been done or was present at the premises in question.

Any license holder or employer having been posed obligations under the Law that fails to comply with any provision of the Law or of any Regulation, Notice, Code of Practice or Standards issued thereunder, is guilty of an offense and is liable to a fine of up to €80,000 or to imprisonment not exceeding four years or to both such penalties.

***RICS/DLI implements internal procedures within its management system to ensure integrity and stability in enforcing the legislation and regulatory requirements.***

## ***Article 8. Regulatory Body***

- 1. Each Contracting Party shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework referred to in Article 7, and provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities.***
- 2. Each Contracting Party shall take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organisation concerned with the promotion or utilisation of nuclear energy.***

The MLSI, acting through RICS/DLI, is the sole regulatory body in Cyprus on radiation and nuclear safety and has the responsibility for the administration of relevant legislation and authorisation of all facilities, sources and practices involving exposure to ionising radiation.

RICS was established in 2002 within DLI, in the framework of the implementation of the Law, aiming at the protection of individuals, property and the environment against risks due to exposure to ionising radiation or dispersion of radioactive substances or radioactive contamination. The regulatory body is functionally separate from any other body or organisation concerned with the promotion or utilisation of ionising radiation in general, and effectively independent from undue influence in its regulatory decision making. The regulatory body has been given sufficient authority, legal power and competent staff to discharge its responsibilities under the national legislative framework.

***DLI is one of the Departments of Ministry of Labour and Social Insurance, with competence in Occupational Health and Safety, Air Quality Control, Control of Chemical Substances, Protection against Ionising Radiation and Nuclear Safety, and the Control of Machinery, Pressure Equipment, Equipment in Explosive Atmospheres and Personal Protective Equipment. DLI comprises two Sectors:***

**(a) the Safety and Health at Work Sector, which consists of three Sections:**

- **Awareness Raising and Horizontal Issues;**
- **Chemical Protection and Safety of Services;**
- **Manufacturing and Construction; and**

**(b) the Radiation Safety, Environmental Issues and Machinery Sector, which consists of four Sections:**

- **Machinery and Equipment;**
- **Air Quality Control and Strategic Planning;**
- **Nuclear Safety and Radiation Protection, established as RICS under the Law.**

There is a clear allocation of decision-making and other responsibilities between the regulatory body (the MLSI) and the governing body (RICS/DLI) i.e. executing the powers of the Chief Inspector (the Director the DLI) and the Inspectors, who are in charge of the regulatory body's performance and implementation of policies and decisions. Thus, a clear reference to hierarchy and relevant political or technical decisions is made through the organisational scheme of the regulatory body, preventing the probability of occurrence of direct or indirect interest/involvement in facilities or activities under regulatory control or other license holders and that staff remains focused on safety irrespective of their personal views.

All administrative decisions within the regulatory body in implementing the existing legislation are taken by the Chief Inspector (the Director of DLI). However, for any high-level policy issues e.g. for the adoption of the Government's policy for safety, radioactive waste management or capacity building through education and training, decisions are taken at MLSI level.

The regulatory body is able to make independent regulatory judgments and regulatory decisions, at all stages in the lifetime of facilities and the duration of activities until release from regulatory control, under operational states and in accidents, free from any undue influences that might compromise safety, such as pressures associated with changing political circumstances or economic conditions, or pressures from governmental departments or from other organisations. Inspectors are independent in exercising their inspection powers and are supervised by the Director of DLI (Chief Inspector). Furthermore, the staff of the regulatory body does have no direct or indirect interest/involvement in facilities and activities or license holders beyond the interest for regulatory purposes. Sufficient financial resources are allocated through the annual budget of DLI to the regulatory body for the proper and timely discharge of its assigned responsibilities. The regulatory body is able to give independent advice and provide reports to governmental departments and other bodies on issues relating to the safety of facilities and activities, including access to the highest levels of the Government. It is also capable of liaising directly with regulatory bodies of other States and with international organisations to promote cooperation and the exchange of regulatory related information and experience.

The number of qualified staff and the sufficiency of financial resources for the proper discharge of the assigned responsibilities is an on-going challenge, and there is always space for enhancing the capabilities of the regulatory body with additional qualified and trained staff and the allocation of additional budgetary funds. RICS/DLI is currently staffed with four Labour Inspection Officers, qualified in radiation protection and nuclear / radiological safety and security.

***Appropriate staffing of RICS/DLI remains a challenge, as there was a moratorium on new staff recruitments for the whole public service for several years. However, two additional posts have been allocated for the regulatory authority and are expected to be filled in 2022. This addition will increase the number of qualified staff from four to six persons, an increase of 50%. Appropriate education and training is provided to existing regulatory staff, mainly through DLI's internal training scheme, guidance and coaching from the most experienced staff and through IAEA Technical Cooperation programmes (scientific visits, fellowships, training courses, workshops etc.).***

***The system in place at RICS/DLI for establishing and addressing the competence and training needs among its staff aimed at improving their contribution to achievement of organisational goals and functions of the regulatory body has been recognised as an area of good performance under the 6th review cycle of the CNS.***

### ***Status and functions of the regulatory body***

The regulatory body ensures the establishment and maintenance of a national legal, regulatory and organisational framework for all aspects of the application of the Law, including the safety of facilities and sources of radiation and the protection against ionising radiation, including in particular:

- (a) the safety principles for protecting people – individually and collectively – society and the environment from radiation risks, both at present and in the future;
- (b) the types of facilities and activities that are included within the scope of the framework for safety;
- (c) the type of authorisation that is required for the operation of facilities and for the conduct of activities, in accordance with a graded approach;
- (d) the rationale for the authorisation of new facilities and activities, as well as the applicable decision making process;
- (e) provision for the involvement of interested parties and for their input to decision making;
- (f) provision for assigning legal responsibility for safety to the persons or organisations responsible for the facilities and activities, and for ensuring the continuity of responsibility where activities are carried out by several persons or organisations successively;
- (g) the establishment of a regulatory body;
- (h) provision for the review and assessment of facilities and activities, in accordance with a graded approach;
- (i) the authority and responsibility of the regulatory body for promulgating (or preparing for the enactment of) laws and regulations and preparing guidance for their implementation;
- (j) provision for the inspection of facilities and activities, and for the enforcement of regulations, in accordance with a graded approach;
- (k) provision for appeals against decisions of the regulatory body;
- (l) provision for preparedness and response to a nuclear or radiological emergency;
- (m) provision for an interface with nuclear security;
- (n) provision for an interface with the system of accounting for, and control of, nuclear material;
- (o) provision for acquiring and maintaining the necessary competence nationally for ensuring safety;
- (p) responsibilities and obligations in respect of financial provision for the management of radioactive waste and of spent fuel, and for decommissioning of facilities and termination of activities;
- (q) the criteria for release from regulatory control;
- (r) the specification of offences and the corresponding penalties; and
- (s) provision for controls on the import and export of nuclear material and radioactive material, as well as for their tracking within, and to the extent possible outside, national boundaries, such as tracking of the authorised export of radioactive sources.

RICS/DLI performs, inter alia, the following functions:

- (a) recommends safety and health standards for practices which may cause health detriment arising from exposure to ionising radiation or may cause harm to the environment or may give rise to loss of use of property due to dispersion of radioactive substances, or due to radioactive contamination;
- (b) reviews and assesses information related to the safety and protection of facilities and sources of radiation and related practices and activities, and the protection of individuals, property and the environment against ionising radiation, to check compliance with regulatory requirements or conditions set out in the authorisation;
- (c) receives notifications and grants authorisations;

- (d) inspects, for the purposes of compliance with the legislation in force, any practices or facilities in which activities are carried out that may cause a health detriment arising from exposure to ionising radiation or may cause harm to the environment or may give rise to loss of use of property due to dispersion of radioactive substances, or due to radioactive contamination;
- (e) carries out substantive and proportionate enforcement actions, including, where appropriate, corrective actions or the cessation of operation of a facility or the cessation of a practice and the amendment or revocation of an authorisation;
- (f) coordinates or ensures the existence of educational, scientific or other type of organisations for the purpose of providing of instructions for, or the education or training of apprenticeship or of other relevant services in respect of protection against risks from ionising radiation;
- (g) ensures the coordination of educational, scientific or other bodies responsible for providing education and training relevant to nuclear safety and radiation protection;
- (h) recognises the ability of experts and services provided for in the Law to act in accordance with the areas of their competence, as well as the qualifications and training of workers and other persons in safety and radiation protection issues;
- (i) keeps appropriate registers, including inventories of sources of ionising radiation, of premises, of practices and of the exposed workers and the doses received;
- (j) recommends the establishment of a national framework for nuclear safety and its improvement when appropriate, taking into account operating experience, insights gained from safety analyses of operating nuclear installations, development of technology and results of safety research, when available and relevant; and
- (k) monitors the levels of radioactivity in the air, soil, water, sea, foodstuff, feed, building materials and other products and goods, and ensures the application of appropriate measures, where appropriate.

The regulatory body has established in 2019 a national policy and strategy for safety, the implementation of which is subject to a graded approach in accordance with national circumstances and with the radiation risks associated with facilities and activities. The national policy and strategy for safety expresses the Government's long term commitment to safety and sets out the mechanisms for implementing the national policy, taking into account the country's international obligations and arrangements for international cooperation and assistance.

The Government has ensured through the regulatory body that, where necessary, there is appropriate national coordination of and liaison between the various authorities concerned in areas such as:

- (a) safety of workers and the public;
- (b) protection of the environment;
- (c) applications of radiation in medicine, industry and research;
- (d) emergency preparedness and response;
- (e) management of radioactive waste
- (f) nuclear security;
- (g) accounting for, and control of, nuclear material;
- (h) safety in relation to water use and the consumption of food;
- (i) land use, planning and construction;
- (j) safety in the transport of dangerous goods, including nuclear and radioactive material; and
- (k) controls on the import and export of nuclear and radioactive material.

The regulatory body, without compromising its effective independence, has made provision for technical services in relation to safety, such as personal dosimetry services, environmental monitoring and the calibration of equipment. These services include:

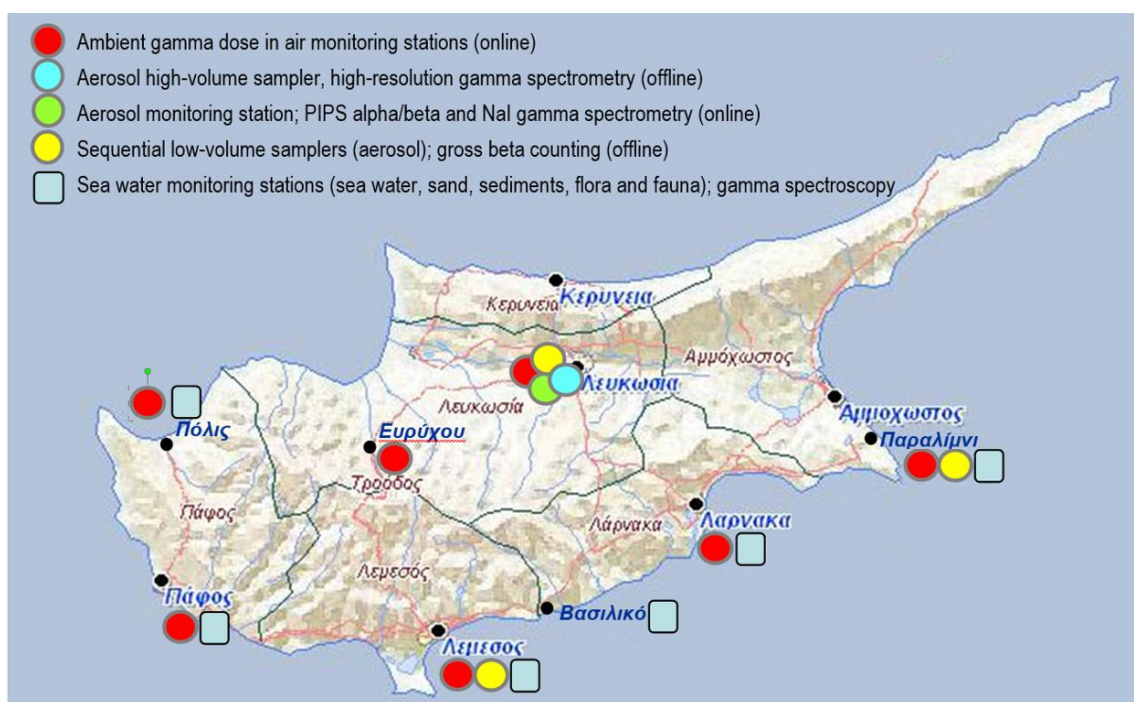
- (a) the Environmental and Food Radioactivity Laboratory of the State General Laboratory, established under the Ministry of Health, for laboratory environmental analysis and measurements;

- (b) the Secondary Standard Dosimetry Laboratory of the Nicosia General Hospital, ***State Health Service Organisation***;
- (c) other laboratories for analytical spectroscopic measurements; and
- (d) personal dosimetry laboratories.

The regulatory body is responsible to ensure that adequate infrastructural arrangements are established for the interface of safety with arrangements for nuclear security and with the country's system of accounting for, and control of, nuclear material. Specific responsibilities within the governmental and legal framework include:

- (a) an assessment of the configuration of facilities and activities for the optimisation of safety, with factors relating to nuclear security and to the system of accounting for, and control of, nuclear material being taken into account;
- (b) an oversight and enforcement to maintain arrangements for safety, nuclear security and the system of accounting for, and control of, nuclear material;
- (c) liaison with law enforcement agencies, as appropriate; and
- (d) integration of emergency arrangements for safety related and nuclear security related incidents.

The regulatory body has established an emergency preparedness and response system, including emergency arrangements and a national emergency preparedness and response action plan, to enable a timely and effective response in a nuclear or radiological emergency and to protect the public in a nuclear or radiological emergency declared as a consequence of an incident within or outside the territory and jurisdiction of the country. The Government has designated, through the national radiation emergency plan ELECTRA, response organisations that will have responsibilities and resources necessary to make preparations and arrangements for dealing with the consequences of incidents in facilities and activities that affect, or that might affect, the public and the environment. In the event of an emergency, the regulatory body is tasked to act as coordinator of the national radiation emergency plan, advise the Government and response organisations, and provide expert services.



A comprehensive environmental radioactivity monitoring network acts as both the early warning system in the country and for routine environmental monitoring. The network has been enhanced through the last years with the addition of an online aerosol spectroscopic monitoring station, located at Nicosia, and a portable surface contamination monitoring station with interconnection to the network capability. The

monitoring network has been further upgraded by means of power autonomy by establishing solar panels in all fixed ambient gamma dose rate monitoring stations and back-up communication/transmission of data channels.

The regulatory body makes continuous efforts to strengthen its capacity by means of procurement and appropriate maintenance of radiation detection and measurement equipment, relevant to its broad functions and responsibilities. ***Two high volume spectroscopic aerosol samplers are as of July 2022 under delivery, and the regulatory body makes efforts to upgrade its existing aerosol and sea monitoring infrastructure (hardware and software).***

### ***National and international coordination, participation and cooperation***

The regulatory body is the sole authority in Cyprus for nuclear safety and radiation protection. Transport of radiation sources is also conducted according to the regulations on the transport of dangerous goods (by road, sea or air) and the international radiation safety regulations, in cooperation with the relevant Departments of the Ministry of Transport, Communications and Works and the Shipping Deputy Ministry. As regards security of radioactive sources, other stakeholders in the country have competence as well, such as the Ministry of Justice and Public Order (Police, Fire Brigade, National CBRN-E Coordination Body); the Ministry of Foreign Affairs; the Ministry of Finance (Department of Customs); the Ministry of Energy, Commerce and Industry (exports control and licensing); the Ministry of Transport, Communications and Works (Department of Road Transport, Department of Civil Aviation, Department of Postal Services); the Shipping Deputy Ministry; the Cyprus Ports Authority; and the Cyprus Intelligence Service.

As discussed earlier, the regulatory body is supported by technical services for personal dosimetry, environmental monitoring and measurement and the calibration of equipment.

Cyprus has ratified, is signatory to or participates in a number of International Conventions, Protocols, Agreements and other Instruments in the area of safety and security and applies the relevant international standards for transport of radioactive materials, as reported under Article 7.

In order to ensure that information concerning any loss of control over radioactive sources, or any incidents, with potential transboundary effects involving radioactive sources, is provided promptly to potentially affected States, Cyprus participates via its regulatory body in the IAEA's Incident and Trafficking Database (ITDB) and the Unified System for Information Exchange in Incidents and Emergencies (USIE) platforms.

Cyprus has signed a Memorandum of Understanding with the Joint Research Center of the European Commission on the participation of Cyprus at the European Radiological Data Exchange Platform (EURDEP). Via its participation to EURDEP, Cyprus provides radiological data to the International Radiation Monitoring Information System (IRMIS) database, as well. Cyprus participates in the relevant European Community Urgent Radiological Information Exchange (ECURIE) platform of the European Commission and to the relevant ECUREX and a number of IAEA's ConvEx exercises. It's worth noting that Cyprus took part for the first time in 2017 in a large-scale ConvEx-3 exercise held by IAEA. Cyprus has completed its national profile and the emergency preparedness and response arrangements under the IAEA's Emergency Preparedness and Response Information Management System (EPRIMS) and a relevant Heads of European Radiological Protection Competent Authorities (HERCA) country fact sheet concerning national emergency preparedness and response arrangements. Moreover, Cyprus has contributed in the European Atlas of Natural Radiation, which displays the levels of natural radioactivity originating from various sources of radiation.

***Cyprus participates in the activities of the High-level Group on Nuclear Safety and Waste Management (ENSREG), which focuses upon seeking continuous improvement in nuclear safety arrangements through (a) supporting the implementation of the Nuclear Safety Directive and the***

***Spent Fuel and Radioactive Waste Directives; (b) providing advice to the European Commission and coordination of Member State regulatory bodies; and (c) facilitating active participation in IAEA peer reviews within the European Union and oversight of the completion of the national action plans resulting from the stress tests in the Europe region.***

Cyprus also participates in the activities of various other expert groups under the auspices of the European Commission, such as the Euratom Treaty Articles 31 and 37 Groups of Experts. In the Europe region, Cyprus participates since its establishment in HERCA, and in the Western European Nuclear Regulators Association (WENRA) as observer. ***It also participates in the Atomic Questions Working Party of the Council of the European Union.***

Despite of its small size, Cyprus makes efforts to involve relevant staff from the regulatory body and other institutions in international arrangements promoting safety and international cooperation and assistance, as well as providing feedback on lessons learned from operating and regulatory experience in other States, such as international peer reviews.

Cyprus has a bilateral agreement with the Greek Atomic Energy Commission, for cooperation on radiation protection and nuclear/radiological safety and security issues and for exchange of information on relevant issues. As a result, frequent education and training events are organised and knowledge, experiences and expertise is shared between the two authorities.

The regulatory body has the responsibility to ensure that information in relation to safety, security or radiation protection is made available to license holders, workers, and members of the public. This obligation includes ensuring that the regulatory body provides information within its fields of competence. Information is made available in accordance with national legislation and international obligations, provided that this does not jeopardise other interests such as, inter alia, security, recognised in national legislation or international obligations. Subsequently, the regulatory body is responsible to protect the confidentiality of any information that it receives in confidence from another State or through participation in an activity carried out in accordance with an international instrument. Information is promptly shared and cooperation established with other States and relevant international organisations regarding safety, security or radiation protection, without prejudice to relevant confidentiality requirements and relevant national legislation.

The regulatory body has established procedures to identify lessons learned from operating experience and regulatory experience, and disseminates information on the practical implementation of measures derived from this experience by the license holders, the regulatory body itself and, where relevant, by other relevant authorities. Relevant information is reported to international knowledge and reporting networks, as well.

### ***Openness, transparency and public consultation and communication***

(also responding to Good Practices GC-3 and GC-4 identified in the 7th CNS Review Meeting)

The regulatory body is required by the Law to ensure that information in relation to the justification of classes or types of practices, the regulation of radiation sources and of safety and radiation protection is made available to license holders, workers, and members of the public, as appropriate. This obligation includes ensuring that the regulatory body provides information within its fields of competence. Information is made available in accordance with national legislation and international obligations, provided that this does not jeopardise other interests such as, inter alia, security, as recognised in the national legislation or international obligations.

Originating from the Directive 2014/87/Euratom, the national legislation provides that all necessary information in relation to the nuclear safety of nuclear installations and its regulation is made available to workers and the general public, with specific consideration to local authorities, population and stakeholders in the vicinity of a nuclear installation. That obligation includes ensuring that the regulatory body and the



license holders, within their fields of responsibility, provide in the framework of their communication policy: (a) information on normal operating conditions of nuclear installations to workers and the general public; and (b) prompt information in case of incidents and accidents to workers and the general public and to the regulatory authorities of other States in the vicinity of a nuclear installation. The regulatory body is required to engage, as appropriate, in cooperation activities on the nuclear safety of nuclear installations with regulatory authorities of other States in the vicinity of a nuclear installation, inter alia, via the exchange and/or sharing of information. The regulatory body ensures that the general public is given the appropriate opportunities to participate effectively in the decision-making process relating to the licensing of nuclear installations, and regarding spent fuel and radioactive waste management in accordance with relevant legislation and international instruments. In practice, the regulatory body implements this obligation applying a graded approach in accordance with national conditions and the radiation risks associated with facilities and activities in the country.

The regulatory body consults, in assessing the conditions of licenses to be granted, by the TLC. The TLC comprises representatives and/or technical advisors from five Ministries (with competence in environmental issues, transport, public health, medical equipment, commerce, energy, industry etc.), while representatives of district administrations, municipalities or other local authorities are invited to participate as observers and may provide their opinion. The public is represented indirectly through the participation of the municipalities or other local authorities.

The Law requires that any license granted by the regulatory body, as well as the conditions accompanying the license, be displayed in the premises of the license holder in a prominent position. The public has in that way direct access to the safety conditions placed on the license holder.

All new pieces of legislation are accompanied by an impact assessment, which identifies any social, environmental or economic impact to Small and Medium-size Enterprises and the society in general, as well as to any special groups of the population and the general public. The impact assessment is part of the accompanying documents of draft pieces of legislation that undergo public consultation. In order to inform the public and provide information quickly and effectively, and depending on the nature of the document put under consultation, public consultation is conducted, mainly by means of publications or announcements and citations to where the draft documents are available, in the official website and the social media accounts maintained by the regulatory body, the Official Journal of the Republic, in the official website of the Press and Information Office (the Republic's official information gateway), in daily press, television and radio spots in channels of national and/or local coverage, electronic mailing lists, and providing copies at the offices of the interested local authorities. Special attention is given to informing the relevant interested parties in the country, such as the associations of the employers, the employees, the industry, technical and scientific organisations, academic institutions, other governmental agencies etc.

The above information may concern a forthcoming decision, the nature of possible decisions or, where such decision has already been made, the decision; the place and time in which the information associated with the impending decision are available to the public; and that any member of the public may submit to the regulatory body views or raise an issue within 35 days from the date of publication of the notice. In addition, the regulatory body, informs the public of the views received or issues raised by any person. Before taking a decision, the regulatory body shall take in due account the views received or issues raised. The way in which the regulatory body has taken into account the received views or raised issues shall be included in a summary statement, which is maintained in an appropriate record, as provided for in the legislation.

A special Council, called the Council of Nuclear Safety and Radiation Protection, is appointed by and advises the MLSI in the formulation of the national policy on ionising radiation issues, including the applications of nuclear techniques, nuclear or radiological safety and health and safety issues against the dangers of ionising radiation, and, as applicable, for all issues relating to nuclear energy, including issues of potential exposure to radiation from hazards from sources outside Cyprus. The Council comprises

representatives of Ministries, professional associations, the associations of employers and the employees, technical and scientific organisations and academia.

An evidence-based and documented decision-making process is required by the Law to be applied with regard to all stages of the lifetime of a facility, including the management of radioactive waste. The documentation of the decision-making process as it relates to safety should be commensurate with the levels of risk (graded approach) and should provide a basis for decisions related to the management of spent fuel and radioactive waste. This should enable the identification of areas of uncertainty on which attention needs to be focused in an assessment of safety. Safety decisions should be based on the findings of an assessment of safety and information on the robustness and reliability of that assessment and the assumptions made therein.

Decision-making shall be based on proven scientific information and recommendations of the national regulatory body (i.e. the MLSI). Safety issues shall take into account the interests and concerns of all interested and affected parties, when decisions are being made. The regulatory body shall ensure that the public is given the necessary opportunities to participate effectively in the decision-making process regarding waste management. Where there is uncertainty about the safety of an activity, a conservative approach shall be adopted.

Moreover, Cyprus is a party to the UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, known as the “Aarhus Convention”. This Convention establishes a number of rights of the public, individuals and their associations, with regard to the environment, such as the right of everyone to receive environmental information that is held by public authorities (“access to environmental information”), the right to participate in environmental decision-making (“public participation in environmental decision-making”), and the right to review procedures to challenge public decisions that have been made without respecting the two aforementioned rights or environmental law in general (“access to justice”). Cyprus is also party to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention and its amendment), its associated Protocol (UNECE Kiev Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context), as well. The MLSI has competence for all installations referred to in the above Conventions where ionising radiation is used.

Being an integral part of the MLSI, the regulatory body has traditionally good relations with the employee associations, the employer associations etc. The regulatory body’s cooperation and consultation with other competent authorities in the country, relevant stakeholders, including social partners, employer representatives, professional associations etc., for the coordinated implementation of legislation, has been identified as one of the areas of good performance during the 7<sup>th</sup> CNS Review Meeting.

***Cyprus has transposed to the national legal framework the Directive (EU) 2019/1937 of the European Parliament and of the Council of 23 October 2019 on the protection of persons who report breaches of Union law. This legislation lays down minimum standards for the protection of persons reporting the following breaches of Union law, including in radiation protection and nuclear safety issues.***

***The commitment of the country to improve safety and provide public confidence and acceptance, through cooperation or consultation with/involvement of the country’s other competent authorities, relevant stakeholders including social partners, employer representatives, professional associations etc., for coordinated implementation of legislation and enhancing public involvement on radioactive waste management, has been identified as an area of good performance both under the 7th review cycle of the CNS and the 6th review cycle of the Joint Convention.***

## ***Knowledge management***

The regulatory body has established a system to determine the competence of its employees. The regulatory body has established a training committee, consisting of representatives from all sections of the organisation that assess the competences and training needs of employees, independently of the management of the organisation, and recommends to the senior management the training and resources required to improve performance. All employees are required to annually complete a competence assessment questionnaire that is submitted to the training committee, which conducts interviews of employees indicating deficiencies in specified areas, as well as their supervisors/managers, assesses the training needs, compiles a report of and a budget to be approved by the director. An annual budget is allocated for training and the regulatory body's management ensures the provision of training through local institutions (e.g. the Cyprus Public Administration Academy or universities), consultants, other internal knowledge management initiatives (e.g. train-the-trainers workshops), the IAEA, the EU, other European or international organisations (e.g. HERCA) etc. As such, the regulatory body has been able to ensure that its employees continuously improve their competence in line with the changing standards, and technology.

The regulatory body's system for establishing and addressing the competence and training needs among its staff aimed at improving their contribution to achievement of organisational goals has been recognised as an area of good performance during the 7<sup>th</sup> CNS Review Meeting.

## ***Appeals against regulatory decisions***

***The regulatory body has established procedures for an applicant or a license holder that is affected by a refusal for an authorisation or the revocation of an authorisation or modification in the terms, requirements or conditions of an authorisation or the withdrawal of the authorisation to appeal to the MLSI. The MLSI examines the reasons of the appeal and approves, cancels or amends the decision of RICS. The decision of the MLSI is definite and irrevocable. The applicant or a license holder that is still affected can bring the case to the court. The new 2018 legislation analysed in the respective Section of the report has improved at a great extent the procedures and ensures the effective independence of the regulatory body in taking regulatory decisions (previously, those affected by regulatory decisions had to appeal to the Council of Ministers).***

## ***Article 9. Responsibility of the License Holder***

***Each Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant license and shall take the appropriate steps to ensure that each such license holder meets its responsibility.***

The new legislation introduces the definition of “undertaking”, in alignment with the definition used in the European Directive 2013/59/Euratom, meaning a natural or legal person who has legal responsibility under national Law for carrying out a practice, or for a radiation source (including cases where the owner or holder of a radiation source does not conduct related human activities). In this respect, not having an authorisation would not exonerate the person or organisation responsible for the facility or activity from the responsibility for safety, in accordance with IAEA standards. Although not exactly corresponding, the term “license holder” is used throughout this report instead of “undertaking” for compliance with the terminology of the CNS.

The national legislative framework assigns the prime responsibility for safety throughout the lifetime of a facility and the duration of an activity to the person or organisation responsible for the facility or the activity, and confers on the regulatory body the authority to require such persons or organisations to comply with stipulated regulatory requirements, as well as to demonstrate such compliance. The regulatory

body stipulates that compliance with regulations and requirements established or adopted by the regulatory body does not relieve the person or organisation responsible for a facility or an activity of its prime responsibility for safety. The responsibility for safety may be transferred to a different license holder only when there has been a declared change of general responsibility for a facility or activity that has been approved in advance by the regulatory body. In addition, responsibility for safety may extend to other groups associated with the license holder, such as designers, suppliers, manufacturers and constructors, employers, contractors, and consignors and carriers, in so far as their activities or products may be of significance for safety. Moreover, license holders may seek advice for safety, security and radiation protection issues from radiation protection experts (qualified experts) in the field of their competence, recognised by the regulatory body. In no case may this extension of responsibility or receiving advice or other services from external technical support organisations relieve the license holder of the prime responsibility for safety.

A license holder is responsible for carrying out its activities ensuring primarily the safety and security of facilities and activities, according to the national legislation and the conditions of the license, meeting the safety standards and applying the basic principles of radiation protection, and taking all appropriate measures to protect workers, members of the public, property and the environment from risks arising from the use of ionising radiation.

As part of the licensing process of a facility or activity, the safety demonstration shall cover the development and operation of an activity and the site evaluation, design, construction, commissioning, operation, shutdown and decommissioning, as applicable. The extent of safety demonstration has to be commensurate with the complexity of the operation and the magnitude of the hazards associated with the radioactive waste, and the facility or activity. The licensing process contributes to safety in the facility or activity during normal operating conditions, anticipated operational occurrences and design basis accidents. Measures need to be in place to prevent accidents and mitigate the consequences of accidents, including verification of physical barriers and the license holder's administrative protection procedures that would have to fail before workers and the general public would be significantly affected by ionising radiation.

The national legislation on radiation protection and nuclear and radiological safety and security also provides that a license holder shall take all necessary technical and administrative measures, in relation to the license granted to it, for ensuring safety and health of any individual and for protecting the use of, or property of any person and the environment and shall establish and implement integrated management systems, including quality assurance, which give due priority to safety and are regularly verified by the regulatory body. The license holder may appoint other persons to carry out actions or to carry out tasks related to its obligations as a license holder, but the license holder shall retain the responsibility for such actions, tasks or omissions itself and has the overall responsibility for the radiation protection and nuclear and radiological safety and security. A license holder shall notify RICS/DLI in writing of its intention to introduce modifications to any practice or source for which it is licensed, and whenever the modifications will have significant implications on safety and health issues, on the protection of use of property of any person and on the protection of the environment, it shall not carry out any modification unless it has a new license for this purpose.

Complementary to the above, the national strategy provides, as concerns the compliance of the license holders, the following requirements, obligations and principles:

- (a) The license holders shall adopt measures for preventing or, where this is not achievable, minimising as reasonably achievable the quantity of radioactive waste generated by their activities, both in terms of activity and volume, by means of appropriate design measures and of operating and decommissioning practices. The license holders shall explore the possibility of reusing or recycling the whole or part of the radioactive waste they produce. The minimisation of the effects of disposals on environment and members of the public shall be one of the main priorities of license holders;

- (b) The license holders shall apply the principles of justification, optimisation, and dose limitation, and take all appropriate measures, as necessary, to protect workers, patients, the public, property and the environment from risks arising from the use of ionising radiation, including activities leading to the generation and management of radioactive waste;
- (c) The license holders shall regularly assess, verify and continuously improve to the reasonably achievable extent the safety of the radioactive waste management facility in a systematic and verifiable manner;
- (d) The license holders shall establish and implement integrated management systems, including quality assurance, in order to give due priority to the safety of the overall radioactive waste management scheme; and
- (e) The license holders shall have measures in place to prevent accidents and mitigate the consequences of accidents, including verification of physical barriers and the license holder's administrative protection procedures that would have to fail before workers and the general public would be significantly affected by ionising radiation.

The compliance of the license holders with the national legislation, the conditions of the license and any other applicable safety standards is assessed and verified by the regulatory body through review and assessment, authorisation, and inspections, both announced and unannounced.

### ***Article 10. Priority to Safety***

*Each Contracting Party shall take the appropriate steps to ensure that all organisations engaged in activities directly related to nuclear installations shall establish policies that give due priority to nuclear safety.*

Organisations engaged in activities directly related to facilities using radiation are required to exhibit an adequate demonstration of safety in support of an application for the authorisation of a facility or an activity. Prior to the granting of an authorisation, the applicant is required to submit a safety assessment, which is reviewed and assessed by the regulatory body in accordance with specified procedures. The safety demonstration covers the development and operation of an activity and all stages in the lifetime of a facility, as applicable. Moreover, it includes the scope and level of detail commensurate with the potential magnitude and nature of the hazard relevant for the facility or activity and its site.

As detailed in the previous section, the prime responsibility for the safety of a nuclear installation or any other facility where practices with ionising radiation are conducted rests with the license holder. That responsibility cannot be delegated and includes responsibility for the activities of contractors and sub-contractors whose activities might affect the safety of a facility.

The license holders are required to regularly assess, verify, and continuously improve, as far as reasonably practicable, the safety of their facilities in a systematic and verifiable manner. This includes verification that measures are in place for the prevention of accidents and mitigation of the consequences of accidents. Each license holder or employer shall establish an appropriate management system, depending on the size of the license holder or the extent of practice for which authorisation has been granted, which shall ensure, inter alia, that there is a policy and procedures demonstrating that safety and protection against the dangers due to the use of ionising radiation is one of its priorities.

In order to demonstrate compliance and that it gives due priority to safety, a license holder is required, inter alia, to submit: (a) a comprehensive risk assessment and measures to mitigate the effects of an accident; (b) an appropriate action plan in case of an emergency; (c) arrangements in place for education and training and information provided to all persons that have been allocated responsibilities associated with the safety or radiation protection; (d) an appropriate management system and quality control programmes which give due priority to safety; (e) actions to establish and further promote the safety culture; (f) the appropriate equipment, methods and measurements; and (g) adequate financial and human resources with appropriate qualifications and competences, necessary to fulfil their obligations with respect to the safety of a facility.

In particular to on-site emergency procedures and arrangements for responding effectively to accidents in order to prevent or mitigate their consequences, these are required to: (a) be consistent with other operational procedures and periodically exercised to verify their practicability; (b) be aligned with any national or local off-site arrangements in place; (c) address accidents and severe accidents that could occur in all operational modes and those that simultaneously involve or affect several units; (d) provide arrangements to receive external assistance; and (e) be periodically reviewed and regularly updated, taking account of the experience from exercises and lessons learned from accidents.

Concerning the promotion of safety culture, the license holder is required to take measures to promote and enhance an effective safety culture. Those measures include in particular: (a) management systems which give due priority to safety and promote, at all levels of staff and management, the ability to question the effective delivery of relevant safety principles and practices, and to report in a timely manner on safety issues; (b) arrangements by the license holder to document safety significant operating experience; (c) the obligation of the license holder to report events with a potential impact on safety to the regulatory body; and (d) arrangements for education and training.

The license holder or the employer shall take appropriate measures to foster, promote and maintain an effective safety and protection culture at all levels of the staff and the management itself, as a key factor in achieving a high level of safety and protection, which is constantly improving. These measures shall include in particular: (a) the commitment at all levels of personnel and the management to safety and its continuous improvement; (b) improving the ability of staff at all levels to assess whether principles and practices are provided for the continuous improvement of safety; (c) the ability of staff to report in a timely manner on safety issues to the management; (d) lessons learned from the operating experience of the facility; and (e) systematically reporting any deviation from normal operating conditions and addressing corrective actions related to the management of accidents that are likely to affect safety.

### ***Article 11. Financial and Human Resources***

- 1. Each Contracting Party shall take the appropriate steps to ensure that adequate financial resources are available to support the safety of each nuclear installation throughout its life.*
- 2. Each Contracting Party shall take the appropriate steps to ensure that sufficient numbers of qualified staff with appropriate education, training and retraining are available for all safety-related activities in or for each nuclear installation, throughout its life.*

License holders are required to provide for and maintain financial and human resources with appropriate qualifications and competences, necessary to fulfil their obligations with respect to the safety of a facility.

In particular, in order to grant an authorisation for practices involving high-activity sealed sources, the regulatory body requires the applicant to have made adequate provision, by way of a financial security or any other equivalent means appropriate for the source in question, for the safe management of radiation sources once they become disused, including the case where the license holder becomes insolvent or ceases its activities. Also, the legislation provides for the establishment of a financial security system to cover intervention costs relating to the recovery, management, control and disposal of orphan sources.

The national legislation provides that all parties shall make arrangements for the education and training of their staff having responsibilities related to the safety of facilities so as to obtain, maintain and to further develop expertise and skills in safety, so that they understand their responsibilities and perform their duties with good judgement and according to the specified procedures, and on-site emergency preparedness, and on-site emergency preparedness.

License holders are also required to ensure that contractors and subcontractors under their responsibility and whose activities might affect the nuclear safety of a nuclear installation have the necessary human resources with appropriate qualifications and competences to fulfil their obligations.

***The specifics of the requirements of license holders for education and training of the staff is further defined in the Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Standards for Education and Training in Radiation Protection and Nuclear and Radiological Safety and Security) Notification of 2019 (R.A.A. 327/2019).***

## ***Article 12. Human Factors***

***Each Contracting Party shall take the appropriate steps to ensure that the capabilities and limitations of human performance are taken into account throughout the life of a nuclear installation.***

A license holder or the employer is required to ensure that only those persons who are named or whose knowledge and skills are described in the authorisation are entrusted with important tasks in relation to safety and radiation protection and that only those workers entrusted with such tasks involving the operation or use of radiation sources will perform such tasks.

A license holder or the employer shall apply measures following the general prevention principles: (a) avoiding or minimising risks; (b) assessing of the risks that cannot be avoided; (c) combating risks at the source; (d) adapting work to people, in particular as regards job posts and the choice of work equipment and working methods; (e) monitoring the evolution of technology; (f) replacing what's hazardous by what's non-hazardous or the least hazardous; (g) developing a single and comprehensive prevention policy covering technology, work organisation, working conditions, relations between the social partners and the impact of factors linked to the working environment; (h) giving priority to collective protection measures without undermining the application or taking of personal protective measures; and (i) providing appropriate instructions to persons at work.

A license holder or the employer, in cooperation with manufacturers or suppliers, shall, where reasonably practicable, follow the principles of ergonomics when designing equipment, workplaces and operating procedures in order to ensure safety, protecting the health of individuals and protecting the environment, as well as minimising the risk of accidents.

A license holder or the employer shall ensure that all necessary measures are taken to ensure that work equipment, appliances and tools made available to the employees are suitable for the work to be carried out or suitably adapted for that purpose; in order to ensure the safety and health protection of individuals and the protection of the environment when using them.

A license holder or the employer shall ensure that the necessary equipment, safety systems and procedures are in place to: (a) reduce, as far as is reasonably practicable, the possibility of a human error that may lead to exposure of any person, loss of use of property or radioactive contamination of the environment; (b) identify and correct timely human errors; and (c) facilitate intervention in the event of an accident.

The license holder shall establish and implement an appropriate management system, which give due priority to nuclear and radiological safety. In order to achieve this safety objective, the license holder shall, inter alia, ensure that: (a) the impact of extreme natural and unintended man-made hazards is minimised; (b) abnormal operation and failures are prevented; (c) non-normal operation is checked and failures are detected; (d) the resulting accidents occurring within the design basis are controlled; (e) serious conditions, including prevention, accident evolution and mitigation of major accidents, are controlled; (f) organisational arrangements for on-site preparedness and emergency response have been set up with a clear division of responsibilities and coordination between the license holder, the regulatory body and the emergency response bodies or organisations, taking into account all phases of an emergency.

### **Article 13. Quality Assurance**

*Each Contracting Party shall take the appropriate steps to ensure that quality assurance programmes are established and implemented with a view to providing confidence that specified requirements for all activities important to nuclear safety are satisfied throughout the life of a nuclear installation.*

The legislative framework on radiation protection and nuclear safety and security provides that, a license holder shall establish an appropriate management and administrative system, commensurate with the size of the license holder, the facility and the practice for which authorisation has been granted, and a quality assurance programme, as appropriate, ensuring that:

- (a) a policy and procedures are in place, demonstrating that safety and protection against the dangers from ionising radiation is one of the priorities of the license holder;
- (b) the risks arising from the use of ionising radiation for the health and safety of persons, for the use of property and for the protection of the environment are identified in a timely manner and corrective actions are taken in proportion to the magnitude of the risk;
- (c) the responsibilities of each individual, as well as its powers for decision-making as regards safety, security, protection, health and safety of persons or the protection of the use of property or the protection of the environment are clearly defined and such persons are suitably trained and have the necessary qualifications;
- (d) there is continuous provision of information and guidance on safety, security and protection against ionising radiation at all levels of operation of the license holder;
- (e) where practicable, radioactive sources under the responsibility of the license holder or the employer are made identifiable and traceable or, where this is impracticable, there are alternative procedures for the identification and tracking of such sources;
- (f) where DSRS are stored for an extended period of time, after authorisation by the regulatory body, the facility where they are stored is suitable for that purpose; and
- (g) appropriate and up-to-date records relating to the sources and practices the license holder carries out are maintained and are available to the regulatory body.

The license holder compliance with the provisions of national legislation is assessed and verified by the regulatory body through the authorisation process, inspections and evaluation of risk assessment and emergency procedures reports.

*The regulatory body has issued for this purpose the Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Implementation of a Management System by the Undertaking or the Employer) Notification of 2020 (R.A.A. 427/2020).*

### **Article 14. Assessment and verification of safety**

*Each Contracting Party shall take the appropriate steps to ensure that:*

1. *Comprehensive and systematic safety assessments are carried out before the construction and commissioning of a nuclear installation and throughout its life. Such assessments shall be well documented, subsequently updated in the light of operating experience and significant new safety information, and reviewed under the authority of the regulatory body;*
2. *Verification by analysis, surveillance, testing and inspection is carried out to ensure that the physical state and the operation of the nuclear installation continue to be in accordance with its design, applicable national safety requirements, and operational limits and conditions.*

The Law provides that a license holder or the employer are required to carry out a comprehensive and systematic safety (risk) assessment, demonstrating that all the risks that are likely to lead to an accident have been identified, as well as the nature and magnitude of any effects in the facility, radiation sources, property or the environment. The risk assessment should be reviewed whenever significant changes occur



in the current practices and based on the operating experience and the available knowledge. The safety assessment is required to be documented in an appropriate safety report, which is submitted to the regulatory body for review and assessment prior to the granting of the authorisation. The regulatory body may require the license holder or the employer, if deemed appropriate, to provide a more detailed safety assessment in the safety report.

The safety assessment and the control of the effectiveness of safety and protection measures implemented by the license holder or the employer in relation to facilities and sources of radiation are carried out in various phases, including decision on siting, design, construction, commissioning, operation, maintaining, shut down, dismantling or decommissioning of a facility under the responsibility of the license holder or the employer, as appropriate, in order to: (a) identify how individuals are exposed or are likely to be exposed to ionising radiation; (b) identify how the safety of facilities or sources of radiation are affected or likely to be affected; (c) identify how the loss of use of property is likely to occur or whether or not there may be an adverse effect on the property or the environment; (d) determine the level of any normal exposure; (e) determine the likelihood of any exposure occurring and the magnitude of any potential exposure; and (f) assess the quality and effectiveness of safety measures and the safe operation of facilities.

A license holder or the employer are required to implement quality assurance programmes, which shall ensure, as appropriate: (a) appropriate guarantees that the measures applied for safety are satisfactory; (b) quality control mechanisms and procedures for assessing the effectiveness of the measures; and (c) license holders regularly assess, verify, and continuously improve, as far as reasonably practicable, the safety of their facilities in a systematic and verifiable manner.

***The regulatory body has issues for this purpose the Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on Conducting Risk Assessment) Notification of 2020 (R.A.A. 428/2020).***

### ***Article 15. Radiation Protection***

***Each Contracting Party shall take the appropriate steps to ensure that in all operational states the radiation exposure to the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed prescribed national dose limits.***

The Government has established the legal requirements and an appropriate regime of regulatory control which, for all exposure situations (occupational, public, and medical exposure) are based on the principles of justification, optimisation and dose limitation.

***The regulatory body has established:***

- (a) dose constraints for the purpose of prospective optimisation of protection for all exposure situations;***
- (b) reference levels for emergency and existing exposure situations (optimisation of protection gives priority to exposures above the reference level and shall continue to be implemented below the reference level); and***
- (c) dose limits for occupational and public exposure, as well as for apprentices and students. Also, the protection of the unborn child is comparable with that provided for members of the public.***

For the purposes of radiation protection in occupational exposures, the license holders are required to have in place special arrangements as regards all workplaces where workers are liable to receive an exposure greater than an effective dose of 1 mSv per year or an equivalent dose of 15 mSv per year for the lens of the eye or 50 mSv per year for the skin and extremities. Such arrangements shall be appropriate to the

nature of the facilities and radiation sources and to the magnitude and nature of the risks. The license holder is responsible for assessing and implementing arrangements for the radiation protection of exposed workers. In the case of outside workers, the responsibilities of the license holder and the employer of outside workers are also stipulated in the legislation.

The operational protection of exposed workers is based on: (a) prior evaluation to identify the nature and magnitude of the radiological risk to exposed workers; (b) optimisation of radiation protection in all working conditions, including occupational exposures as a consequence of practices involving medical exposures; (c) classification of exposed workers into different categories; (d) control measures and monitoring relating to the different areas and working conditions, including, where necessary, individual monitoring; (e) medical surveillance; and (f) education and training.

The license holder is required to have arrangements in workplaces that include: (a) a classification into controlled and supervised areas, where appropriate, on the basis of an assessment of the expected annual doses and the probability and magnitude of potential exposures; (b) radiological surveillance of the workplace; (c) categorisation of exposed workers; (d) individual measurements performed by a dosimetry service; and (e) when appropriate, medical surveillance of exposed workers.

As concerns the operational protection of members of the public in normal circumstances from practices subject to licensing, the license holders are required to ensure that this protection includes, for relevant facilities: (a) examination and approval of the proposed siting of the facility from a radiation protection point of view, taking into account relevant demographic, meteorological, geological, hydrological and ecological conditions; (b) acceptance into service of the facility subject to adequate protection being provided against any exposure or radioactive contamination liable to extend beyond the perimeter of the facility or radioactive contamination liable to extend to the ground beneath the facility; (c) examination and approval of plans for the discharge of radioactive effluents; (d) measures to control the access of members of the public to the facility. The regulatory body is required, where appropriate, to establish authorised limits as part of the discharge authorisation and conditions for discharging radioactive effluents which: (a) take into account the results of the optimisation of radiation protection; and (b) reflect good practice in the operation of similar facilities. In addition, these discharge authorisations shall take into account, where appropriate, the results of a generic screening assessment based on internationally recognised scientific guidance, to demonstrate that environmental criteria for long-term human health protection are met.

The license holder responsible for practices where a discharge authorisation is granted is required to monitor appropriately or where appropriate evaluate the radioactive airborne or liquid discharges into the environment in normal operation and to report the results to the regulatory body. Moreover, the license holder is required to carry out the following tasks: (a) achieve and maintain an optimal level of protection of members of the public; (b) accept into service adequate equipment and procedures for measuring and assessing exposure of members of the public and radioactive contamination of the environment; (c) check the effectiveness and maintenance of equipment as referred to in point (b) and ensure the regular calibration of measuring instruments; (d) seek advice from a radiation protection expert in the performance of the tasks referred to in points (a), (b) and (c).

## ***Article 16. Emergency preparedness***

- 1. Each Contracting Party shall take the appropriate steps to ensure that there are on-site and off-site emergency plans that are routinely tested for nuclear installations and cover the activities to be carried out in the event of an emergency.  
For any new nuclear installation, such plans shall be prepared and tested before it commences operation above a low power level agreed by the regulatory body.***
- 2. Each Contracting Party shall take the appropriate steps to ensure that, insofar as they are likely to be affected by a radiological emergency, its own population and the competent authorities of the States in the vicinity of the nuclear installation are provided with appropriate information for emergency planning and response.***

3. *Contracting Parties which do not have a nuclear installation on their territory, insofar as they are likely to be affected in the event of a radiological emergency at a nuclear installation in the vicinity, shall take the appropriate steps for the preparation and testing of emergency plans for their territory that cover the activities to be carried out in the event of such an emergency.*

### ***Emergency management system***

The national legislative framework aims at protecting the public in a nuclear or radiological emergency and requires that account is taken of the fact that emergencies may occur in the territory of the country and that the country may be affected by emergencies occurring outside its territory. The emergency management system established requires adequate administrative provisions to be in place to maintain such a system and is commensurate with the results of the assessment of potential emergency exposure situations.

The emergency management system includes, but is not restricted to, the following elements: (a) assessment of potential emergency exposure situations and associated public and emergency occupational exposures; (b) clear allocation of the responsibilities of persons and organisations having a role in preparedness and response arrangements, so that timely and effective decisions can be made in an emergency; (c) establishment of emergency response plans at appropriate levels and related to a specific facility or human activity; (d) provision for effective coordination of and communication between license holders and response organisations; (e) reliable communications and efficient and effective arrangements for cooperation and coordination at the facility and at appropriate national and international level; (f) health protection of emergency workers; (g) arrangements for the provision of prior information and training for emergency workers and all other persons with duties or responsibilities in emergency response, including regular exercises; (h) arrangements for individual monitoring or assessment of individual doses of emergency workers and the recording of doses; (i) public information arrangements; (j) involvement of stakeholders; and (k) transition from an emergency exposure situation to an existing exposure situation, including recovery and remediation.

### ***Off-site emergency procedures and arrangements (preparedness phase)***

The emergency management system includes, inter alia, the national off-site emergency response plan in case of a nuclear or radiological accident/incident, titled ELECTRA, with the objective of avoiding severe deterministic effects in any individual from the affected population and reducing the risk of stochastic effects, taking account of the general principles of radiation protection and appropriate reference levels (emergency exposure situation). The specific goals of the emergency plan in a nuclear or radiological emergency are to: (a) regain control of the situation and to mitigate consequences; (b) save lives; (c) avoid or to minimise severe deterministic effects; (d) render first aid, to provide critical medical treatment and to manage the treatment of radiation injuries; (e) reduce the risk of stochastic effects; (f) keep the public informed and maintain public trust; (g) mitigate, to the extent practicable, non-radiological consequences; (h) protect, to the extent practicable, property and the environment; and (i) prepare, to the extent practicable, for the resumption of normal social and economic activity.

The emergency response plan for nuclear or radiological emergencies ELECTRA is one of the 24 specific action plans under the General Crisis Management plan of the country titled ZENON, which adopts the all-hazards approach. This plan stipulates hazard categorisation according to IAEA standards and covers the various types of emergencies identified by the assessment of potential emergency exposure situations, either from abroad or within the country. The plan incorporates relevant elements of the emergency management system referred above.

The elements covered by the emergency plan ELECTRA are, for emergency preparedness: (a) reference levels for public exposure; (b) reference levels for emergency occupational exposure; (c) an optimised protection strategy for members of the public who may be exposed, for different postulated events and related scenarios; (d) predefined generic criteria for particular protective measures; (e) operational criteria, such as observables and indicators of on-scene conditions; and (f) arrangements for prompt coordination between organisations having a role in emergency preparedness and response; and for emergency response: (a) timely implementation of preparedness arrangements; (b) prompt implementation of protective measures, if possible before any exposure occurs; (c) assessment of the effectiveness of the strategy adopted and implementation of actions and adjustment of these actions, as appropriate, to the prevailing situation; and (d) comparison of the doses against the applicable reference level, focusing on those groups whose doses exceed the reference level.

Among the roles of the regulatory body in preparing the emergency plan and in the event of an emergency is to advise the Government and response organisations and provide expertise, for example, in radiation monitoring and risk assessment for actual and expected future radiation risks.

The plan ELECTRA includes clear provisions on when and how is tested, reviewed and, as appropriate, revised at regular intervals, taking into account lessons learned from past emergency exposure situations and the results of the participation in emergency exercises at national and international level.

The 7<sup>th</sup> CNS Review Meeting has recognised as an area of good performance the fact that the national emergency plan covers all potential scenarios, including nuclear/radiological terrorism, is integrated within the General Crisis Management Plan of the country, and is aligned with IAEA's GSR Part 7.

### ***Emergency response***

The national legislative and regulatory framework requires the license holder to notify the regulatory body immediately of any emergency in relation to the practices for which it is responsible and to take all appropriate action to reduce the consequences. In the event of an emergency in the country's territory, the license holder concerned makes an initial provisional assessment of the circumstances and consequences of the emergency and assists with protective measures.

The legislative and regulatory framework require, in the event of an emergency in or outside the country's territory: (a) the implementation of appropriate protective measures, taking account of the real characteristics of the emergency and in accordance with the optimised protection strategy as part of the emergency response plan; and (b) the assessment and recording of the consequences of the emergency and of the effectiveness of the protective measures.

### ***Information to the public likely to be affected in the event of an emergency***

In the event of an emergency, the Law requires that the members of the public likely to be affected in the event of an emergency are provided with appropriate information about the health protection measures applicable to them and about the actions they should take in the event of such an emergency.

This information mainly includes: (a) basic facts about radioactivity and its effects on human beings and on the environment; (b) the various types of emergency covered and their consequences for the public and the environment; (c) emergency measures envisaged to alert, protect and assist the public in the event of an emergency; and (d) appropriate information on action to be taken by the public in the event of an emergency.

The information is updated and distributed at regular intervals and whenever significant changes take place. Provision is taken that this information is permanently available to the public.

### ***Information to the public actually affected in the event of an emergency***

When an emergency occurs, the Law requires that the members of the public actually affected are informed without delay about the facts of the emergency, the steps to be taken and, as appropriate, the health protection measures applicable to these members of the public.

The information to be rapidly provided shall cover: (a) the type of emergency which has occurred and, where possible, its characteristics (e.g. its origin, extent and probable development); (b) advice on protection, which, depending on the type of emergency, may: (i) cover the following: restrictions on the consumption of certain foodstuffs and water likely to be contaminated, simple rules on hygiene and decontamination, recommendations to stay indoors, distribution and use of protective substances, evacuation arrangements; (ii) be accompanied, where necessary, by special warnings for certain groups of the members of the public; (c) announcements recommending cooperation with instructions or requests by the regulatory body. Other information to be received is: (a) invitation to the members of the public concerned to tune in to relevant communication channels; (b) preparatory advice to establishments with particular collective responsibilities; and (c) recommendations to occupational groups particularly affected.

### ***On-site emergency procedures and arrangements***

The legislative and regulatory framework provides that the license holders shall have in place and regularly update a threat (risk) assessment as the basis of their EPR plans, for responding effectively to accidents in order to prevent or mitigate their consequences. The role of the license holders in EPR as stated in the legislation is consistent with the assignment of roles and responsibilities in the national EPR framework established by the regulatory body, including the national EPR plan in case of nuclear or radiological event ELECTRA. Responsibilities have been also allocated for the management of interventions in emergency exposure situations between the regulatory body, national and local response organisations and the operators/license holders.

Whenever the risk assessment indicates that a radiological emergency might occur, the license holder or the employer shall prepare in writing and implement an appropriate contingency plan designed to prevent or limit the exposure to radiation of any person and protect the environment. The contingency plans shall: (a) include procedures, guidelines and arrangements to deal with accidents that may occur in all operational, termination and transition situations, ensuring consistency and continuity between all these procedures and arrangements; (b) be consistent with other operational procedures and periodically exercised to verify their practicability; (c) be based on an organisational structure with a clear division of responsibilities and coordination between the company itself and the emergency responders or bodies; (d) be periodically reviewed and regularly updated, taking account of experience from exercises and lessons learned from accidents; (e) be periodically tested at appropriate intervals, taking into account any changes in the practices carried out, the available knowledge and experience and the risk assessment; (f) include provisions on adequate and trained personnel, adequate and adequate equipment and other necessary resources; (g) assign clear responsibility for prompt notification of the emergency situation to the regulatory body and the emergency response bodies or organisations; (h) provide arrangements to receive external assistance; and (i) be submitted for review and assessment to the regulatory body as part of the application for authorisation.

### ***International cooperation***

The national legislative and regulatory framework provides for the cooperation with other States in addressing possible emergencies in the territory of the country which may affect other States, in order to facilitate the organisation of radiological protection in these States.

The regulatory body shall, in the event of an emergency occurring on its territory or likely to have radiological consequences on its territory, promptly establish contact with regulatory authorities of other States which may be involved or are likely to be affected with a view to sharing the assessment of the exposure situation and coordinating protective measures and public information by using, as appropriate, bilateral or international information exchange and coordination systems. These coordination activities shall not prevent or delay any necessary actions to be taken on a national level.

The regulatory body shall promptly share information and cooperate with other relevant States and relevant international organisations regarding the loss, theft or discovery of high-activity sealed sources, other radioactive sources and radioactive material of concern and regarding related follow-up or investigations, without prejudice to relevant confidentiality requirements and relevant national legislation.

Apart from a regulatory body, Cyprus has appointed a single national 24/7 warning point under the IAEA Convention on Early Warning in Case of a Nuclear Accident and participates in the IAEA USIE platform. Cyprus participates in the ECURIE and EURDEP platforms of the EU, and RICS/DLI is the focal point for these platforms, as well as for IAEA USIE and ITDB. A network of ambient gamma dose rate and aerosol monitoring stations serves as the country's early warning system.

***Cyprus has organised in cooperation with IAEA and hosted in Nicosia relevant workshops on the medical response to a nuclear or radiological emergency (2019), the termination of a nuclear or radiological emergency (2018), and on first responders (ambulance service staff) (2021).***

### ***Article 17. Siting***

*Each Contracting Party shall take the appropriate steps to ensure that appropriate procedures are established and implemented:*

- (i) For evaluating all relevant site-related factors likely to affect the safety of a nuclear installation for its projected lifetime;*
- (ii) For evaluating the likely safety impact of a proposed nuclear installation on individuals, society and the environment;*
- (iii) For re-evaluating as necessary all relevant factors referred to in sub-paragraphs (i) and (ii) so as to ensure the continued safety acceptability of the nuclear installation;*
- (iv) For consulting Contracting Parties in the vicinity of a proposed nuclear installation, insofar as they are likely to be affected by that installation and, upon request providing the necessary information to such Contracting Parties, in order to enable them to evaluate and make their own assessment of the like safety impact on their own territory of the nuclear installation.*

### ***Article 18. Design and Construction***

*Each Contracting Party shall take the appropriate steps to ensure that:*

- (i) The design and construction of a nuclear installation provides for several reliable levels and methods of protection (defence in depth) against the release of radioactive materials, with a view to preventing the occurrence of accidents and to mitigating their radiological consequences should they occur;*
- (ii) The technologies incorporated in the design and construction of a nuclear installation are proven by experience or qualified by testing or analysis;*
- (iii) The design of a nuclear installation allows for reliable, stable and easily manageable operation, with specific consideration of human factors and the man-machine interface.*

## **Article 19. Operation**

*Each Contracting Party shall take the appropriate steps to ensure that:*

- (i) The initial authorisation to operate a nuclear installation is based upon an appropriate safety analysis and a commissioning programme demonstrating that the installation, as constructed, is consistent with design and safety requirements;*
- (ii) Operational limits and conditions derived from the safety analysis, tests and operational experience are defined and revised as necessary for identifying safe boundaries for operation;*
- (iii) Operation, maintenance, inspection and testing of a nuclear installation are conducted in accordance with approved procedures;*
- (iv) Procedures are established for responding to anticipated operational occurrences and to accidents;*
- (v) Necessary engineering and technical support in all safety related fields is available throughout the lifetime of a nuclear installation;*
- (vi) Incidents significant to safety are reported in a timely manner by the holder of the relevant license to the regulatory body;*
- (vii) Programmes to collect and analyse operating experience are established, the results obtained and the conclusions drawn are acted upon and that existing mechanisms are used to share important experience with international bodies and with other operating organisations and regulatory bodies;*
- (viii) The generation of radioactive waste resulting from the operation of a nuclear installation is kept to the minimum practicable for the process concerned, both in activity and in volume, and any necessary treatment and storage of spent fuel and waste directly related to the operation and on the same site as that of the nuclear installation take into consideration conditioning and disposal.*

Cyprus does not operate nuclear installations as defined in Article 2(1) of the CNS.

When applying for an authorisation, the applicant is required to demonstrate that adequate levels of nuclear/radiological safety are achieved. Information provided must be commensurate with the potential magnitude and nature of the hazard relevant for the facility and the practice to be conducted. License holders are required to regularly assess, verify and continuously improve, as far as reasonably achievable, the safety of their installations/facilities in a systematic and verifiable manner, including verification that measures are in place for the prevention of accidents and mitigation of the consequences of accidents. The risk assessment should be periodically reviewed and updated whenever significant changes occur in the current practices and based on the operating experience and the available knowledge.

The national legislative framework provides that operational protection of members of the public in normal circumstances from practices subject to licensing shall include, inter alia, for the relevant facilities: (a) an examination and approval of the proposed siting of the facility from a radiation protection point of view, taking into account relevant demographic, meteorological, geological, hydrological and ecological conditions; (b) acceptance into service of the facility subject to adequate protection being provided against any exposure or radioactive contamination liable to extend beyond the perimeter of the facility or radioactive contamination liable to extend to the ground beneath the facility; (c) examination and approval of plans for the discharge of radioactive effluents; and (d) measures to control the access of members of the public to the facility.

The required risk assessment and control of the effectiveness of safety and protection measures implemented by the license holder or the employer in relation to facilities and sources of radiation shall cover all the different phases in the lifetime of a facility, including decision on siting, design, construction, commissioning, operation, maintenance, shutdown and decommissioning, as appropriate. The risk assessment includes, but is not restricted to: (a) identifying how persons are exposed or likely to be exposed to ionising radiation; (b) identifying how the safety and protection of facilities or sources of radiation are affected or likely to be affected; (c) identifying how loss of use of property occurs or is likely

to occur or whether or not there may be an adverse effect on the property or the environment; (d) determining the level of any normal exposure; (e) determining the likelihood of any exposure occurring and the magnitude of any potential exposure; and (f) assessing the quality and effectiveness of safety measures and the safe operation of sources and other related electrical equipment.

A license holder or the employer shall apply measures following the general prevention principles: (a) avoiding or minimising risks; (b) assessing of the risks that cannot be avoided; (c) combating risks at source; (d) adapting work to people, in particular as regards job posts and the choice of work equipment and working methods; (e) monitoring the evolution of technology; (f) replacing what's hazardous by what's non-hazardous or the least hazardous; (g) developing a single and comprehensive prevention policy covering technology, work organisation, working conditions, relations between the social partners and the impact of factors linked to the working environment; (h) giving priority to collective protection measures without undermining the application or taking of personal protective measures; and (i) providing appropriate instructions to persons at work.

A license holder or the employer shall ensure that the necessary equipment, safety systems and procedures are in place to: (a) reduce, as far as is reasonably practicable, the possibility of a human error that may lead to exposure of any person, loss of use of property or radioactive contamination of the environment; (b) identify and correct timely human errors; and (c) facilitate intervention in the event of an accident.

A license holder or the employer are required to implement quality assurance programmes, which shall ensure, as appropriate: (a) appropriate guarantees that the measures applied for safety are satisfactory; (b) quality control mechanisms and procedures for assessing the effectiveness of the measures; and (c) regularly assessment, verification and continuous improvement, as far as reasonably practicable, of the safety of facilities in a systematic and verifiable manner.

Relevant information is also provided in the analysis under Articles 9-15.



## Section D. Annexes

### *Annex I. Outcomes of the Country Review Report from the 7th CNS Review Meeting*

1. The Country Group highlighted the following measures to improve safety in Cyprus:
  - (a) The regulatory body has signed a bilateral agreement with the Greek Atomic Energy Commission, covering all issues of cooperation concerning ionising radiation, including nuclear safety.
  - (b) The revised National Radiation Emergency Preparedness and Response Plan (in case of radiological or nuclear accidents/events) has been adopted and put into force.
  - (c) Two new sets of Regulations have been implemented:
    - (i) the Protection against Ionising Radiation and Nuclear Safety, Responsible and Safe Management of Spent Fuel and Radioactive Waste, Regulations of 2014, R.A.A. 178/2014; and
    - (ii) the Protection against Ionising Radiation and Nuclear Safety, Protection of the Health of the General Public with regard to Radioactive Substances in Water Intended for Human Consumption, Regulations of 2016, R.A.A. 54/2016.
2. The Country Group highlighted the following regarding international peer review mission of Cyprus:
  - An IRRS mission has been conducted in Cyprus in February 2017.
3. The Country Group identified the following Challenges for Cyprus:
  - (a) Challenge 1: To introduce new legislation with provisions on, for example, functional separation of the regulatory body, legal powers and human and financial resources necessary for the regulatory body, information to be made available to the workers and the general public in relation to safety (new);
  - (b) Challenge 2: To establish an integrated management system in accordance with IAEA safety standards (new);
  - (c) Challenge 3: To implement the IRRS action plan (new);
  - (d) Challenge 4: Further strengthening of the regulatory body and supporting / cooperating institutions (staffing and training, equipment and other resources).
4. The Country Group identified one Suggestion:
  - Suggestion 1: To report status of actions taken on the Challenges from the CNS 7th Review Meeting in the National Report for the 8th CNS Review Meeting.
5. The Country Group identified three Areas of Good Performance:
  - (a) Area of Good Performance 1: National radiation EPR Plan covers all potential scenarios, including nuclear/radiological terrorism, and is integrated within the General Crisis National EPR Plan, which is aligned with IAEA Safety Standards for protecting people and the environment, GSR Part 7;
  - (b) Area of Good Performance 2: Regulatory body's cooperation or consultation with/involvement of the country's other competent authorities, relevant stakeholders including social partners, employer representatives, professional associations etc., for coordinated implementation of legislation;
  - (c) Area of Good Performance 3: The regulatory body has a system in place for establishing and addressing the competence and training needs among its staff aimed at improving their contribution to achievement of organisational goals.

## ***Annex II. Challenges identified for Cyprus in the 7th CNS Review Meeting***

***Challenge 1: To introduce new legislation with provisions on, for example, functional separation of the RA, legal powers and human and financial resources necessary for the RA, information to be made available to the workers and the general public in relation to safety (closed).***

The European Directive 2014/87/Euratom on the nuclear safety of nuclear installations has been transposed to the national legislative, regulatory and organisation framework in July 2017, a few months after the 7<sup>th</sup> CNS Review Meeting took place, by amending to the Protection against Ionising Radiation and Nuclear Safety Law of 2002, as amended in 2009 and 2011.

The 2017's Law amendment introduced to the national framework particular provisions for: (a) the allocation of responsibilities and coordination between relevant state bodies; (b) national safety requirements, covering all stages of the lifecycle of facilities; (c) a system of licensing and prohibition of operation of facilities without a license; (d) a system of regulatory control of safety performed by the regulatory body; (e) effective and proportionate enforcement actions, including, where appropriate, corrective action or suspension of operation and modification or revocation of a license. The national framework is maintained and improved when appropriate, taking into account operating experience, insights gained from safety analyses for operating nuclear installations, development of technology and results of safety research, when available and relevant. The 2017's Law amendment also provides for the powers and the status of the regulatory body, i.e. (a) requiring the regulatory body to be functionally separate from any other body or organisation concerned with the promotion or utilisation of nuclear energy or ionising radiation, and not to seek or take instructions from any such body or organisation when carrying out its regulatory tasks; (b) establishing procedures for the prevention and resolution of any conflicts of interest; (c) allocating appropriate budget to allow for the delivery of its regulatory tasks and an appropriate number of staff with the qualifications, experience and expertise necessary to fulfil its obligations, (d) requiring a periodic self-assessment of the regulatory body and the national framework for safety and to invite every certain period of time an international peer review of relevant segments of the national framework and the regulatory body. Finally, the Law enhanced the provisions on transparency and information to be made available to workers and the general public in relation to the nuclear or radiological safety of facilities, provided that this does not jeopardise other overriding interests, such as security, which are recognised in relevant legislation or international instruments.

A new Law and a new set of Regulations transposing to the national framework the European Directive 2013/59/Euratom for laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation were enacted in December 2018. The new 2018's Law extended the scope of the nuclear and radiological safety and radiation protection legislation and repealed and replaced a significant part of the previous legislation, maintaining all provisions introduced in 2017 on nuclear or radiological safety of facilities. Examples of the main provisions that have been introduced or further strengthened are: (a) the powers of the regulatory body for ensuring its effective independence, and for providing the regulatory body sufficient legal powers, staff, and financial resources; (b) the prime responsibility of operators for safety and other obligations of license holders under the Law; (c) requirements for building capacity, education and training, and development of expertise and skills; (d) a system of radiation protection based on dose constraints, reference levels and dose limits; (e) justification and regulatory control of practices; (f) security of radioactive sources and arrangements to regain control over orphan sources; (g) system for protective actions to reduce undue radiation risks associated with unregulated sources (of natural or artificial origin) and contamination from past activities or events; (h) the establishment of an emergency management system, emergency response plans and international cooperation; (i) information to the members of the public likely to be affected in the event of an emergency or actually affected in the event of an emergency; (j) programmes and strategies on existing exposure situations; (k) provision of technical services; (l) interfaces of safety with nuclear security and with the system of accounting for, and control of, nuclear material;

The main elements of the legislative and regulatory framework are also described under Article 7.

The new Law and the new set of Regulations transposing to the national framework the European Directive 2013/59/Euratom pose the obligation to the regulatory body to adopt in the national framework a series of secondary legislative measures of binding nature by means of Notifications (Specifications; Standards; Codes of Practice; Guides) under the main Law and regulatory arrangements. *As of July 2022, 21 such Notifications have been issued and published in the Official Journal of the Republic, and consultations on two further Notifications, expected to be put into force later in 2022, are in progress.*

A number of such legislative and/or regulatory measures have been already adopted, such as: (a) the national policy and strategy on nuclear/radiological safety; (b) the national strategy on the management of existing exposure situations; (c) the national emergency management system, commensurate with the results of the assessment of potential emergency exposure situations and for responding effectively to emergency exposure situations in connection with practices or unforeseen events in the country; (d) the national action plan addressing long-term risks from radon exposures in dwellings, buildings with public access and workplaces for any source of radon ingress, whether from soil, building materials and water; (e) specifications for types and classes of practices, procedures and regulatory control requirements relating to the notification or the granting of authorisation through registration or licensing; and (f) specifications for the recognition of Services and Experts in the field of Radiation Protection and Nuclear Safety (Radiation Protection Experts; Medical Physics Experts; Dosimetry Services; and Occupational Health Services).

### **Challenge 2: To establish an Integrated Management System in accordance with IAEA safety standards (ongoing).**

The regulatory body's management system comprises a number of processes and procedures that have been developed and documented based on the operational experience, and includes the organisational structure, levels of responsibilities, scheme of service for employees, strategic plan, vision, mission, annual work plans and performance review. The regulatory body has initiated the process and it is progressing well towards independently developing and integrating all essential elements of a management system into a single framework that is aligned with its safety goals and contributes to their achievement and whose processes are open and transparent, in accordance with IAEA's GSR Part 2. Through the management system, the regulatory body aims at: (a) ensuring that the responsibilities assigned to the regulatory body are properly discharged; (b) maintaining and improving the performance of the regulatory body by means of the planning, control and supervision of its safety related activities; and (c) fostering and supporting a safety culture in the regulatory body through the development and reinforcement of leadership as well as good attitudes and behaviour in relation to safety on the part of individuals and teams. The regulatory requirements are considered in conjunction with the more general requirements under the management system of the regulatory body, contributing in preventing safety from being compromised.

The regulatory body has established a management policy and has already integrated in its management system its vision, mission, goals and values, its strategic planning, the annual and medium-term programming and its resources, and has significantly progressed in establishing its operation procedures, instructions and files/documents.

The regulatory body has designed the establishment of an effective management system based on seven principles: (a) Customer and interested parties focus: meet and exceed customer needs and the interested parties expectations; (b) Leadership: unified direction and purpose across management and employees; (c) Engagement of people: ensure competent and engaged staff, i.e. all employees to receive sufficient training and support to perform their duties as required; (d) Process approach: well understood internal processes to improve efficiency; (e) Improvement: proactive approach to driving improvement and adapting to changing conditions; (f) Evidence-based decision making: management measurable indicators and observables are

established, measured and acted upon to drive continuous improvement; and (g) Relationship management: identify and effectively manage key stakeholder and supplier relationships.

### **Challenge 3: To implement the IRRS action plan (ongoing).**

An IAEA full-scope IRRS peer review mission of the regulatory body and of the radiation protection and nuclear safety system in Cyprus has been conducted in Cyprus in the period 13-22 February 2017, just a month ahead of the 7<sup>th</sup> CNS Review Meeting held in March 2017. The peer review was carried out in accordance with the provisions of the national legislation, the IAEA's safety standards and the European Directive 2009/71/Euratom establishing a Community framework on the nuclear safety of nuclear installations, as amended by Directive 2014/87/Euratom.

As the previous report was submitted in August 2016, information on the findings of the IRRS mission have been only given orally during the national presentation in the Review Meeting. For ease of reference, the main findings of the mission are listed below.

The IRRS team recognised that Cyprus has a dedicated regulatory body for the protection of people and the environment, and for continuous improvement of safety. However, the team identified issues warranting attention or needing further improvement:

- (a) review of the legal framework to ensure compliance with the requirements of GSR Part 1 (Rev. 1);
- (b) establishment of a national policy and strategy for safety;
- (c) provision to RICS/DLI of adequate human and financial resources;
- (d) establishment of formal processes, based on specific policies, principles and associated criteria and following specified procedures;
- (e) strengthening of RICS/DLI's powers and responsibilities in the licensing decision-making process through the legal framework;
- (f) extending prime responsibility for safety in the legislation;
- (g) provision for a system to ensure building and maintaining the competence of all parties having responsibilities in relation to the safety of facilities and activities;
- (h) establishment of a programme of inspections that specifies the frequency of inspection taking into account the radiation risks associated with the facility or activity, and areas and programmes to be inspected in accordance with a graded approach;
- (i) provision of a documented record of the findings communicated verbally to authorised parties at the end of an inspection;
- (j) establishment of limits for radioactive discharges based on operational constraints;
- (k) identification and dissemination of lessons learned from operating experience and regulatory experience;
- (l) establishment of a comprehensive human resource plan;
- (m) establishment of an integrated management system;
- (n) establishment of clear criteria for amendment, renewal, suspension or revocation of a license;
- (o) issuance of guides on regulating transport of radioactive material;
- (p) generic justification of radiological procedures.

The IRRS team also identified the following good practices:

- (a) RICS/DLI has a system for continuous assessment, implemented annually, for establishing and addressing the competence and training needs among its staff aimed at improving their contribution to achievement of organizational goals; and
- (b) the Government has stipulated in the Law that the regulatory body should periodically conduct self-assessment and invite an international peer review with the aim of continuously improving safety.

***RICS/DLI has prepared and is implementing an action plan for the full implementation of the peer review recommendations and suggestions. Currently, as of July 2022, 26 out of the 40 recommendations and suggestions made in the IRRS report are considered closed and 11 partially closed.***

Part of the peer review recommendations or suggestions have been implemented by amending the national legislation through the transposition of the Directives 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation and 2014/87/Euratom amending Directive 2009/71/Euratom that establishes a Community framework on the nuclear safety of nuclear installations.

RICS/DLI has made public the final report of the peer review on its website, has given its consent to IAEA for uploading the review report at the relevant IAEA website (<https://www.iaea.org/node/35185>) and also has communicated the report to the European Commission and the EU member states through the Council of the EU.

Moreover, an IAEA Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation Programmes (ARTEMIS) peer review ***was conducted from 23 to 27 May 2022, after postponed twice due to the pandemic situation (initially planned in October 2020; June 2021), according to the provisions of the Law and the Council Directive 2011/70/Euratom for establishing a community framework for the responsible and safe management of spent fuel and radioactive waste. The mission concluded that good progress has been made as concerns the safe and responsible management of radioactive waste and DSRS in the country. Nevertheless, the country should continue with further improvements to meet high standards of safety for radioactive waste and DSRS management.***

***The ARTEMIS review team provided eight recommendations to further address safety issues in the management of radioactive waste and DSRS:***

- (a) The Government should ensure that provisions, particularly, human and financial resources, are in place to update and implement the national strategy for the management of radioactive waste and DSRS.***
- (b) The regulatory body should ensure that responsibility is allocated when the National Centralised Storage Facility takes the ownership of DSRS.***
- (c) The Government should update the national strategy for radioactive waste and DSRS management to address the long-term, including aspects such as:***
  - (i) consolidating the national inventory of DSRS and radioactive waste***
  - (ii) identifying DSRS which cannot be shipped abroad***
  - (iii) investigating possible management options for these DSRS***
  - (iv) identifying a disposal solution***
  - (v) establishing a roadmap for implementing the disposal solution***
  - (vi) assigning adequate financial and human resources for the implementation of the disposal solution.***
- (d) The Regulatory body should ensure that all radioactive waste and DSRS are stored in a licensed storage facility.***
- (e) The Regulatory body should review and modify the license of the operator of the National Centralised Storage Facility as necessary according to the safety assessment to ensure all activities are addressed, all risks are mitigated and responsibilities are clear.***
- (f) The operator of the National Centralised Storage Facility should develop a comprehensive safety assessment and submit it for review to the regulatory body.***

- (g) The Government should establish a dedicated fund for the management of radioactive waste, covering existing and future needs.*
- (h) The Government and all bodies responsible for management of radioactive waste and DSRS should ensure that programmes for capacity building take full advantage of support provided by external entities such that reliance on those entities reduces over time.*

*The ARTEMIS team also provided Cyprus with four suggestions:*

- (a) The Regulatory body should consider establishing a time limit for the license holder to transfer DSRS to the National Centralised Storage Facility.*
- (b) The Regulatory body should consider establishing a timeframe in the regulatory provisions to ensure that a DSRS shall be returned to the supplier after the end of its service lifetime.*
- (c) The Regulatory body should consider including into the existing Inspection Manual a specific programme and procedure for the inspections of the National Centralised Storage Facility.*
- (d) Establish a road map and implement actions in fulfilment of the ARTEMIS 2022 recommendations and suggestions.*

*RICS/DLI also intends to make the final report public.*

*The regulatory body aims, through self-assessments and accompanying peer reviews of the legislative, regulatory and organisational infrastructure, at strengthening and enhancing the national framework and ensuring a strong nuclear safety regime, by considering different approaches to the organisation and practices of the regulatory body, exchange of professional experience and sharing lessons learned and good practices in an open and cooperative manner.*

*The commitment of the country to improve safety through peer reviews such as IRRS and ARTEMIS missions has been identified as an area of good performance under the 6<sup>th</sup> review cycle of the JC.*

#### **Challenge 4: Further strengthening of the regulatory body and the supporting / co-operating institutions (staffing and training, equipment and other resources) (ongoing).**

RICS was established in 2002 within DLI of the Ministry of Labour and Social Insurance, and operates under Section 7 of the Law. The new Law includes enhanced provisions on the resources of the regulatory body. Specifically, the new Law provides that the regulatory body shall, inter alia, receive exclusive and appropriate funds and be provided with the necessary facilities and equipment to enable it carry out its regulatory tasks as defined in the national framework. The regulatory body shall also employ the appropriate number of staff with the necessary qualifications, experience and expertise to fulfill its obligations.

*As of July 2022, RICS is staffed, apart from the Director of DLI (Chief Inspector under the Law, as Head), with four Labour Inspection Officers (in the area Radiation Safety and Protection), qualified in radiation protection and nuclear / radiological safety and security.* Although several assessments of human resource needs have been conducted in the past (both by independent bodies and the Department of Public Administration and Personnel of the Ministry of Finance) and subsequent proposals have been submitted to the Government, appropriate staffing of RICS is still a challenge. The retirement of experienced staff is also a challenge to deal with, as well as the common recruitment of all DLI Officers and the centralised recruitment procedure followed by the Government (appointments of new staff through the procedures of the Civil Service Committee). *However, two new posts intended for further staffing the regulatory body have been announced by the Civil Service Committee, and is expected that the new posts will be filled in near future, thus resulting to an increase of 50% compared to current*

***staff. It's worth noting that two out of eight new posts available to DLI have been allocated to the radiation safety area, showing the priority that DLI provides to RICS.***

The staff of RICS is trained on a continuous basis both in Cyprus and abroad. The training scheme applied by the regulatory body for its staff covers the principles, concepts and technological aspects, as well as the procedures followed by the regulatory body for reviewing and assessing applications for authorisation, for inspecting facilities and activities, and for enforcing regulatory requirements. Further information is provided under Article 8. Of great importance are the trainings and other education activities organised under the various IAEA's Technical Cooperation Programmes, in which Cyprus participates to.

RICS/DLI is funded through the Government's annual budget and the amounts allocated are considered adequate. RICS has been provided adequate facilities, office equipment, accounting, secretarial and IT support, instruments and other resources to perform its regulatory activities.

RICS is cooperating with other governmental departments and institutions in performing its duties, e.g. the Customs Department, the Police, the Fire Brigade, the State General Laboratory, the Civil Defense, academic institutions, and other technical support organisations, as further described under Article 8. In particular, to radiation emergencies, the response organisations involved are required to: (a) harmonise the individual action plans under their supervision with the national emergency plan; and (b) take all necessary measures, including the availability, in quantity, quality and time, of the necessary human resources and technical means, with the aim of creating and maintaining the necessary infrastructure and preparedness and response procedures. These measures also include a provision for including in the annual budgets of the organisations involved the necessary funds.

***This challenge has also been identified by the ARTEMIS peer review conducted in May 2022.***

### ***Annex III. Feedback against the Major Common Issues Arised from Country Group Discussions during the 7th CNS Review Meeting***

Most of the Major Common Issues identified during the country group discussions in the 7<sup>th</sup> CNS Review Meeting are relevant to Cyprus. Cyprus has made significant progress in all the applicable common issues, as described below and referenced elsewhere in this report.

#### **(a) Safety culture**

Cyprus has taken measures to enhance and further promote safety culture in the regulatory body and is progressing well for the license holders / operators.

The license holder or the employer takes appropriate measures to foster, promote and maintain an effective safety and protection culture at all levels of the staff and the management itself, as a key factor in achieving a high level of safety and protection. Further information is provided under Article 10.

The regulatory body has initiated the process and is applying a policy on management, a relevant strategy and a management system that is aligned with its safety goals and contributes to their achievement and whose processes are open and transparent, in accordance with IAEA's GSR Part 2 and following ISO 9001. Relevant information is also provided under Challenge 2 in Annex II.

***The Management Manual of RICS/DLI provides that:***

***The safety culture at RICS/DLI is a combination of values, competencies, perceptions and behavioural patterns within the organisation. The safety culture reflects the way that both managers and other personnel think and behave, in every RICS/DLI activity and at any period of time, without control, supervision or external observation. RICS/DLI aspires to be an example of high safety standards and a safety mentality within the Ministry, in order to exemplify the persons or businesses it is called upon to control through the legislation it applies.***

***RICS/DLI has adopted a management policy, which contributes to the improvement and establishment of a safety mentality, both in the upper layers of its hierarchy and in the rest of the staff and is described by the main characteristics below:***

#### ***(a) Safety is a clearly recognized value within the organisation:***

- (i) safety is given high priority, which is evidenced through planning, documentation, communications and decision-making;***
- (ii) safety is a primary factor in the allocation of resources;***
- (iii) the strategic importance of safety is reflected in the strategic planning and the entire Management System;***
- (iv) among the staff the belief prevails that safety and the achievement of the organisation's objectives strongly interrelated factors;***
- (v) in decision-making there is a proactive and long-term approach to safety issues, and***
- (vi) the development of a safety culture is universally accepted and supported at all levels of the RICS/DLI work.***



**(b) Leadership for safety is clear:**

- (i) the senior management is clearly committed to safety;**
- (ii) the commitment to safety is evident at all levels of management;**
- (iii) the management's involvement in safety-related activities is visible to staff;**
- (iv) the leadership skills of DLI staff are systematically developed;**
- (v) the management ensures that the DLI employs scientifically and technically sufficient and competent people;**
- (vi) the management seeks the active participation of the staff in the improvement of safety;**
- (vii) the impact on safety is considered in change management processes;**
- (viii) the management demonstrates a continuous effort to foster transparency and good communication; and**
- (ix) relationships between staff are based on trust and mutual respect.**

**(c) Safety-related responsibilities are clear:**

- (i) there is a clear relationship between DLI and the approved / licensed persons or undertakings which ensures that the primary responsibility for safety rests with the person or undertaking and that this responsibility cannot be substituted, assigned, transferred or delegated to other persons / businesses,**
- (ii) roles and responsibilities are clearly defined, distinct and understandable;**
- (iii) there is a high level of compliance with legislation and procedures;**
- (iv) the management appropriately delegates, where applicable, the authority to exercise regulatory control to enable clear responsibilities to be established;**
- (v) a sense of ownership of safety is fostered that is evident at all organizational levels and for all personnel.**

**(d) Safety is integrated into all activities of the organisation.****(e) Safety is based on knowledge, expertise and experience.****(b) International peer reviews**

Cyprus actively participates and benefits from the international peer review assessments that are available. Relevant provisions have been included as requirements for the regulatory body in the legislation, to conduct self-assessments of the regulatory body itself and of the regulatory framework for radiation, transport and waste management safety and to invite periodically, but at least every 10 years, peer reviews of the regulatory radiation safety system. Further information is provided under Challenge 3 of Annex II.

**(c) Legal framework and independence of regulatory body**

Cyprus has further strengthened the legal and regulatory framework and the has ensured the independence of the regulatory body. Further information is provided under Articles 7 and 8.

**(d) Financial and human resources**

- As detailed under Articles 8 and 11.

**(e) Knowledge management**

- As detailed under Article 8 and 10.

**(f) Supply chain**

- Not applicable

**(g) Managing the safety of ageing nuclear facilities and plant life extension**

- Not applicable

**(h) Emergency preparedness**

- As detailed under Articles 8, 9 and 16.

**(i) Stakeholder consultation and communication**

- As detailed under Article 6.

#### ***Annex IV. References to national laws and regulations and other EU or international instruments***

- [1] The Convention on Nuclear Safety (INFCIRC/449).
- [2] The Convention on Nuclear Safety (Ratification) Law of 1998, L. 20(III)/1998.
- [3] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security Law of 2018, L. 164(I)/2018.
- [4] 7th CNS Review Meeting President's Report (CNS/7RM/2017/09/Final).
- [5] Vienna Declaration on Nuclear Safety on principles for the implementation of the objective of the Convention on Nuclear Safety to prevent accidents and mitigate radiological consequences (CNS/DC/2015/2/Rev.1).
- [6] Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations.
- [7] 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.
- [8] Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom.
- [9] Euratom Regulation 2016/52 on the maximum permitted levels of radioactive contamination of food and feed following a nuclear accident or any other radiological emergency.
- [10] IAEA Safety Standards Series No. GSR Part 1 (Rev. 1) - Governmental, Legal and Regulatory Framework for Safety.
- [11] IAEA Safety Standards Series No. GSR Part 3 - Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards.
- [12] IAEA Safety Standards Series No. GSR Part 7 - Preparedness and Response for a Nuclear or Radiological Emergency.
- [13] IAEA Code of Conduct on the Safety and Security of Radioactive Sources.
- [14] The Protection against Ionising Radiation and Nuclear Safety (Responsible and Safe Management of Spent Fuel and Radioactive Waste) Regulations of 2014 (R.A.A. 178/2014).
- [15] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Basic Safety Standards for the Protection against the Dangers Arising from Exposure to Ionising Radiation) Regulations of 2018 (R.A.A. 374/2018).
- [16] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications for practices, procedures and requirements of regulatory control relating to the notification or the granting of authorisation through registration or licensing) Notification of 2019 (R.A.A. 153/2019).
- [17] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications for the Recognition of Services and Experts in the field of Radiation Protection and Nuclear Safety and Protection) Notification of 2019 (R.A.A. 154/2019).
- [18] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Standards for Education and Training in Radiation Protection and Nuclear and Radiological Safety and Security) Notification of 2019 (R.A.A. 327/2019).
- [19] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Standards for the Control and Recovery of Orphan Radioactive Sources and for Responding to Emergencies due to Orphan Sources) Notification of 2019 (R.A.A. 328/2019).
- [20] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications for setting out and implementing a monitoring programme of the quality from radiological point of view of the water intended for human consumption) Notification of 2019 (R.A.A. 365/2019).
- [21] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications, requirements and obligations for building materials and classes or types of practice involving naturally-occurring radioactive material that lead to exposure which cannot be disregarded from a radiation protection point of view) Notification of 2019 (R.A.A. 392/2019).

- [22] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Radiation Protection of Members of the Public) Notification of 2020 (R.A.A 20/2020).
- [23] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Designation of Controlled and Supervised Areas) Notification of 2020 (R.A.A 21/2020).
- [24] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the role, the responsibilities and the practices which require the appointment of a Radiation Protection Officer is required by the undertaking or the employer) Notification of 2020 (R.A.A 22/2020).
- [25] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on Setting-Out and Implementing Diagnostic Reference Levels for Radiodiagnostic Examinations) Notification of 2020 (R.A.A 23/2020).
- [26] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Individual Radiological Monitoring) Notification of 2020 (R.A.A 24/2020).
- [27] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (General Conditions for Authorisation through Registration for Veterinary Radiodiagnostic Practices) Notification of 2020 (R.A.A. 51/2020).
- [28] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications on the registration of practices with radiation generators used for non-medical imaging exposure and operating at less than 200 kV, excluding computed tomography practices) Notification of 2020 (R.A.A. 390/2020).
- [29] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Implementation of a Management System by the Undertaking or the Employer) Notification of 2020 (R.A.A. 427/2020).
- [30] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on Conducting Risk Assessment) Notification of 2020 (R.A.A. 428/2020).
- [31] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the Application of Local Rules, the Supervision of Classified Areas and the Application of Additional Requirements for Classified Areas) Notification of 2020 (R.A.A. 459/2020).
- [32] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (General Conditions for Authorisation through Registration for Practices with Sealed Radioactive Sources of Category 5) Notification of 2020 (R.A.A. 584/2020).
- [33] The Protection against Ionising Radiation and Nuclear and Radiological Safety and Security (General Conditions for Authorisation through Registration for Practices with Unsealed Radioactive Sources with a Maximum Total Yearly Radioactivity of 100 MBq for Laboratory (in vitro) Medical or Non-Medical Application Purposes) Notification of 2020 (R.A.A. 585/2020).
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  - [48] The UNSC Resolution 1540.
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  - [50] The United Nations Recommendations on the Transport of Dangerous Goods.
  - [51] The European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR).
  - [52] The International Maritime Dangerous Goods (IMDG) Code.
  - [53] The International Civil Aviation Organisation (ICAO) Technical Instructions on the Safe Transport of Dangerous Goods.
  - [54] The Universal Postal Union (UPU) Convention.
  - [55] Council Directive 2011/70/Euratom of 19 July 2011 for establishing a community framework for the responsible and safe management of spent fuel and radioactive waste.
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